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EDITORIAL

Legislations and Medical Practice

"Medicine is a sacred Calling… its desecration amounts to blasphemy".

Descartes

In 1986 the Consumer protection act was promulgated in India. Probably, nor purported for Medical profession yet, the Court settled the consumer's jurisdiction which included Medical profession. Other Countries soon adopted the Act. Thereafter, the Patients became consumers and doctors, the service provider (a dignified name for a Trader). The profession already fettered with a number of legal chains got another noose. Undeniably, this gave patient a sharp tooth against health service providers but its abuse was soon apparent, and the spurt in the Consumerism soon was rewarded by a prohibitory rising cost of the medical treatment, the legal and insurance expenses were ultimately passed on to the patient. Among recent year, as a populist measure there has been a tendency to add some more stringent criminal laws against medical practice. Though some such laws already exist.

It should be clearly understood that the Acts alone cannot contain "Actus Reus". Too many laws against medical profession will harass and exploit the medical community in unfair hands. This will lead to a non-optimal performance by the demoralized profession. Further, the medical ethics is based on the Concept of total Beneficence to patients and absence of malfeasance. This concept is a practical absurdity. The treatment, investigations and operations are done for the benefit of the patients (Beneficence) but none of them is without complications and risk (A lack of Malfeasance) and sometimes the result of operation and treatment is less than expected. The unexpected death during the treatment or operation is possible. The problem begins here, the patient party feels that there has been an act of Ommission or Commission on the part of the doctors. They vandalize the hospital, beat or even have killed the doctors and then file a case to the police. The usual repercussion is a strike by the profession leading to the death of many innocent patients who had no part in the sordid drama. Will new laws eliminate this? The answer is a humble "No".

The aphorisin is clear. The doctors will have to learn the art of good medical- practice and the patient party should clearly understand that doctors are not God. Moreover, there is Court to go for the redressal of the grievances rather than criminally assaulting the Service Providers.

The Hospital do need effective laws to prevent such happenings.

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Spectrum of Hepatits B Infection Among Patients Attending Liver Unit in Nepalgunj Medical College – Kohalpur

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ABSTRACT

Introduction: Hepatitis B infection is a global problem. Hepatitis B virus (HBV) infection related liver disease is also not an uncommon problem in our country too. Reports regarding pattern of chronic HBV infection are also lacking. The aim of the present study was to determine the spectrum of chronic HBV infection among patients attending the liver clinic in a tertiary care center. **Method:** A hospital based descriptive cross-sectional study was carried out in Liver unit of Nepalgunj Medical College, Kohalpur, from April 2018 to November 2018. All patients with HBsAg positive were further tested for HBeAg, HBeAb, HBV DNA quantitative and liver function test. Ultrasound examination was advised for any evidence of chronic liver disease. Staging was done according to viral serology, liver biochemistry and ultrasonography of liver. **Results:** Total patients enrolled were 119. Majority of patents were in between 30-60 years (51.3%) with male predominance 59.7%. Most of patients were in the stage of HBeAg negative chronic infection 66.4% with normal transaminase and HBV DNA <2000 IU/ML. Majority of patients having unknown source of infection 90.8%. Incidental detection (67.2%) was common mode of detection. **Conclusions:** Majority of patients were in HBeAg negative chronic hepatitis B infection phase with normal transaminase and low HBV DNA not requiring treatment.

Key words: *Chronic hepatitis B, Hepatitis Be antigen, Hepatitis B virus, Hepatitis B virus DNA*

INTRODUCTION

Hepatitis B infection which is caused by the hepatitis B virus (HBV), an enveloped DNA virus remains a major global public health problem with significant morbidity and mortality[1,2,3]. Approximately 240 million people are chronic HBV surface antigen (HBsAg) carriers, with a large regional variation of HBsAg positive patients between low (<2%) and high (>8%) endemicity levels[4]. Among Asian countries, Nepal has the lowest prevalence of hepatitis B virus (HBV) infection with an HBsAg carrier rate of 0.9%[5]. Carriers of HBV areat increased risk of developing complications like cirrhosis, hepatic decompensation, and hepatocellular carcinoma (HCC)[6].

The natural course of chronic HBV infection is determinedby the interplay between virus replication and the host immuneresponse and final outcome of CHB infection depends on the stage of CHB infection, severity of liver disease. So early recognition of disease condition is very crucial for prognosis. The aim of present study was to assess the spectrum of CHB infection among patients attending tertiary care center, also this kind of study was lacking in this region too.

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METHODOLOGY

This hospital based descriptive cross-sectional study was carried out in Liver unit of Nepalgunj Medical College, Teaching Hospital, Kohalpur from April 2018 to November 2018. Ethical approval was taken from Institutional Review Board (IRB), NGMC and written informed consent was taken from each patient. All patients attending liver OPD with liver related disease found positive for HbsAg during screening, referred from other departments and other centers with HbsAg positive were enrolled in the study. HbsAg was further confirmed by ELISA. Anti HCV Ab and HIV was also done for co-infection as mode of transmission is similar in all groups. Further evaluation for those found to beHBsAg positive included baseline liver function tests, hepatitis Be antigen (HBeAg), anti-HBeAband HBV DNA quantification. Anti-HBcIgG, Anti-HBcIgM, Anti HbsAb were done when considered appropriate. Ultrasound examination was adviced for any evidence of chronic liver disease and it's squeal like ascites, hepatocellular carcinoma (HCC) or portal vein thrombosis. Patients positive for anti-HBcIgM were followed for a further 6 months for viral clearance. Alanineaminotransferase (ALT) levels >40 U/L were considered as elevated for both men and women. Patient information included age, gender, date of detection and duration of HBsAg positivity, family history of liver disease including HCC, past history of tattoo, blood transfusion, jaundice, and surgery were noted. All family members including children of index HBsAg positive patients were advised for HBsAg screening and further evaluation, if found positive. HBsAg negative patients were advised for vaccination against HBV infection. Based on the viral profile and transaminase levels and ultrasound findings, patients were categorized as HBeAg positive chronic infection, HBeAg positive chronic hepatitis, HBeAg negative chronic infection, HBeAg negative chronic hepatitis and acute hepatitis B.[7] Data

collected in structured proforma were entered in Microsoft Excel 2007 and statistical analysis was done with SPSS 20 software.

RESULTS

Total patients enrolled in the study were 119. Minimum age was 3 year and maximum age was 80 year. Majority of patients were in the age group of 30-60 years 51.3% (61) with male predominance 59.7% (71) as shown in table I.

Variable		Number	Percentage
Age (Years)	<10	3	2.5%
	10 - 30	45	37.8%
	30 - 60	61	51.3%
	>60	10	8.4%
Mean±SD age: 36.47 ±15.67, Minimum age: 3 years & Maximum age: 82 years			
Gender	Female	48	40.3%
	Male	71	59.7%
Districts	Achham	4	3.4%
	Bajhang	5	4.2%
	Banke	18	15.1%
	Bardia	6	5.0%
	Dadeldhura	1	0.8%
	Dailekh	4	3.4%
	Dang	11	9.2%
	Darchula	2	1.7%
	Dolpa	1	0.8%
	Doti	4	3.4%
	Jagarkot	6	5.0%
	Kailali	28	23.5%
	Kalikot	8	6.7%
	Kanchanpur	6	5.0%
	Rolpa	1	0.8%
	Rukum	4	3.4%
	Salyan	2	1.7%
	Sunsari	1	0.8%
	Surkhet	7	5.9%

Table I: Showing demographic characters of patients

Among total enrolled patients majority were HbeAb positive 90.8% (108), Anti HBcIgM positive found in 5 patients. HBV DNA was done only by 107 patients. Majority of patients were having value < 2000iu/ml. 52.3% (56). One patient was co- infected with Hepatitis C infection. T

able III showing possible mode of transmission of HBV infection. Majority of patients having unknown source of infection 90.8% (101). Majority of patients were detected having HBsAg positive incidentally during screening for other purposes as shown in table IV.

Variable		Number	Percentage
HbeAg	Positive	11	9.2%
HbeAb	Positive	108	90.8%
Anti HBcIgM	Positive	5	4.2%
HBV DNA (IU/ML) (n=107)	<2000	56	52.3%
	2000-20000	23	21.5%
	>20000	28	26.2%
Anti HCV Ab	Positive	1	0.8%
HIV	Negative	119	100.0%

Table II: Showing serological profile

Variable	Number	Percentage
Vertical	8	6.7%
Post blood transfusion	0	0.0%
IDU	0	0.0%
Hemodialysis	0	0.0%
Sexual	1	.8%
Surgery	0	0.0%
Family histroy	9	7.6%
Unknown	101	90.8%

IDU-intravenous drug user

Table III: Possible mode of transmission

Variable	Number	Percentage
Screening during pregnancy	9	7.6%
Screening during surgery	0	0.0%
Screening during blood transfusion	0	0.0%
Incidental detection	80	67.2%
Symptomatic	30	25.2%

Table IV: Mode of detection

Variable	Number	Percentage
Acute HBV Infection	4	3.4%
HBe Ag Negative chronic hepatitis	32	26.9%
HBeAg Negative chronic Infection	79	66.4%
HBeAg Positive chronic Infection	4	3.4%

Table V: Stage of HBV Infection

Variables	Acute HBV Infection (Mean±SD)	HBe Ag Negative chronic hepatitis (Mean±SD)	HBeAg Negative chronic Infection (Mean±SD)	HBeAg Positive chronic Infection (Mean±SD)	*P-Value
Age (Year)	31.25±6.29	50.72±13.66	31.99±12.93	16.25±7.8	<0.001
Bilirubin(mg/dl)	10.53±2.16	3.16±1.41	1.35±0.46	1.1±0.14	<0.001
ALT (u/l)	835.75±399.67	89.38±28.1	37.33±6.9	33.5±0.58	<0.001
HBV DNA (iu/ml)(n=103)	202775±122384.92	61475.84±96038.1	1488.41±3626.87	113775±4912.82	<0.001

Table VI: Relation between different stage with age, bilirubin level, and ALT and DNA level

There was significant relation between different stages of HBV infection in relation to age, serum bilirubin level, ALT level and HBV DNA level as shown in table VI.

DISCUSSION

In present study CHB infection was more common in male gender 59.7 %(71) as compared to female 40.3% (48). Majority of patients were in the age group of 30-60 years 51.3% (61). Balasubramanian et al. also reported male preponderance in their study with mean age of men was 40 years and of women was 34 years[8]. Shrestha SM et al, in their prevalence study also reported male predominance but highest prevalence of CHB infection among age groups of 6-15 years compared to 30-60 years in our study[5]. The difference in age group might be explained as our was hospital based study, serological test for HbsAg only done when indicated as compared to their community based prevalence study.

Our study showed serological profile shows HBeAg negative group was more common 90.8% (108) than HBeAg positive group 9.2 % (11). Lahiri et al, also reported majority 89.5 % (384) were HBeAg negative, while 10.5% (45) were HBeAg positive in their study[9]. Similar results were also reported by Amarapurkar et al, 61% (222) HBeAgnegative and 39 % (141) were HBeAg positive[10].

In our study, one patient was found to be co-infected with both hepatitis B and hepatitis Cviral infection. Precise study is limited regarding co-infected patients. One study by Desikan et al, from India reported 1.89% co-infected with both virus[11]. Hepatitis B virus (HBV) and hepatitis C virus (HCV) have several important similarities including worldwide distribution, hepato-tropism, similar modes of transmission and the ability to induce chronic infection that may lead to liver cirrhosis and hepatocellular carcinoma. Co-infection with both HBV and HCV would be expected to be linked with higher morbidity as well as mortality and impact healthcare resource utilization.

In present study, possible mode of transmission was unknown among majority of patients 90.8 % (101). Vertical transmission was reported in 6.7% (8). Shrestha SM alsoreported perinatal transmission is rare in Nepalese population[12]. Another study by Shrestha SM et al, reported horizontal spread was more common among young adults[13]. In a study conducted by Khokhar et al, in Pakisthan also reported intramuscular injections and surgery were noted to be frequent risk factors[14].

In our study most of the patients were detected incidentally during screening for other purposes 67.2% (80). These groups of patients are mostly asymptomatic and study also revealed that asymptomatic subjects with incidental detection of hepatitis B surface antigen (HBsAg),usually have a benign non-progressive course[15]. In our study majority of patients were in HBeAg negative chronic infection 66.4% (s79) not requiring treatment, similar observation was also reported by Balasubramanian et al.[8] In this group of patients were having normal bilirubin, normal ALT and low or undetected HBV DNA level comparable to other study also[9]. So in this group of patients, no need of antiviral therapy unless significant fibrosis detected by liver biopsy or other non-invasive tests.

LIMITATION

In our study, HBV DNA quantitative analysis was not done by all patients and accurate assessment of liver fibrosis which is measured by liver biopsy and or transient elastography (Fibro Scan) is not done in our study.

CONCLUSION

A significant number of HBsAg-positive patients belong to HBeAg negative chronic hepatitis B infection phase, not requiring treatment.

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Outcome of Keloid's Treatment in a Tertiary Care Hospital

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ABSTRACT

Introduction: Keloids are characterized by their continued growth following trauma, extension into normal tissue and their high recurrence rate following excision. Keloids are common following ear piercing or flame burns. These lesions are highly conspicuous and cosmetically unappealing. Multiple methods including surgery, radiotherapy, antimitotic agents, silicone sheet, pressure clips and cryotherapy have been advocated. The risk of recurrence and the need to prevent distortion of following resection is a challenge to the surgeon. **Material and Methods:** A total of 46 patients with keloid were treated at the plastic surgery department of the Nepalgunj Medical College between January 2013 to March 2017. The patients were divided in two groups. Group A consisted of 24 patients with keloid in their ear where complete excision of keloid was done with tension free repair and was supplemented with intralesion triamcinolone injection at the time of operation and thereafter as and when needed. Group B consisted of 22 patients. Out of these 15 patients had keloid over the anterior chest wall and rest 07 had keloid over the deltoid region. These cases received intralesional triamcinolone only, a total of 5 such injections at month interval as a tension free repair after excision was not considered feasible. **Results & Conclusion:** Patients in Group A underwent surgical excision and intra and post operative intralesional steroids and patients in Group B received 4 weekly intralesional injection of triamcinolone injection 40 mg. Out of 24 keloid in Group A two developed post-excision recurrence during a mean follow-up period of 24 months. However they regressed with subsequent local injection of steroid. The group B consisting of scar over the deltoid region and anterior chest wall were not found suitable for excision as a tension free repair (a must to prevent recurrence) was not considered possible. Complete Excision of keloids with tension free suture and local steroid injection is a simple & favoured technique for the management of keloid, it preserves contour & skin quality and has a low recurrence rate. Unfortunately all cases are not suitable for total surgical excision. In such cases, steroid locally has to given locally at monthly intervals. The keloids regresses, but atrophy and depigmentation at the site of injection are the complications.

Key Words: *Combination therapy, fillet flap, intralesional steroid, keloid, keloid recurrence*

INTRODUCTION

Keloids are characterised by their continued growth following trauma, extension into normal tissue and their high recurrence rate following excision. Keloids are common following ear piercing or flame burns. These lesions are highly conspicuous and cosmetically unappealing. It is well known that keloids are "Confused scars that do not know when to stop growing". The basic pathology is an imbalance between anabolic (proliferation) and catabolic (apoptotic) phases of the healing process[1].

The various treatment modalities so far described in managing keloids are surgical excision, intralesional steroidal injections, compression therapy with silicon sheets, cryotherapy, laser, α-2b interferon and chemotherapeutic agents like 5-fluorouracil [2,3]. Surgical excision totally eliminates the lesion but the main disadvantage is ≥ 50% recurrence if used alone[3]. The disadvantage with the other procedures is incomplete ablation of the lesion leaving poor aesthetic results. To remove the lesions totally and to prevent recurrence needs "surgical excision in combination with one or more of the other modalities of treatment"[2-7]. It is also true that surgical excision with tension free repair (a prerequisite against recurrence) is not possible in all cases. Hence intralesional steroids remains only available treatment for such cases.

MATERIAL AND METHODS

The study was carried out on 46 patients admitted to the plastic surgery unit of NGMC between January 2013 to March 2017. These 46 patients with keloid, location wise distribution was external ear -24, anterior chest wall -15 and skin over the deltoid region -7. The patients were divided into group (A) and group (B). Group A consisting of keloid on ear (total 24) were subjected to complete excision of keloid and were given triamcinolone injection locally at the margin of excision intra operatively after suture and also in the post-operative period as and when required. Patients with keloid over chest wall and deltoid region were not operated because unlike ear a tension free repair after operation was not possible in the chest wall or deltoid which is an essential prerequisite of keloid surgery (if recurrence of keloid is to be prevented). The diabetic patients were excluded from the study.

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Group A (Keloid on the external ear)
Surgical excision + inj. Triamcinolone (40mg/2cc) at the margin of the suture. The patients underwent excision of keloid using keloid fillet flap and intra-lesional steroid was injected into margins of suture intra-operatively. Steroid used was triamcinolone acetonide 20 mg/cc, diluted in ratios with equal quantity of 2% lignocaine. Special emphasis were on achieving a tension-free closure, accurate coaptation of skin edges, adequate haemostasis, atraumatic handling of tissues and asepsis. A pressure dressing was applied at the end of surgery for 48 hours. Suture removal was done on the 14th day. Intralesional triamcinolone was reserved for those who showed clinical evidence of recurrence during the follow-up and had three injections at monthly intervals. Two cases of this group needed injection as they showed early sign of recurrence. Follow-up was at monthly intervals for three visits followed by quarterly visits until the end of the 1st year and biannual visits until the end of the 2nd year. All cases were followed up for 2 years.

Group B
Consisted of 22 patients with keloids. 15 of them had on the anterior chest wall and 7 on the deltoid region. All these cases were treated with Intralesional triamcinolone: Triamcinolone 40 mg/2cc was given intralesionally at the interval of 1 month from 1st visit to 4th monthly visits. They were not subjected to excision as a tension free repair was considered not possible.

RESULTS
46 patients with keloid were included in the study. Group A patient which had keloid on ear (following piercing of ear lobule) had complete excision of the keloid with tension free repair. They showed uneventful post operative period except 2(8.33%) patients where there was evidence of early recurrence. Out of these two, one had mild infection (redness after removal of stiches). The case with infection was treated with oral cephelexim (5 days) and local betadine application. After the infection settled, this patient received two local injections of triamcinolone 40mg at monthly interval. The keloid disappeared. Another without infection also received three injections of triamcinolone at monthly interval. The keloid disappeared in this case as well. There was no evidence of depigmentation or atrophy of skin in any case.

Group B: consisted of 22 patients. The location of keloid was on anterior chest wall (15) and over the deltoid region (7). They received intralesional triamcinolone at monthly interval, a total of 5 injection. All case showed disappearance of the keloid but all of them showed depigmentation of skin and atrophy of the skin following injection. However after the lapse of a year, local pigmentation and atrophy at the injection site improved and was more acceptable to the patients.

Age group (years)	Number of Patients	Percentage
15 - 20	7	15.21%
21 - 25	18	39.13%
26 - 303	12	26.08%
1 -35	9	19.56%

Table I: Age distribution

Anatomical site of Keloid	Number of Patients	Percentage
Ear	24	52.17%
Anterior Chest	15	32.60%
Deltoid Region	7	15.21%

Table II: Anatomical site of Keloid

Sex of the patients	Number of Patients	Percentage
Male	17	36.95%
Female	29	63.04%

Table III: Sex distribution

Group	Recurrence	Infection	Depigmentation and Atrophy of dermis
Group A	2(8.33%)	1(2.171%)	0
Group B	nil	nil	22(47.82%)

Table IV: Complications following treatment (at the 1st follow up)

DISCUSSION
24 patients in this series got their ears pierced after the age of ten years. This correlates well with the fact that the risk of keloids increases with each subsequent piercing, especially when the piercing is after ten years of age[9].

The average duration of lesions in this study is 3.8 years and most of them had tried intralesional triamcinolone unsuccessfully. Pressure therapy could not be applied as custom-made devices are not available here and patients are not interested in using them. So, the only way of treating them was surgery.

It has been proven beyond doubt that surgical excision alone has very high recurrence rates ranging from 50 to 100%[2,3,4,10]. But surgical excision is a sure and predictable way of removing

the lesion in toto but needs to be combined with other modalities. While treating keloids of exposed body parts like the ears, the aesthetic concern is as important as symptomatic improvement.

Meticulous surgical technique was used for all the cases in this series and care was taken against five proven factors (incomplete removal of keloid/scar tissue, haematoma, infection, tension on suture line and poor vascularity to wound edges) that cause undesirable scars[4,11].

One patient from Group A, who had postoperative infection showed recurrence[5] during the first postoperative visit, i.e., at about one month from the time of surgery. The other one patient who showed recurrence at the point of maximum tension over the suture line within one month of surgery and was promptly controlled by the local triamcinolone injection.

Recurrence in all above 2 patients was easily controlled with Intralesional triamcinolone.The message is very clear that after excision if there is tendency for keloid, it must be promptly treated by local steroids to prevent recurrence otherwise one is sure to be rewarded by a recurrence. Depigmentation and atrophy of dermis were seen with all patients as a result of Intralesional triamcinolone therapy[2,6]. Pigmentation as well as atrophy were restored over a few months without any treatment.

CONCLUSION

Surgical excision of keloids supplemented with Intralesional triamcinolone with regular clinical follow-up appear to be a very reliable method with very few complications[2-7]. Meticulous surgical technique observing precautions against undesired scarring (complete removal of Keloid/scar tissue, hemostasis, asepsis, tension-free suture line and good vascularity to wound edges) is more important than the length of the scar[11]. Clinically what is most difficult to achieve is a 'tension-free suture line' which is the culprit for recurrence. Achieving a tension-free suture line is relatively more feasible with ear keloids than with lesions over many other parts of the body[4].

What appears to be most important in preventing recurrence and a new finding with this study is 'regular clinical follow-up to encounter the early recurring lesion', which responds in 100% of the cases to Intralesional triamcinolone in 2-3 sittings at monthly intervals.

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ORIGINAL ARTICLE

Fine Needle Aspiration Cytology Findings of Breast Lesions in Western Region of Nepal

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ABSTRACT

Aim: Breast cancer is the most common neoplasm worldwide. Fine needle aspiration cytology is a minimally invasive, highly sensitive and cost effective investigation for breast lesions. The aim of our study was to evaluate the spectrum of fine needle aspiration cytology findings of breast lesions. **Material and Methods:** It was a prospective study conducted in the Department of Pathology during a 2 year period from Jun 2016- May 2018. A total of 284 patients with breast lesions were subjected to ultrasound guided fine needle aspiration cytology. **Result:** The age of presentation ranged from 13 years to 81 years with a mean age of 34.9±13.5 years. Most common age group for breast lesions was in 21-30 age groups (39.1%). Fibroadenoma was the most common benign pathology (26.8%) followed by fibrocystic changes (26.4%). Malignancy was noted in 16.2% with majority in the 41-50 age groups. Parasitic infection was noted in 2 cases. **Conclusion:** Screening of breast lesions is warranted resulting in significant reduction of morbidity and mortality related to breast cancers. Fine needle cytology plays a pivotal role in the overall management of breast lesions.

Key words: *Fine needle aspiration, breast, carcinoma, fibroadenoma*

INTRODUCTION

Breast lumps are common surgical problems in the day to day surgical practice. Although, imaging investigations can be helpful in characterizing most of the lesions, a cytological or pathological diagnosis is detrimental not only to confirm those findings but also in equivocal cases. Fine needle aspiration cytology (FNAC) has emerged as an investigation of choice in many institutions due to its relative minimally invasive nature. Furthermore, image guided FNAC has proved to result in greater diagnostic value thus decreasing the overall morbidity. In this study, we evaluated the spectrum of breast lesions commonly encountered on ultrasound guided FNAC, its efficacy and histopathological correlation.

MATERIAL AND METHOD

It was a prospective study performed on patients who had presented with breast lump and referred to the Department of Pathology for Fine needle aspiration cytology. FNAC was done under ultrasound guidance using General Electric Logiq P5 ultrasound with high frequency linear array transducer. FNAC was performed by a single pathologist using a 24 Gauze needle. Skin is properly disinfected, the needle is introduced into the lesion, and several passes are made through the lesion prior aspiration. After aspiration, the sample were spread on a glass slide and allowed to air dry following which staining was done with Giemsa stain. Staining with ZiehlNeelsen was performed on visualization of epithelioid granulomas, multinucleated giants cells and areas of necrosis for further confirmation of acid fast bacilli. In cases of inadequate sampling, a repeat aspiration was performed preferentially from another site. Unsatisfactory and suspicious smears were excluded from the study.

RESULT

The age of the patients ranged from 13 years to 81 years with a mean age of 34.9±13.5 years. Majority of the cases were females 272 (95.8%), with only 12 (4.2%) male patients. The most common age group for the lesions was in the 21-30 years age group (Table I).

Age group (years)	Frequency	Percentage %
11-20	20	7.0
21-30	111	39.1
31-40	81	28.5
41-50	43	15.1
51-60	11	3.9
61-70	9	3.2
71-80	7	2.5
81-90	2	0.7
Total	284	100%

Table I: Distribution of patients according to age group

Breast lump was the most common presenting complaint in 228 cases (80.3%). The clinical presentation of breast lesions is tabulated in Table II. Bilaterality of lesions was noted in 32 cases

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(11.3% cases). Benign lesions including miscellaneous constituted 83.8% of cases. Most common benign pathology was fibroadenoma (26.8% of cases) followed by fibrocystic changes (26.4%). There were 46 malignant lesions (16.2% of total cases). All malignant lesions were invasive ductal carcinoma except one case of medullary carcinoma and two cases of malignant phyllodes. The relative frequency of the cytological diagnosis is tabulated in Table III. Among male patients, gynaecomastia was the most common findings noted in 7 cases. There was no significance between cytological diagnosis and age group, with p value of 0.07.

Presenting Complaint	Frequency	Percentage %
Lump	228	80.3
Pain	6	2.1
Lump and pain	46	16.2
Nipple discharge	3	1.1
Breast enlargement	1	0.4
Total	284	100.0

Table II: Relative frequency of presenting complaints

Pathologies	Frequency	Percentage
Gynaecomastia	7	58.3
Carcinoma	3	25.0
Fibroadenoma	1	8.3
Miscellaneous	1	8.3
Total	12	100.0

Table IV: Relative frequency of male breast pathologies

DISCUSSION

Breast carcinoma is the most common malignancy in woman worldwide accounting for almost 25.1% of all cancers.[1]The international incidence of breast cancer is varied, with highest incidence in United States and Europe with lowest incidence in South Asia. Although the incidence of breast cancer is higher in developed countries, the mortality is greatest in developing countries due to less awareness and screening programs[1]. Breast cancer screening with triple assessment approach has significantly increased early detection of breast cancer and decreased overall morbidity and mortality[2]. Breast lump have a varied etiology and characterization of the lesions clinically has limitations warranting radiological and pathological correlation[3]. Fine needle aspiration cytology has been initial investigation of choice for evaluation of breast lumps with high degree of accuracy[4].

Although, core needle biopsy (CNB) is more sensitive than FNAC, the specificity is similar; thus in resource limited settings FNAC is the investigation of choice for evaluation of breast lesions.

	AGE GROUP (in years)									
DIAGNOSIS	11-20	21-30	31-40	41-50	51-60	61-70	71-80	81-90	**TOTAL**	**Percentage**
Fibroadenoma	13	30	25	7	1	0	0	0	76	26.8
Fibrocystic disease	3	33	29	8	0	2	0	0	75	26.4
Abscess	1	13	5	4	2	1	0	0	26	9.2
Malignant tumors	0	3	8	17	4	6	6	2	46	16.2
Hypertrophic fat / lipoma	0	2	5	0	3	0	0	0	10	3.5
Lactational adenoma	1	5	0	0	0	0	0	0	6	2.1
Galactocele	0	7	0	0	0	0	0	0	7	2.5
Accessory breast	0	3	2	0	0	0	0	0	5	1.8
Gynaecomastia	1	4	0	2	0	0	0	0	7	2.5
Granulomatous	0	4	2	0	0	0	0	0	6	2.1
Acute mastitis	1	2	1	0	0	0	0	0	4	1.4
Miscellaneous	0	2	2	2	1	0	1	0	8	2.8
Breast cyst	0	0	0	1	0	0	0	0	1	0.4
Cellular papillary lesion	0	0	0	2	0	0	0	0	2	0.7
Non-Neoplastic/ Normal	0	3	2	0	0	0	0	0	5	1.8

Note: Miscellaneous included - reactive intramammary lymph nodes, fibrocystic disease with atypia, apocrine metaplasia. Malignant lesions included invasive ductal carcinoma, medullary carcinoma and malignant phyllodes.

Table III: Cross-tabulation of different pathologies on FNAC at different age groups (non- gender specific)

Majority of our patients were in the 21-30 year age group (39.1%) which in keeping with other studies[5]. Multiple factors could be related to the increased incidence of the lesions at this age at our setup. Firstly, young females are recently more aware regarding breast disease; clinicians are concerned for a possible neoplastic entity. Moreover, early marriage and hormonal contraceptive use in this region could be another factor. This population mandates regular follow up albeit benign etiology. A limitation in our study however includes pertinent family history of patients were not sought in all cases.

Lump in isolation was the most common complaint for presentation (80.3%) followed by pain. Nipple discharge was present in only 3 cases (1.1 % of total cases). Left breast was involved in 52.1% of total cases. Laterality of lesions with preferentially left breast involvement have also been reported in other studies[6].

Majority of the FNAC diagnoses of breast lesions were benign with studies having a varied results ranging from 24 % to 77.5%[4]. Among the breast lesions in our study, benign pathologies outnumbered malignant pathologies constituting 82.3 % of the total caseswhich is higher than in keeping with studies by Panjvaniet al.[7]

Fibroadenomas are the most common benign breast tumors in women under 30 years of age and certain studies have demonstrated almost 68% of all breast lumps and 44% to 94 % of biopsied breast lesions[8]. Fibroadenoma is the most common benign pathology in our study with a total 76 cases among which 12 cases were cellular/complex and 4 cases were fibroadenoma with lactational changes. In our study, most common age group for fibroadenoma was noted in 21- 30 age group which is similar to other studies.

Fibrocystic changes were the second most common finding noted in 26.4% of the cases. Studies by Godwins et al have also reported similar findings[5]. Various studies have demonstrated possible etio-pathogenetic relationship between fibrocystic disease and breast cancer[9]. A genetic-environmental interactions has been postulated for breast carcinoma and individuals with fibrocystic disease with positive family history have increased susceptibility to environmental factors[10].

Malignant lesions which included carcinoma as well as malignant phyllodes was the third most common breast pathology group in our study accounting to 46 cases (16.2%) with majority cases in female. In India, the female to male breast cancer incidence ratio has been estimated at 64:3[11]. Majority of breast carcinomas are invasive ductal carcinoma approximately 70 – 80 % of all. In our study, all malignant cases were invasive ductal carcinoma with a rare sub type of medullary carcinoma and two cases of malignant phyllodes.

Male breast carcinoma (MBC) constitutes less than 1% of all breast cancer. There is a geographical variation in the incidence rates of breast carcinoma with maximum incidence in Israel[11]. Hormonal imbalance, radiation exposure, genetic susceptibility (mutation of the gene BRCA 2), alcoholism and family history of breast carcinoma are predisposing risk factors[12]. Most breast cancers are ductal with only 10% as carcinoma in situ[13]. There has been a dearth on the study of incidence of MBC in South Asia with few studies demonstrating variable incidence rate. Studies by Samantara et al have reported prevalence of male breast lump constituting 2.5% of all breast lumps and MBC accounted 1.34 % of all breast cancer which is in our study[14]. Majority of breast lesions in male are benign with gynaecomastia as the most common cause[11,12]. In our study, of all the male breast lesions; gynaecomastia constituted majority (58.3%) of the cases.

Parasitic infections are endemic in our regions; however their presentation as breast lump is rare with very few cases reported in the literature[15,16]. In our study, isolated breast cysticercosis and filariasis were noted in one case each. As imaging findings of parasitic infections of the breast are not well understood, either cases were clinically suspected of breast tumors, with imaging being inconclusive.

CONCLUSION

Our study demonstrated breast lesions at younger age group than other population. Identification of possible risk factors and screening at early age is warranted for decreasing morbidity and mortality. Besides, in endemic regions like ours; a high degree of suspicion for parasitic infection should be borne in mind and considered in the differential diagnosis of breast lumps. Fine needle aspiration cytology preferable image guided of breast lesion has significant yield in atypical and doubtful cases.

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ORIGINAL ARTICLE

Acute Perforated Appendicitis: Clinical Profile and Analysis of Risk Factors

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ABSTRACT

INTRODUCTION: The incidence of complicated acute appendicitis, including perforated or gangrenous appendicitis, remains considerably high (28-29%) despite the availability of modern imaging. Acute perforated appendicitis is associated with increased postoperative morbidity and mortality. The aim of the study was to analyze the clinico-pathological profile and outcomes for suspected perforated acute appendicitis and to determine the factors influencing the risk of perforated appendicitis. **MATERIAL AND METHODS:** This was a prospective observational study conducted at Nepalgunj Medical College and Teaching Hospital from November 2016 to August 2018. Patients with suspected appendicular perforation were included. The diagnosis was confirmed at laparotomy. History, physical findings, biochemical and radiological findings were noted. **RESULTS:** There were 74 patients. The maximum number of patients were in the age group of 0-20 and 21-40 years with a male dominance (M:F 1.9:1). The common presenting features were pain starting in right iliac fossa and becoming generalized with features of peritonitis. Majority presented late to the hospital with the mean duration of 6.35±2.46 days. 17 (22.97%) patients had deranged renal function test at presentation. All patients underwent laparotomy and appendicectomy. The commonest site of perforation was the tip of appendix (58.08%). 27 (52.94%) had generalized purulent peritonitis. All had features of acute appendicitis on histological examination. Of the 75 patients only 17 (22.97%) patients had fecolith. 21 (28.37%) had postoperative complications, commonest being surgical site infection (25.67%). Five (6.67%) patients died after surgery. The common cause of death was septic shock with multiorgan failure. Only one patient died due to myocardial infarction. The complications and mortality were common in those patients whose presentation was late i. e after 72 hours from the onset of symptoms, whose renal function was deranged, age > 60, and who had pyoperitoneum. **CONCLUSION**: Acute perforated appendix is not uncommon. Males are more common with younger people commonly getting affected. Delayed presentation, pyoperitoneum, age >60 are the common risk factors associated with morbidity and mortality.

Keywords*: Acute appendicitis, perforated appendicitis, delayed presentation, pyoperitoneum*

INTRODUCTION

Acute appendicitis is the most common cause of acute surgical abdomen and appendectomy for acute appendicitis is one of the most common abdominal surgeries performed by a general surgeon[1]. There are numerous studies on acute appendicitis, but still it is a clinical challenge and its etiology is not completely understood. Obstruction of the lumen due to fecoliths, hyperplasia of the lymphoid tissue or foreign bodies are proposed as the most common causes of acute appendicitis. The appendix becomes inflamed and edematous and its wall becomes ischemic and necrotic. If not identified timely and operated, the gangrenous appendix is perforated causing peritonitis[2]. The incidence of complicated acute appendicitis, including perforated or gangrenous appendicitis, remains considerably high (28-29%) despite the availability of modern imaging[3].

Appendicectomies in acute appendicitis are performed on an emergency basis to avoid the mortality due to complications such as perforation and peritonitis[4]. The mortality of appendicitis will increases up to 3.5- to 10-fold if the appendix is perforated[5]. It is still unknown that why appendix becomes perforated in some patients. Complications of a perforated appendicitis can be fetal. The fear of a perforated appendicitis has led the surgeons to accept the possibility of removal of an unaffected appendix so that even up to 30% negative appendectomy is acceptable[6].

The aim of the study was to analyze the clinico-pathological profile and outcomes in patients undergoing emergency appendectomies for suspected perforated acute appendicitis and to determine the factors influencing the risk of perforated appendicitis.

MATERIAL AND METHOD

This was a prospective observational study conducted in the department of surgery Nepalgunj Medical College and Teaching Hospital from November 2016 to August 2018. All patients with right iliac fossa pain and pain initially occurring at right iliac fossa (RIF) then becoming generalized were included. The diagnosis of perforated appendicitis was made depending on the history of pain starting at RIF and becoming either generalized to whole abdomen or in the right side of the abdomen and hypogastrium with the presence of signs like rigidity and rebound tenderness.

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The time interval between the onset of pain and arrival to the hospital was recorded. Detailed history was taken, examination done at admission. Complete blood count, renal function tests, electrolytes (sodium and potassium), urine analysis, urine pregnancy test in females were done. Radiological investigations like ultrasound of the abdomen and chest X–ray were also done. Presence of free fluid in the peritoneal cavity was taken as a positive finding suggesting appendicular perforation. All patients with suspected appendicular perforation underwent laparotomy with a midline incision and appendicectomy. The perforation was confirmed on laparotomy. The appendix was sent for histopathological examination (HPE).

RESULTS

97 patients underwent appendicectomy during the study period with suspected perforated appendicitis, out of them 74 had appendicular perforation at laparotomy. There were 49 (66.21%) males and 25 (33.78%) females with a male: female ratio of 1.9:1. Maximum patients (41.89%) were within the age range of 21 to 40. The presenting complaints were pain starting at RIF and becoming generalized to involve either the whole abdomen or right side of the abdomen with distension of abdomen. Time of presentation to the hospital after the onset of symptoms ranged between 3 to 10 days with the mean of 6.47±2.13 days. All 74 patients had pain initially located at RIF then becoming generalized. 56(75.67%) patients had generalized peritonitis and 18(24.32%) had peritonitis localized to the right side of the abdomen and hypogastrium. Of the 74 patients 17(22.97%) had deranged renal function test with a mean creatinine level of 3.29±2.56. Ultrasound abdomen was done in all patients among them 33(44.59%) had free peritoneal fluid, 41(55.40%) had free fluid in RIF and pelvis. Two (2.70%) patients had free air under the right hemidiaphragm.

Age	**Number of patients (%)**
0-21	21 (28.37%)
21-40	31 (41. 89%)
41-60	18 (24.32%)
>61	04 (5.40%)
Sex (M:F)	1.9:1
Clinical Presentation	
Time of presentation*	6.47±2.13 days
Generalized pain abdomen with peritonitis	56 (75.67%)
Pain right side of the abdomen with peritonitis	18 (24.32%)
Deranged RFT	17 (22.97%)
Creatinine level*	3.29±2.56

*values in mean with standard deviation

Table I: Demographics and clinical presentation

All 74 patients had perforated appendix. In 43(58.08%) patients the perforation was located at the tip, 9(12.16%) had in the middle and 22(29.72%) had at the base of the appendix. 51(68.91%) patients had presence of frank pus in the peritoneal cavity and among them 27(52.94%) had generalized purulent peritonitis.

The histopathological examination revealed acute appendicitis with periappendicitis in 33(44.59%) patients, 8(10.81%) patients had chronic appendicitis with reactive hyperplasia of lymph node, 1(17.56%) had acute suppurative appendicitis with periappendicitis, 17(22.9%) had gangrenous appendicitis, 2(2.70%) patients had high grade mucinous neoplasm and one (1.35%) had adenocarcinoma (table II). Patients with high grade mucinous neoplasm and adenocarcinoma underwent right hemicolectomy.

Histology	**Number of patients (%) (N=74)**
Acute appendicitis with periappendicitis	33 (44.59%)
Gangrenous appendicitis	17 (22.9%)
Acute suppurative appendicitis with periappendicitis	13 (17.56%)
Chronic appendicitis with reactive hyperplasia of lymph node	8 (10.81%)
High grade mucinous neoplasm	2 (2.70%)
Adenocarcinoma	1(1.35%)

Table II: Histopathological findings

21(28.37%) patients had postoperative complications. The most common complication was surgical site infection (SSI). One patient developed adhesive small bowel obstruction which needed relaparotomy. Five (6.67%) patients died after surgery. The common cause of death was septic shock with multiorgan failure. Only one patient died due to myocardial infarction (table III). The complications and mortality were common in those patients whose presentation was late i.e. after 72 hours from the onset of symptoms, whose renal function was deranged, age > 60, and who had pyoperitoneum.

Complications	**Number of patients (%)**
SSI	19 (25.67%)
Respiratory complications	12 (16.21%)
Postoperative ileus	9 (12.16%)
Intraabdominal collection	7 (9.45%)
Urinary tract infection	5 (6.75%)
Intestinal obstruction	1 (1.35%)

Table III: Postoperative complications

DISCUSSION

We evaluated 96 patients with suspected perforated appendicitis but among them in 74 patients perforation was confirmed at laparotomy. There was a male predominance and the common age group affected was between 21-40 years .The number of patients with perforated appendicitis who were below 20 years and above 60 were also not uncommon in our study. This findings were consistent with other studies.[7,8] Although no clear justification was presented for the high incidence of perforation in older adults and children, however, absence of clinical symptoms, existence of multiple differential diagnosis, lower levels of sensitivity to pain and presence of co-morbidities in older people, and inability to locate pain and shortness of the omentum in children are among the reasons for the delays in diagnosis and treatment of appendicitis in theses age group[7,8].

Perforated appendicitis was higher in males than in females. This is in contrast to a normal belief that several differential diagnoses in females might result in a delay in appendectomy. A study by Guss et al. reported that the mean delay was 477 and 709 min in males and females respectively. However, the rate of perforated appendicitis was significantly higher among males than females[9]. The rate of perforated appendicitis was about 23.67% in this study. This finding was similar to other studies which states that the incidence of appendicular perforation to be 28-29%[3]. One of the important factors of high incidence of appendicular perforation in our context seems to be delayed presentation.

The complication rate in our study was 28.37%, most common being SSI followed by respiratory problems. The higher rate of complications is likely due to the high number of patients presenting very late with pyoperitoneum and associated acute renal failure. Similar observations support the major cause of mortality being septic shock with multiorgan failure.

CONCLUSION

Our study showed that appendicular perforation is not uncommon and occurs at young age group with male preponderance. The common presentation was generalized pain abdomen and peritonitis. None of the investigations available can diagnose appendicular perforation preoperatively unlike other hollow viscous perforations. Appendicular perforation can be diagnosed only at laparotomy. Delayed presentation, age >60, deranged renal function test, pyoperitoneum are the risk factors for the postoperative complications and morbidity.

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Prophylactic Antibiotics in Elective Laparoscopic Cholecystectomy is it Necessary?

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ABSTRACT

Background: Elective laparoscopic cholecystectomy (LC) has a low risk for Surgical Site Infection (SSI). In spite many surgeons still use prophylactic antibiotics. The aim of this study was to find out the need of prophylactic antibiotics in elective LC. **Method:** This study was carried out from 2017 June to 2018 August in the Department of Surgery Nepalgunj Medical College and Teaching Hospital Kohalpur (NGMC). Patients were placed into two groups. Group A received a single dose of prophylactic antibiotic and group B patients did not receive any prophylactic antibiotic. In both groups the SSI were recorded and compared. **Results:** Overall SSI was 5 (3.33%) among 150. In group A 2 (2.66%) patients had SSI and in group B 3 (4%) had SSI. Using or not using prophylactic antibiotics did not correlate with SSI (p= .154). **Conclusions:** Prophylactic antibiotic is not recommended in elective LC. Prophylactic antibiotic does not reduce the rate of SSI.

Key words: *Elective laparoscopic cholecystectomy, prophylactic antibiotic, surgical site infection*

INTRODUCTION

Surgical Site Infection (SSI) is one of the commonest complications faced by surgeons. Prevention of SSI is necessary to improve the results of surgery. One of the methods to reduce SSI is prophylactic antibiotics. Laparoscopic cholecystectomy (LC) is the standard of treatment for symptomatic cholelithiasis and has a very low incidence of SSI as compared with open cholecystectomy (OC)[1-4]. Despite of lot of evidences supporting a very low risk of SSI after Laparoscopic cholecystectomy, there is still a controversy and many surgeons still use prophylactic antibiotics in elective Laparoscopic cholecystectomy.

The United States centre for disease control and prevention recommends the single dose use of Cefazolin for patients undergoing biliary tract surgery like open cholecystectomy to reduce SSI[5,6]. The minimum manipulation and the small incision in Laparoscopic cholecystectomy reduce the chance of wound contamination. Unnecessary use of antibiotics increases the cost as well as the risk of emergence of multidrug resistance. Hence to eliminate the controversy around the use of antibiotic prophylaxis in elective Laparoscopic cholecystectomy, this study was conducted.

MATERIAL AND METHODS

This prospective trial was carried out from 2017 June to 2018 August in the department of Surgery NGMC. Institutional Research Ethics Committee approval was obtained. Informed written consent was taken from all Patients included in the study. Patients with symptomatic cholelithiasis were included. Patients with moderate and severe acute cholecystitis according to Tokyo guidelines[7] (TG13) were excluded. Similarly, Patients with Choledoctolithiasis, pancreatitis, Cholangitis were also excluded. Patients with diabetes mellitus (DM), patients requiring conversion to open cholecystectomy**,** those who are older than 60 years and those who took antibiotics in the 7 days prior to surgery were also excluded.

Patients were randomized in two groups by lottery. Group A patients received prophylactic antibiotic (Injection Ceftrixone 1 gm) at the time of induction. Group B patients didn't receive any antibiotics. The skin was disinfected with 5% povidone iodine. Laparoscopic cholecystectomy was performed by using 4 ports in all patients. Pneumoperitoneum created by closed technique through a supraumbilical incision and other three ports were inserted under vision. The gall bladder was extracted through the epigastric port. In case of rupture of gall bladder and spillage of bile, local peritoneal lavage was done. A drain was placed in the hepatorenal pouch whenever required but these patients were not excluded. The postoperative course was monitored and any incidence such as fever, surgical site infection (SSI) and bile leak was recorded. Culture was sent in case of wound discharge. After discharge the patients were followed up at 1 week and at 1 month.

Statistical analysis

Data were analyzed using SPSS 20.0. Statistical analyses were performed using chi-square test and Fisher's exact test. A P-value <0.05 was considered as significant.

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RESULTS

184 Laparoscopic cholecystectomy were performed during the study period. 34 cases were excluded. The causes of exclusion were age >60, conversion to open, DM and incidental finding of empyema. In these case antibiotics were given. 150 cases were included with 75 patients in each group.

The mean age of the patients in group A (antibiotic) was 37.26±11.70 with an age ranging between 4 and 59 and there were 64(85.3%) females and 11(14.66%) males. Similarly the mean age of the patients in group B (no antibiotic) was 36.70±9.62 with an age ranging between 17 and 56 and there were 67 (89.33%) females and 8 (10.66%) males. There was no difference in characteristics of patients and surgical outcomes between two groups (Table I).

Overall SSI was 5 (3.33%). In group A 2 (2.66%) patients had SSI and in group B 3 (4%) had SSI. Using or not using prophylactic antibiotics did not correlate with SSI (p= .154). One patient had epigastric port site SSI rest all had umbilical port SSI. All SSI were superficial. Out of 2 patients with SSI in group A, both had bile spillage, but in group B among three patients with SSI none had bile spillage. There was no correlation between bile spillage and SSI (p= .429). Among 5 patients with SSI only one patient wound culture grew klebsiella, remaining were sterile.

The duration of surgery and length of hospital stay were also similar between two groups. No other systemic infection like sepsis, pneumonia, or urinary tract infection was found in either group. There was no mortality.

DISCUSSION

Overall SSI in the study was 3.33%. In group A (antibiotic) the SSI was 2.26% and group B (no antibiotic) SSI was 4%. The slightly higher SSI in those who did not receive antibiotic was statistically not significant (p= .154). This observation was similar to other studies[2,3,8,9,10].

In this study spillage of bile occurred in 42.66% in group A and 28% in group B. The incidence of spillage of Bile and stone both were 2.66% in group A and 8% in group B. The spillage of bile and stone did not lead to higher infection. In fact, in group B, none of the three patients having SSI had bile spillage. We did not find any significant correlation between the bile spillage and SSI (p= .429). Many studies have shown that SSI are not related to rupture of gallbladder, spillage of stone or bile[8,11]. Mechanical tissue damage and skin flora contamination are important causes of SSI[12]. The cause of SSI in this study may have been incomplete hemostasis, inadequate skin preparation or aseptic manipulation rather than the use or not use of antibiotics.

Other risk factors contributing to SSI such as age >60, DM, jaundice, acute cholecystitis, cholangitis are suggested by some authers[8, 13, 14] but we excluded such factors to maintain the uniformity of clinical characteristics as well as surgical outcomes. There were no differences in duration of surgery and length of hospital stay in two groups (Table I). We didn't include the patients with acute cholecystitis, empyema, age >60, DM. So the finding of our study cannot be generalized. Perhaps this requires a separate study including only this high risk population.

CONCLUSIONS

The rate of SSI is low in elective LC. The use of prophylactic antibiotic didn't correlate with SSI. Therefore the use of prophylactic antibiotic is not recommended in elective LC.

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Characteristics	Group A (n=75)	Group B (n=75)	p value
Sex (M/F)	11/64	8/67	
Mean age	37.26±11.70*	36.70±9.62*	
Gallbladder stone	75	75	
Rupture of gallbladder (%)	34 (45.33%)	27(36%)	
Bile spillage (%)	32 (42.66%)	21(28%)	.429
Bile and stone spillage (%)	2 (2.66%)	6 (8%)	
Subhepatic drain (%)	11 (14.66%)	19 (25.33%)	
Duration of operation (min)	71.6±21.10*	70.64±21.88*	
Conversions (%)	5 (6.66%)	3 (4%)	
Length of stay (days)	3.21±0.86*	3.42±0.67*	.263
SSI (%)	2 (2.66%)	3 (4%)	.154

* Data given as mean ±SD

Table I: Characteristics of patients and outcomes

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ORIGINAL ARTICLE

Spectrum of Parotid Pathologies on Neck Ultrasound in A Tertiary Hospital of Western Nepal

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ABSTRACT

Objective: To investigate the spectrum of parotid pathologies on neck ultrasound and correlation with pathological findings. **Materials and methods:** A total of 41 patients with parotid swelling who had undergone neck ultrasound were included in this prospective study. Patients with history of previous neck ultrasound, recent surgery, bleeding diathesis or trauma, equivocal pathological findings were excluded from the study between June 2016 to May 2018. On-site fine needle aspiration cytology was performed by a pathologist who was blinded to the ultrasound findings. **Results:** Among the 41 patients, 41.5 % were males and 58.5 % were females with age ranging from 1 to 76 years with a mean age of 37.31 years. Ultrasound was able to categorize lesions into benign and malignant with a sensitivity of 97.3 %, specificity of 50%. Pleomorphic adenoma was the most common pathology (46.3 %) followed by inflammatory conditions. Mucoepidermoid carcinoma was the most common malignant tumor constituting 7.3 % of the total cases. **Conclusion:**High resolution ultrasound can categorize parotid lesions with high degree of confidence in the hands of skilled radiologist. In equivocal cases, onsite fine needle aspiration by cytopathologist increases the diagnostic yield.

Key words: *Mucoepidermoid carcinoma, parotid, pleomorphic adenoma*

INTRODUCTION

Parotid swelling is a common presenting symptom of patients presenting to the Oto-rhinolaryngology department with varying etiologies posing clinical diagnostic dilemma. Parotid pathologies can range from inflammatory, infective, and benign to malignant cause[1]. High resolution ultrasound has played a key role in the identification of the lesions, perilesional important structures, characterization of the various pathologies thus avoiding inadvertent management. In our study, we reviewed the ultrasound characterized benign and malignant parotid pathologies and correlated with the pathological findings.

MATERIALS AND METHODS

A prospective study was conducted in the Department of Radiology at Nepalgunj Medical College and Teaching Hospital, Kohalpur, Banke for a period of two years from June 2016 to May 2018. All patients with parotid swelling who had presented to the radiology department for high resolution ultrasound scan were enrolled in the study that fulfilled all inclusion and exclusion criteria. All ultrasound scans were performed on GE Logic P6 ultrasound machine with high frequency transducer (7.5 – 11 Mhz). With large lesions and for evaluation of the deep lobe pathologies, curvilinear low-frequency transducers were used. Patients were placed in supine position with head tilted on opposite sides for evaluation of the parotid glands. Superficial, deep lobes of the gland as well as the Stenson's duct were assessed in cross-sections. Lesions were noted for various parameters as size, location, margins, shape, echogenicity, echotexture and internal vascularity for characterizing the lesions as benign and malignant and when possibly suggest the possible diagnosis. Presence of accessory parotid glands was also noted. Regional lymph nodes were also scanned. Intraparotid lymph nodes which were oval in shape with short axis < 5mm, non-displaced, well preserved hyperechoic hilum were considered normal.

On site, FNAC of the lesion was performed by a single pathologist who had knowledge of only the location of the lesion and was blinded to the suggested radiological diagnosis. Pathological impressions with benign diagnosis were then correlated with the ultrasound findings.

Patients with history of previous neck ultrasound, recent surgery, bleeding diathesis or trauma, equivocal pathological findings were excluded from the study. All data were collected and statistical analysis was done in SPSS 16.0 (Chicago, Illinois).

RESULTS

A total of 41 cases fulfilled all the inclusion and exclusion criteria. The age of the patient ranged from 1 year to 76 years with a mean age of 37.3 years with a standard deviation of 14.85 years. Majority of the cases were in the 30-40 years age group. There was female predilection with a female to male

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SN	Age in years	Sex	Laterality	Ultrasound findings	Pathological diagnosis
1	34	Male	Right	Acinic Cell Carcinoma	Pleomorphic Adenoma
2	36	Female	Right	Pleomorphic Adenoma	Mucoepidermoid Carcinoma
3	36	Male	Left	Acute Sialedenitis	Acute Sialedenitis
4	36	Male	Right	Chronic Sialedenitis	Chronic Sialedenitis
5	13	Male	Bilateral	Acute Sialedenitis	Acute Sialedenitis
6	76	Female	Right	Benign Cystic Lesion	Benign Cystic Lesion
7	30	Female	Right	Benign Cystic Lesion	Branchial Cleft Cyst
8	36	Female	Left	Benign Cystic Lesion	Branchial Cleft Cyst
9	43	Female	Right	Carcinoma Ex Pleomorphic Adenoma	Carcinoma Ex Pleomorphic Adenoma
10	52	Female	Left	Chronic Sialedenitis	Chronic Sialedenitis
11	7	Male	Right	Chronic Sialedenitis	Chronic Sialedenitis
12	45	Female	Right	Benign Cystic Lesion	Lymphoepithelial Cyst
13	10	Male	Right	Mucocele	Mucocele
14	57	Male	Right	Mucocele	Mucocele
15	39	Female	Left	Mucoepidermoid Carcinoma	Mucoepidermoid Carcinoma
16	46	Male	Right	Pleomorphic Adenoma	Mucoepidermoid Carcinoma
17	37	Female	Right	Parotid Abscess	Parotid Abscess
18	57	Male	Right	Parotid Abscess	Parotid Abscess
19	19	Male	Left	Parotid Lipoma	Parotid Lipoma
20	19	Male	Right	Pleomorphic Adenoma	Pleomorphic Adenoma
21	24	Female	Left	Pleomorphic Adenoma	Pleomorphic Adenoma
22	28	Female	Right	Pleomorphic Adenoma	Pleomorphic Adenoma
23	30	Female	Right	Pleomorphic Adenoma	Pleomorphic Adenoma
24	32	Male	Right	Pleomorphic Adenoma	Pleomorphic Adenoma
25	32	Female	Right	Pleomorphic Adenoma	Pleomorphic Adenoma
26	32	Female	Right	Pleomorphic Adenoma	Pleomorphic Adenoma
27	35	Male	Left	Pleomorphic Adenoma	Pleomorphic Adenoma
28	35	Female	Right	Pleomorphic Adenoma	Pleomorphic Adenoma
29	35	Female	Right	Pleomorphic Adenoma	Pleomorphic Adenoma
30	37	Male	Left	Pleomorphic Adenoma	Pleomorphic Adenoma
31	42	Female	Left	Pleomorphic Adenoma	Pleomorphic Adenoma
32	45	Female	Left	Pleomorphic Adenoma	Pleomorphic Adenoma
33	45	Female	Right	Pleomorphic Adenoma	Pleomorphic Adenoma
34	46	Female	Left	Pleomorphic Adenoma	Pleomorphic Adenoma
35	52	Male	Left	Pleomorphic Adenoma	Pleomorphic Adenoma
36	60	Male	Right	Pleomorphic Adenoma	Pleomorphic Adenoma
37	45	Female	Left	Warthin Tumor	Pleomorphic Adenoma
38	47	Female	Right	Reactive Lymphadenitis	Reactive Lymphadenitis
39	45	Female	Left	Sialedenosis	Sialedenosis
40	1	Male	Right	Hemangioma	Hemangioma
41	54	Female	Right	Pleomorphic Adenoma	Warthin Tumor

Table I: Age, gender, laterality, ultrasound findings and pathological diagnosis of parotid lesions

ratio of 1.4:1. Bilateral lesions were noted in only one case (2.4%).The most common pathology was pleomorphic adenoma which constituted 19 of the 41 cases (46.3% of the total cases). Mucoepidermoid carcinoma constituted 7.3 % of total cases. Ultrasound was able to confidently diagnose benign parotid pathologies in 36 cases (87.8%). 2 cases which were labeled as benign on ultrasound were malignant on pathology. Sensitivity, specificity, accuracy are tabulated in table II.

		Pathological Diagnosis		
		Benign	Malignant	
Ultrasound findings	Benign	36	2	Total=41
	Malignant	1	2	cases
Sensitivity 97.3 %, Specificity 50.0%, PPV (94.74%), NPV 66.67%, Accuracy 92.68% (at 95% Confidence interval)				

Table II: Demonstrating the sensitivity, specificity of ultrasound in characterizing benign and malignant parotid pathologies

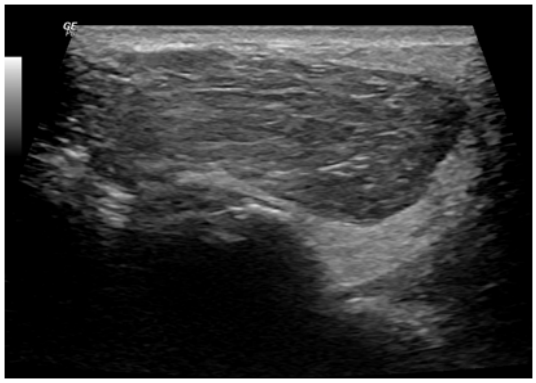

Figure 1: Ultrasound scan of the left parotid in a 19 year old male with left parotid swelling shows a well-definedhypoechoic lesion with multiple echogenic striations which was considered diagnosed as lipoma and confirmed on cytology.

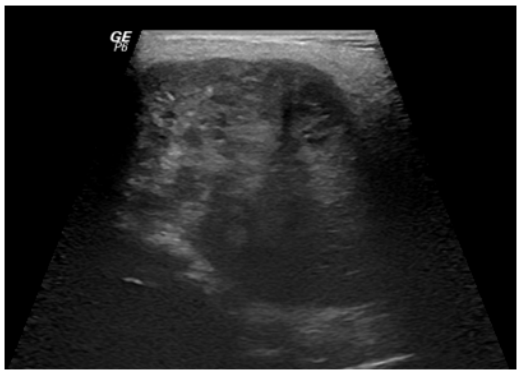

Figure 2: Ultrasound scan of the right parotid gland on a 36 year old female, shows a heterogeneous lesion with few cystic spaces which was considered pleomorphic adenoma but proved mucoepidermoid carcinoma on pathology.

DISCUSSION

Salivary gland pathologies are commonly encountered clinical problems in the Oto-rhinolaryngology[1].Clinical discretion of benign and malignant pathologies is often a clinical challenge. High frequency ultrasound has proved to have a pivotal role in the evaluation of neck lesions including parotid glands[2]. Ultrasound is a simple, inexpensive and widely available imaging tool for the evaluation of parotid lesions and many studies have described grayscale and Doppler criteria's that help in characterizing lesions into benign and malignant with confidence[1,3,4]. Recently, sonoelastography and acoustic radiation force impulse imaging have further increased the diagnostic value[5].

In our study, majority of the cases were noted in the 30-40 age groups which is in keeping with previous studies[6]. Sensitivity and specificity of ultrasound in characterizing lesions into benign and malignant was 97.3% and 50%. Studies by Wu et al have demonstrated a sensitivity and specificity of 38.9% and 90.1% which is different to our study[3]. The accuracy to differentiate benign and malignant pathologies was 96% in a study by Bialek et al whereas in our study was 92.68%[7].

Certain studies have demonstrated inflammatory conditions as the most common parotid gland pathology[8]. In our study, acute, chronic and acute on chronic sialedenitis were encountered in only 5 cases. A major cause of this difference could be related to the fact that those entities usually subsides with initial treatment thus a reluctance from the treating doctors for ultrasound.

Pleomorphic adenoma is the most common benign parotid pathology. In our study, 19 of the total cases (46.3%) were diagnosed as pleomorphic adenoma. Certain studies have demonstrated pleomorphic adenomas constituting 45.7% of all tumors which is in keeping with our study.[9] Pleomorphic adenoma are typically hypoechoic, well defined, lobulated contour are certain definite ultrasound characteristics. In our study, pleomorphic adenomas were correctly diagnosed on ultrasound. Certain features such as intratumoral necrosis within pleomorphic adenoma poses diagnostic challenges[10]. Pleomorphic adenomas were wrongly diagnosed as Warthin's tumor in one case and as acinic cell carcinoma in another case.

Warthin's tumor is considered as second most common benign tumor compromising 4-10% of all parotid tumors was seen in only one case in our study. This difference could be related to geographic variations as in other previous studies[11].

Mucoepidermoid carcinoma is the most common carcinoma of the parotid gland. Radiological findings of mucoepidermoid carcinoma are not specific and can mimic benign mixed tumors. Although, malignant tumors are usually irregular in shape, and heterogeneous in echogenicity with increased

vascularity; mucoepidermoid carcinoma can behypoechoic and well defined on ultrasound. Cystic changes in pleomorphic adenomas can pose diagnostic dilemma as in various study[12]. In our study, two cases considered as pleomorphic adenomas with cystic changes on ultrasound were later confirmed as mucoepidermoid carcinoma on pathology.

Parotid lipoma is a rare pathology encountered on ultrasound for parotid masses. In our study, we found only one case of parotid lipoma which was seen as a hypoechoic lesion with multiple linear striations. Although, small sample size is one of the limit of our study; this study still depicts the relative frequency of the various pathologies, ultrasound characterization of lesions which helps in orderly management of cases avoiding unnecessary interventions that increases morbidity.

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ORIGINAL ARTICLE

Outcome of Dual 90-90 Plating in Intercondylar Fractures of Distal Humerus in Adults

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ABSTRACT

Background: Intercondylar fracture of distal humerus are very difficult to manage. It needs proper anatomic reconstruction and rigid fixation. **Aims and Objectives of study:** Evaluation of outcome of dual bicolumnar 90-90 plating of AO type 13C fractures of distal humerus in adult. **Material and method:** In a prospective hospital based study on 16 patients with a mean age of 33.37 years ± SD 8.30, who presented with intercondylar fracture of distal humerus were studied between July 2015 to December 2017. All patients were graded according to AO classification. Out of 16 patients 5 were in 13C1, 6 were in 13C2 and 5 were in 13C3 subgroup. All patients underwent open reduction through Chevron olecranon osteotomy and fixation was done with dual plating in 90-90 fashion i.e.; 3.5 reconstruction plate posteriorly and 1/3 tubular plate from medial border. We used the Mayo elbow performance score system for evaluating our results. **Results:** The mean follow up period was 9.38 months. All fractures healed uneventfully. Two of five patients with 13C3 fractures and two of six patients with 13C2 fractures has flexion deformity of less than 30*. Average range of motion was 95*(range 60*-130*). The Mayo elbow performance score was excellent in 7, good in 7 and fair in 2 patients. **Conclusion:** Dual 90-90 plating technique through Chevron olecranon osteotomy is a good method for intercondylar reconstruction with rigid fixation like AO 13C fractures.

Key words: *Chevron olecranon osteototomy, dual plating, intercondylar fracture, mayo elbow performance score*

INTRODUCTION

Intercondylar fracture of distal humerus in adult is one of the most difficult fractures to treat due to its complex structure[1]. Proper anatomic reconstruction and rigid fixation are the basic prerequisites for good clinical outcome and minimizes the complication such as nonunion, malunion, decreased range of motion and heterotrophic ossification. The incidences of distal humeral fractures in adult represent 5.7 per 100,000 persons per year. They constitute 30% of humerus fractures and 2% of all the fractures[2,3]. Open reduction and internal fixation with plates are to be applied on both the columns in AO type 13C fractures; however there is no standard protocol from which side the plates were to be placed[4].

MATERIAL AND METHODS

Ethical permission for the study was obtained from the Institutional review committee of Nepalgunj Medical College Teaching Hospital (NGMCTH), Kohalpur and from the patient party. This was prospective hospital based study carried out from July 2015-December 2017.The study subjects were total 16 adults ranging from 24-48 years.

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We have treated all patients with stable or unstable and communited closed intercondylar distal humerus fractures. All patients were followed up for 1 year. Among them 10 patients were male and 6 were female.

After clinical assessment of the fracture carried out by the orthopaedic surgeon, three views of x-ray of elbow were done including antero-posterior, oblique and lateral, followed by CT scan with three dimensional reconstruction images which illustrated fracture level, area and degree of comminution, articular incongruity and column involvement[5]. Fractures were graded according to AO classification. Out of 16 patients 5 were in 13C1 subgroup, 6 were in 13C2 and 5 were in 13C3 subgroup. Among them 3 patient developed impending compartment syndrome and 1 had subdural haematoma. The patients were operated as soon as they were fit. Patients with established compartment syndrome, open fractures, previously malunited fractures and neurovascular injuries were excluded from the study.

Surgical Technique

The patients were placed in lateral decubitus position. Tourniquet was applied and distal humerus was approached through Chevron osteotomy of olecranon. Ulnar nerve was isolated and protected. Dual plating were done in all cases. We used 3.5 mm reconstruction plate on lateral column posteriorly and 3.5 mm, 1/3 tubular plate on medial column medially in all the patients. Intraoperatively range of motion and stability of fracture fixation was assessed by doing flexion, extension, pronation and supination of elbow. Chevron olecranon osteotomy was fixed with K-wires and tension band wiring.

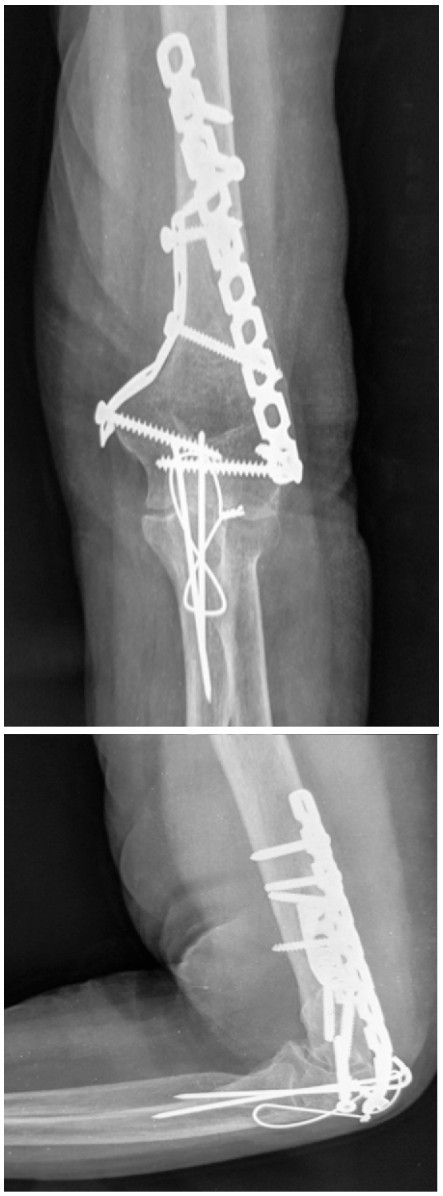


Figure.2: Post-operative imaging

Postoperatively all patients underwent long arm plaster of Paris slab for two weeks. All wounds healed primarily with no wound dehiscence. After two weeks sutures were removed and after one month of surgery slab were removed and patients were put on physiotherapy. Patients were followed up for 1-3 months and the results were assessed at twelve months using Mayo elbow Performance score system.

All the relevant information was entered into Microsoft word, statistical package for social services (SPSS) version 20, Microsoft excel and analyzed.

RESULT

There were total 16 patients, 10 male and 6 female ranging from 24 to 48 years enrolled in the study with an average mean age of 33.37 years ±SD 8.30.The mechanism of injury included fall from tree in 6 patients, fall from cliff in 3 patients and one patient was in fall from low level ground, all together the commonest cause of fracture (62.5%), followed by road traffic accidents (RTA) 37.5%.All of them were operated within first week of injury. The average hospital stay was 10.69 days after surgery. All 16 patients were reviewed at a mean follow up of 9.38 months (range 6-12 months) and were evaluated clinically and radiologically for one year at 1, 3, 6, 9 and 12 months. Maximum number of fracture union was achieved by 16 weeks with mean 33.93 days ± SD 4.58.

25% of patients had range of motion 10-120 degree. 50.1% of patients had range of motion in between 120-130 degree. Only one patient achieved maximum range of motion up 140 degree. Two of five patients with 13C3 fractures and two of six patients with 13C2 fracture had flexion deformity of less than 30 degree. Three patients had hardware prominence which was addressed by removing the tension band wiring at 6 months once union was achieved. The arc of motion (range 60-130)with mean arc of motion was 100.31 SD ±20.85 degrees. The functional outcome based on Mayo elbow performance scoring system (MEPS) had excellent result in 8(50%)patients whereas each 4(25%) had good and fair results respectively.

Among eight excellent outcome, four, three and one of them were belonged to 13C1, 13C2 and 13C3 AO fracture type respectively which was found to be statistically insignificant association (P = 0.363). Meanwhile, pre and post up

MEPS	AO classification			Total	p value
	13C1	13C2	13C3		
Excellent (>90)	4(80%)	3(50%)	1(20%)	8(50%)	0.363
Good (75-89)	0(0%)	2(33.3%)	2(40%)	4(25%)	
Fair (60-74)	1(20%)	1(16.7%)	2(40%)	4(25%)	
Poor (<60)	0(0%)	0(0%)	0(0%)	0(0%)	

Distribution of Mayo Elbow Performance Scoring System (MEPS) according to AO classification (N = 16)

complication had equal chance of having statistically significant association with this fracture and surgical procedure. (P = 0.002, i.e.< 0.05)

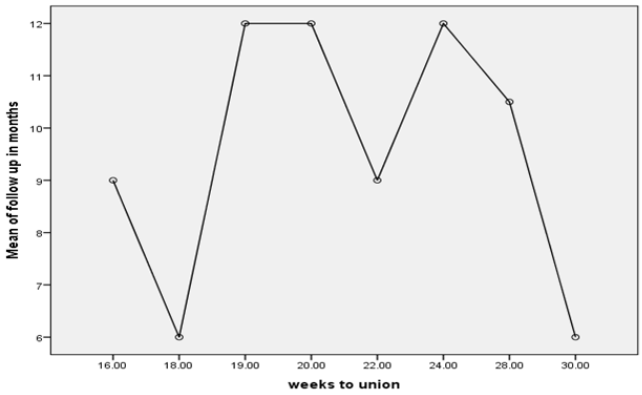
DISCUSSION

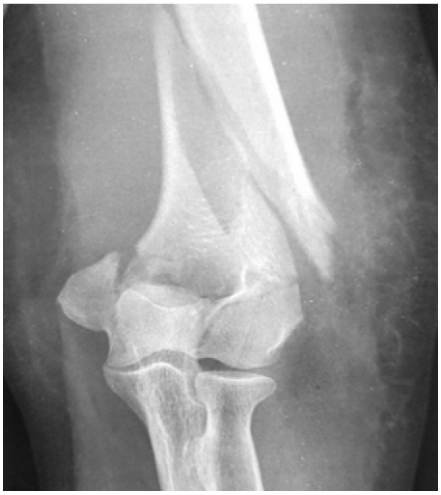
Intercondylar fracture of distal humerus in adults are difficult to manage due to complex anatomy of the elbow, small sized fracture fragments and the limited amount of sub-chondralbone.[6] Surgical management is the treatment of choice. The correct method of using accurate size and number of plates and screw can prevent complications like non-union, stiffness and pain. The main goals of operative treatment are restoration of joint anatomy and stable fragment fixation. After establishment of complete union of the fracture, early initiation of physical therapy is the pre requisite for regaining a functional activity[7,8,9].

Recently Kumar et al. showed that it is possible to obtain excellent outcome in distal one third of fracture using only single 4.5-mm LCP with two screw (4 cortices) keep in distal third fragment[10]. Atalar et al. used parallel plating in 21 communited distal humerus fractures. All fractures united but there were heterotrophic ossification in 33% and chondrolysis in one patient. Parallel plating implies greater periosteal stripping and elevation of triceps and brachioradialis[11]. According to our experience it is mandatory to use two platesof 3.5 mm in a perpendicular fashion because clinical and biomechanical results have shown that double plate osteosynthesis is the most feasible and stable method of osteosynthesis[12,13,14,15].

Sixty one patients with olecranon osteotomy for distal humerus fractures were followed up for six years by Coles CP et al.[16] They observed that all osteotomies united and found that the problem with olecranon osteotomy seems to be the prominence of implants. In our study three patients had hardware prominence which was addressed by removing the tension band wiring at 6 months once union was achieved.

Young patient attained good movement at the elbow joint with active physiotherapy. As age increases the range of motion decreases. In present study, 25% of patient had range of





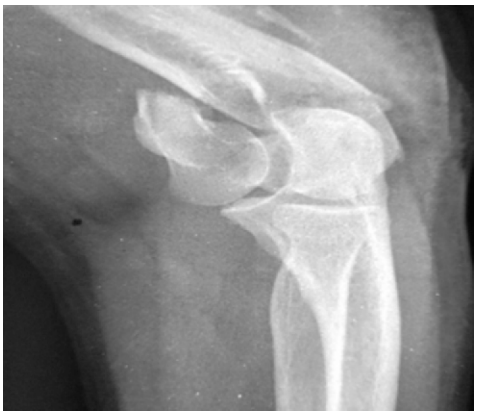


Figure 1: Pre-operative imaging

AO classification				
Variables	**C1**	**C2**	**C3**	**P value**
No. of patients	5	6	5	0.93
Average Weeks to union	21.4 ± 4.4	20.6 ± 4.1	20.8 ± 6	0.4
Average Range of motion	124 ± 11.4	20 ± 8.9	108 ± 8.3	0.35
Average AOM	106 ± 27	102.5 ± 17.8	92 ± 19.2	0.34
Average Follow up in months	9.6 ± 2.5	9.5 ± 2.2	9 ± 3	0.84
Average Duration of hospital stay	10.2 ± 6	11.5 ± 6.6	10.2 ± 2.3	0.13

Data stratification according to AO classification to compare mean variation

motion of 10-120 degree. Although age is not statistically relevant factor for functional activity, one patient had attained maximum range of motion 10 -140 degree at age of 44 years.

Limitations of the study

The sample size of the study and short follow up were the major limitation of the study which was conducted in a single hospital. Use of Computer tomography (CT) scan would have given exact and precise communition of fractures and its displacement. The study sample may not be representative of all the participants of similar age.

CONCLUSION

Dual 90-90 plating technique through Chevron olecranon osteotomy is also one of the good method for intercondylar reconstruction with rigid fixation like AO 13C fractures, however controversies regarding positioning of plates still exists and need larger prospective trials with long duration of follow up.

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ORIGINAL ARTICLE

Etiology of Maternal Mortality at Nepalgunj Medical College

BC D[1], Neupane GP[2], Rai M[3], Sharma A[4]

ABSTRACT

Introduction: Maternal mortality is an indicator of the quality of obstetric care in a community directly reflecting the utilization of health care services available. Maternal mortality has been recognised as a public health problem in the developing countries. **Aim and Objective:** To analyse the etiology of maternal deaths. **Material and Methods:** This descriptive study was conducted in the gynaecology and obstetrics department of the Nepalgunj Medical College Teaching Hospital Banke Nepal for a period of two years from august 2016-august 2018. All cases of maternal deaths in line with the definition of World Health Organization have been included. Data were collected and analyzed. **Results:** Twenty three (23) maternal deaths were identified during the study period. 69.56% of deaths occurred due to direct obstetric causes. Uncontrollable postpartum haemorrhage with 37.5 % was the leading cause of maternal death followed by eclampsia (18.75%) and sepsis (18.75%). Indirect causes were dominated by heart disease. Maximum 56.5% of deaths had occurred after 48 hours of admission. **Conclusions:** Haemorrhage, eclampsia and infections are the main causes of maternal deaths in our study. Majority of the deaths are preventable by proper antenatal care, counselling and asepsis practice, access to emergency medication, transfusion and anaesthetic and surgical teams in hospitals but also through the involvement of religious leaders, traditional and any community to better understand the population obstacles to reducing maternal mortality.

Key words: *Etiology, maternal mortality, prenatal care.*

INTRODUCTION

Maternal mortality is defined according to the World Health Organization (WHO) as the death of a woman while pregnant or of within 42 days after delivery, regardless of length or location, from any cause related to or aggravated by the pregnancy or its management but not from accidental or incidental causes[1].

Each year around 358,000 women die because of complications during pregnancy or childbirth and many more encounter serious problems in women. The vast majority of these problems occur in developing countries, where poverty increases sickness and reduces access to maternal care. These deaths occur within a context of gender-based, economic, political and cultural discrimination and neglect of women's right to equal status and equitable access to maternal health services[2].

The patterns of maternal mortality (MM) reveal large difference between and within countries 99 % of maternal deaths occur in developing countries and only 1 % of deaths in developed countries[3]. Traditionally and culturally, pregnancy is considered to be natural in Nepal. Thus, regular check-ups are thought to be unnecessary, particularly in rural areas, unless there are complications. It have been found that some groups of women in Nepal do not seek prenatal care (PC) because they think infants were more likely to die if they do so while these infants were in the womb. Such norms were found in other developing countries like Egypt, as well. Women's as well as their families' (especially husbands and mother-in-laws) perception about MHS were averting women from receiving prenatal care, thus, increasing risk of maternal mortality[2].

In Nepal many district hospitals are unable to cope with obstetric emergencies, drugs are not always readily available in the pharmacy and if available, the poor families are unable to buy. In addition, the health care staffs in the rural health posts are often reported as being unreliable, hostile towards local patients, and absent from the care centres; the major probable causes of not seeking medical care by rural women even when medical care was available. These factors also attribute maternal mortality[4].

Even above mentioned factors play important role, maternal mortality is high even at tertiary care hospital of Nepal. Hence to reduce maternal mortality it's very necessary to identify the cause of it. This study is proposed to analyse the etiology of maternal mortality in the tertiary care hospital of Nepalgunj medical college teaching hospital Kohalpur Banke Nepal.

MATERIAL AND METHOD

This descriptive study was conducted in the gynaecology and

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obstetrics department of the Nepalgunj Medical college teaching hospital Banke Nepal for a period of two years from August 2016 - August 2018. The study population consisted of any woman who died during pregnancy or within 42 days of delivery. All maternal deaths recorded and identified by the gynaecology and obstetrics department of Nepalgunj Medical College Teaching Hospital Kohalpur August 2016 until august 2018 and meeting the definition of the World Health Organization has been included in this study and woman brought dead was excluded. The literature review of the different registers by using a pre-established questionnaire was conducted to collect data and related socio-demographic variables, the concept of antenatal monitoring, gestational age, circumstances and time of occurrence of death. Prior authorization had been obtained from the Ethical Committee of the Institute.

RESULTS:

The Mean age of women who died because of pregnancy related cause was 24.35±5.882, minimum age was 16 years and maximum age was 40 year and maximum women were in the age range of 20-30 years (65.22%).

Analysis of socioeconomic status shows that most of the women 19 (82.60%) had lower socioeconomic status and most of the women 17(73.91%) had education up to primary level (Table I).

Age range	Number	Percentage
<20 years	5	21.74
20-30 years	15	65.22
30-40 years	3	13.04
Total	23	100

Table 1 : Maternal death by age group

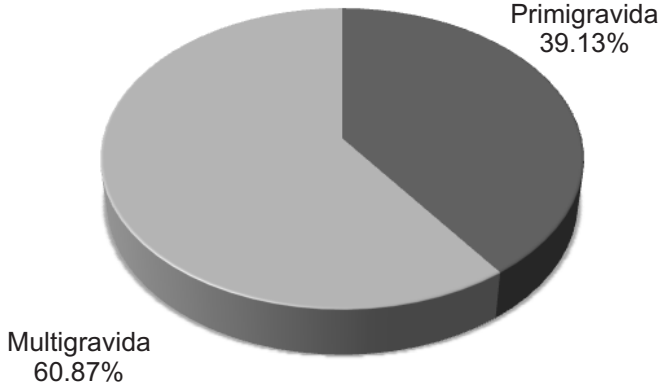

Figure 1 : Distribution according to gravida

It was seen that maternal death was more common in multigravidae women (60.87%), in comparison to primigravida (39.13%) Figure 1.

Duration	Number	Percentage
< 24 hours	6	26.1
24-48 hours	4	17.4
>48 hours	13	56.5
Total	23	100

Table II: Distribution by duration of hospitalization before death

It appears from Table II that 56.5% of deaths were occurring after 48 hours and 26.1% before 24 hours.

Cause of death	Number (n=23)	Percentage
Direct	16	69.56
Indirect	7	30.44
Total	23	100

Table III: Distribution of cases by cause of death

It was seen that maximum maternal mortality was because of direct obstetric causes (69.56%) Table III.

Direct causes of Death	Number	Percentage
PPH	6	37.5
Eclampsia	3	18.75
Sepsis	3	18.75
Preeclampsia	2	12.5
DIC	1	6.25
Ruptured uterus	1	6.25
Total	16	100

Table IV: Distribution of Direct causes of death

Postpartum haemorrhage was the most common (37.5%) direct cause of maternal mortality and heart failure was most common indirect cause. Table IV, V.

Indirect causes of death	Number	Percentage
Heart Failure	3	42.86
Anaemia	2	28.58
Renal failure	1	14.28
Diabetes	1	14.28
Total	7	100

Table V: Distribution of Indirect causes of death

DISCUSSION:

In our study more than half of the women who died because of pregnancy related causes were in the age range of 20-30 years. These results were similar to the study of Odette et al[5], Tebeu et al.[6], Pathak et al[7] and Patel et al[8]. These could be because of marrying early, consequently, conceiving early. Sending young girls off in marriage is a big relief in some cultures such as in the Terai plains of Nepal where dowry is compulsory and where the dowry amount goes higher as unmarried girls grow older. Intra-caste marriages are given a high priority in the Nepalese cultures and thus, parents may want to marry girls off sooner than later among such cultural groups for the fear of young unmarried daughters having affairs with men, especially with men from different castes. For Brahmin fathers, giving away a young daughter (Kanyadaan, literally meaning "virgin give-away") means opening up the door to heaven. All these social customs may be affecting maternal mortality indirectly. Other cause could be because of lack of education in women regarding marriage and self-dependency among women[4].

It was seen that maternal mortality was more common in multigravidae in comparison to primigravida this finding was similar to the study of Pathak et al[7], Patel et al[8]. This could be because of lack of awareness about contraceptive practice to avoid unwanted pregnancy, as a result more MTPs by local untrained personnel for economic reasons and non-availability of appropriate specialist advice in due time has contributed to increased mortalities[7,9].

In this study most of the women died after 48 hr of hospital admission this may be because of some life saving measures started by hospital staff even patient reach hospital in already moribund state , this reflects more life saving strategies should have to be adopted in hospital. Complications of postpartum period may not be recognised by the family members, or may recognise only when the situation has gone from bad to worse[4]. In this study it was seen that direct obstetric causes was the leading cause of death this was similar to study of Odette et.al[5],Patel et.al[8], Kodio et al[10], Praul et al[11] and Supratikto et. al[12]. Postpartum haemorrhage with 37.5% was the predominant cause; it remains a common and major cause also in African countries[10,11]. Hemorrhagic complications are sudden and unforeseeable and require a well-organized support; this involves material resources immediately accessible, competent and dynamic personnel; any delay or improvisation could contribute to a worsening of maternal prognosis. The haemorrhage is known for its rapid evolution towards a worsening (e.g. coagulopathy) and considerable blood loss requiring blood products[5]. Moreover, because haemorrhage was found to be the number one cause of maternal deaths in Nepal and because haemorrhage is related to anaemia, food rich in iron should be strongly recommended. Women do preserve different vegetables and foods for off season all over the country[14].

Hypertensive diseases were the second leading cause of maternal deaths in this study these finding were similar to study of Odette et.al.[5] and Patel et.al[8]. This study demonstrated increased odds of eclampsia in cases, which is in agreement with another study that found that the delay in diagnosis, triage, transport and treatment of eclampsia increases the risk of maternal death[13]. The management of severe hypertension requires organization of care and skill of the emergency team, specifically, a methodical treatment in the referral maternity[5]. Improving antenatal care and identification of high risk cases and improving awareness about danger signs reduces mortality[8].

In this study sepsis was another common direct cause of maternal mortality. Maternal death from sepsis is mainly attributed to an increase in invasive group A streptococcal infections. Susceptibility to infection may be complicated by modulation of maternal immune response and increasing rates of risk factors such as caesarean section and obesity. Failure to recognize severity of infection is a major universal risk factor. Standardized Surviving Sepsis Campaign (SSC) recommendations for management of severe maternal sepsis are continuing to be implemented worldwide[15].

On analysis of indirect cause heart disease, anaemia, diabetes was the common cause of maternal mortality. These findings were similar to study of Odette et al.[5], Lumbiganon et. al[16]. Women with underlying indirect causes had significantly increased risks of severe maternal and perinatal outcomes. The causes of maternal mortality in our study are diverse, but in the majority of preventable cases almost 100%. These findings provide strong support for prioritization of strategies that focus on professional intrapartum and postpartum care.

CONCLUSIONS:

Maternal mortality is a serious public health problem in Nepal and women have been dying of preventable reproductive causes. Haemorrhage, eclampsia and infections are the main causes of maternal deaths. The majority of these deaths occurred after 48 hours of admission. Unawareness of antenatal care and danger signs, the substandard care and delayed transfer of cases; which are avoidable were the three major contributing factors in these deaths.

Most of the deaths could have been avoided with good antenatal, intranatal and postnatal care, early referral, and quick, efficient and well equipped transport facilities, availability of adequate blood and blood components, and promotion of overall safe motherhood. The training should percolate among interns, house surgeons, residents and health guides too. Practice and knowledge of basic aseptic techniques is essential at all levels. Routine iron and folic acid supplementation is of proven value.

Analysis of every maternal death through maternal death audit should be carried out. Community participation is more necessary. Awareness of birth control measures, sex education in adolescence can reduce deaths due to septic abortion.

LIMITATIONS

Limitations of this study are small sample size and short duration of study. Because of the diversified cultural practices and social norms that may have direct or indirect effects on women's health and mortality, studies should be done separately for major ethnic groups of Nepal.

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ORIGINAL ARTICLE

Analysis of Intra-Abdominal Pressure in Obstructive and Perforative Lesions of Gastro-Intestinal Tract

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ABSTRACT

INTRODUCTION: Abdominal Compartment syndrome is an emerging problem in surgical patients with significant mortality reaching up to 100% in untreated patients. Intra abdominal hypertension (IAH) and abdominal compartment syndrome is common finding in traumatic and critically ill surgical patients. There are sporadic case reports in literature of intra abdominal hypertension & abdominal compartment syndrome in general surgical patients, particularly in obstructive and perforative diseases of gastrointestinal tract (GIT). This study was done to know the pattern of intra abdominal pressure (IAP) and effect of intra abdominal hypertension (IAH) in obstructive and perforative lesions of gastrointestinal tract. **Material and Method**: A total number of 145 cases were included between November 2016 to October 2017. These patients were from the department of Suregery, Nepalgunj Medical College, who underwent Surgery due to the Intestinal Obstruction or perforation. **RESULT:** There were total 145 cases. The incidence of IAH in patients with intestinal obstruction and perforation peritonitis at presentation was 68.27%. 65 (66.32%) out of 98 patients with perforation peritonitis had IAH and 34 (72.34%) with intestinal obstruction among 47 had IAH before surgery. There were 2.12% patients with abdominal compartment syndrome (ACS) in obstruction and 3.06% in perforation; ACS was highest amongst traumatic perforation population accounting for 13.33% of traumatic cases. There was statistically significant derangement (p-value<0.05) of organ function with raised IAP which showed marked improvement following surgery. Four patients died, all these patients had ACS at the time of presentation. **CONCLUSION:** IAH is a significant entity in obstructive and perforative lesions of GIT. ACS can occur in obstructive and perforative lesions of GIT with significant mortality.

Keywords: *Abdominal compartment syndrome, decompression, intra-abdominal hypertension, Intra-abdominal pressure*

INTRODUCTION

Intra abdominal pressure (IAP) and its effect on respiration and the abdominal contents has been the subject of scientific study since 19th century. Emerson[1] hypothesized reciprocal relationship between intra-thoracic pressure and IAP. Effect of raised IAP on organ function was of interest to early inventors. Bradley and Bradley[2] inferred decreased renal flow and plasma filtration rate seen with increased IAP. Emerson[1] demonstrated respiratory failure and death occurring with IAP above 27 – 46 mm of Hg in anaesthetized cats and guinea pigs. Baggot[3] recommended that tight abdominal closures and dressings be abandoned in favor of loose dressing placed on open abdomen, primarily to prevent entry of microbes in the year 1951. Many studies had showed direct relationship between raised IAP and several systemic symptoms (renal, cardiovascular, central nervous, Pulmonary etc.) which improved with abdominal decompression[4-5].

Despite these early contributions, clinical and patho-physiological significance of elevated IAP went largely unrecognized for quite a long time. Intra abdominal pressure (IAP) is the pressure concealed within the abdominal cavity. Normal IAP is 0-5 mm of Hg. However, in critically ill patients normal IAP is taken 5-7 mm of Hg. Intra abdominal hypertension is defined by a sustained or repeated pathologic elevation of IAP ≥ 12 mm of Hg[6].

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Abdominal compartment syndrome (ACS) is defined as sustained IAP>20 mm of Hg (with or without an Abdominal perfusion pressure (APP) <60 mm of Hg) that is associated with new organ dysfunction or failure. Primary ACS is a condition associated with injury or disease in the abdomino-pelvic region that frequently requires early surgical or interventional radiological intervention. Several methods (direct, urinary bladder, rectal, gastric, inferior venacava (IVC) etc.) were implicated for the measurement of intra abdominal pressure in initial days. Intra vesicle pressure measurement, either with transducer or without it, has now become the gold standard because of its minimal invasiveness and ease in use[7].

This study was conducted to identify the pattern of intra abdominal pressure in obstructive and perforative lesions of GIT and to study the effect of raised IAP in different organ or system.

MATERIALS AND METHODS

This was a prospective observational study conducted in Department of General Surgery, Nepalgunj medical college, Kohalpur teaching hospital, from November 2016 to October 2017. All patients diagnosed as a case of intestinal obstruction and perforation of GIT and undergone surgery were included. Patients who do not want to take part in the study, associated history of chronic diseases (Diabetes mellitus, significant cardiac, renal and pulmonary diseases), patients with lower urinary tract pathology where Foley catheterization was not possible, and pregnant patients were excluded. The abdominal pressure was indirectly determined by measuring urinary bladder pressure with a Foley's catheter. Patient was catheterized with a 16-guage Foley's catheter. The bladder was drained and then filled with 0.5 ml/kg (25 ml) of sterile saline through the Foley's catheter. The catheter was connected to a saline manometer. The symphysis pubis was the zero reference, and pressure was measured in centimeters of water at end-expiration.

A conversion factor of 1.36 was used to convert the pressure into millimeter of mercury (mm of Hg). Readings were taken

preoperatively and then postoperatively at 0, 6, 12, and 24 hours. The following parameters were noted blood pressure, pulse, respiratory rate, oxygen saturation, temperature, urine output, IAP, duration of surgery, preoperative findings, complications (burst abdomen, anastomotic leak, SSI) and mortality were recorded. Blood urea and serum creatinine were also noted. Intra abdominal hypertension was graded in following manner:

Grading of intra-abdominal hypertension

1. Grade I: 12–15 mm Hg;
2. Grade II: 16–20 mm Hg;
3. Grade III: 21–25 mm Hg; and
4. Grade IV: >25 mm Hg.

The term "abdominal compartment syndrome" was used when IAH was associated with at least one newly developed organ system dysfunction or isolated pressure measurement of > 35 mm of Hg. Organ system derangements were made out on the basis of following parameters:

Cardiovascular system

1. Blood pressure < 90 mm Hg systolic or
2. heart rate > 100/minute or
3. Both of the above.

Respiratory system

1. Respiratory rate > 20/minute or
2. SpO_2 < 90% or
3. Patient requiring ventilator support or
4. Any two or all of the above.

Renal

1. Blood urea > 40 mg% or
2. serum creatinine > 1.2 mg% or
3. urine output < 25 ml/hour or
4. Any two or all of the above.

Statistical analysis

The data were analyzed using Statistical Package for Social Sciences (SPSS) for Windows Version 20.

RESULT

A total of 145 patients were included in this study with the diagnosis of intestinal obstruction and perforation. Of these, 113 (77.93%) were male and 32 (22.06%) were female. The mean age was 37.78±18.04 (range 2-79) years with the most common age of presentation being 45 years. 47 (32.41%) patients had intestinal obstruction and 98 (67.58%) had intestinal perforations due to various causes (Figure 1).

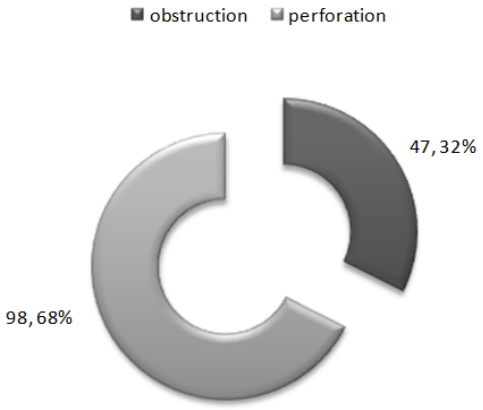

Figure 1: Incidence of Intestinal obstruction and perforation peritonitis

83 (84.69%) patients in this series were of spontaneous perforation; of these duodenal ulcers perforation (37.93%) was the commonest finding. 15 (15.30%) had traumatic perforations. IAH significantly varied between different diagnosis, accounting highest amongst traumatic perforation group followed by nontraumatic perforation group and small bowel obstruction. IAH at the time of admission with different causes of raised IAP is shown in Table I.

Diagnosis	IAH at Presentation		Total
	Present	Absent	
Appendicular perforation	17	2	19
Duodenal perforation	39	16	55
Gastric perforation	0	1	1
Gallbladder perforation	0	1	1
Ileal perforation	6	1	7
Traumatic jejunal perforation	1	12	13
Traumatic jejunal & ileal perforation	1	0	1
Traumatic jejunal & colonic perforation	1	0	1
Small lbowel obstruction	33	10	43
Large bowel obstruction	1	3	4
Total	99 (68.27%)	46 (31.72%)	145

Table I: IAH at presentation

There were 10 (23.25%) patients with small bowel obstruction and 3 (75%) patients with large bowel obstruction who had IAH at the time of presentation. In small bowel obstruction there was a case of ACS i.e. IAH grade IV (Figure 2).

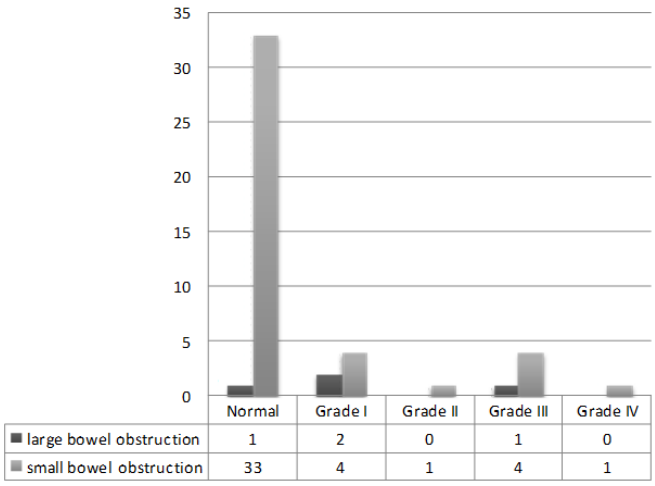

Figure 2: Preoperative grading of IAP in obstructive group (n=47)

At the time of admission there were 7 (46.46%) patients in traumatic perforation group and 23 (27.71%) in nontraumatic perforation with IAH respectively. There were 2 patients with ACS in traumatic perforation group and 1 patient with ACS in non traumatic group (Figure 3).

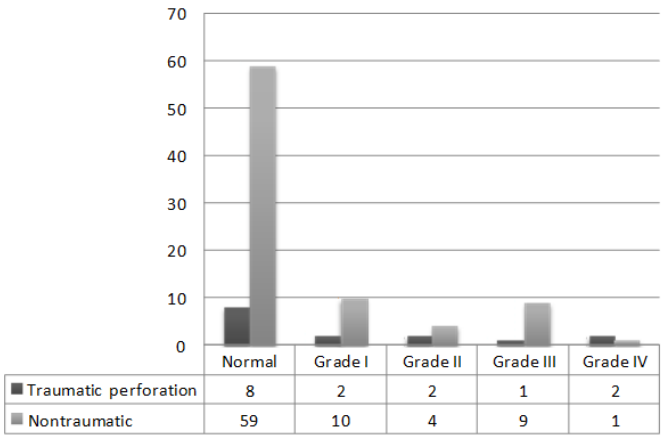

Figure 3: Preoperative grading of IAP in perforative grouph

Most of the patients showed decrease in grades of IAH after surgery. A raise in IAH was seen on 6th postoperative hour, which again decreased in subsequent measurements at 12 and 24 hours (Table II)

Category	IAP AT admission (n)	Post operative period			
		IAP 0 hours (n)	IAP 6hours (n)	IAP 12 hours (n)	IAP 24hrs (n)
Normal	101(69.70%)	130(89.7%)	113(77.9%)	125(86.2%)	136(93.8%)
Grade I	18(12.4%)	9(6.2%)	10(6.9%)	5(3.4%)	1(0.7%)
Grade II	7(4.8%)	3(2.1%)	14(9.7%)	11(7.6%)	5(3.4%)
Grade III	15(10.3%)	2(1.4%)	7(4.8%)	3(2.1%)	1(0.7%)
Grade IV	4(2.8%)	0(0%)	0(0%)	0(0%)	0(0%)

Table II: IAP grading at admission and during postoperative period

Marked organ dysfunction was observed in patients with IAH. CVS and renal system were the most affected ones. CVS dysfunction was observed in 59 (40.7%) patients at admission which after surgery decreased to 17 (11.7%). Renal dysfunction 57 (39.3%) was similarly profound in IAH cases at admission. Renal function also improved after surgery and patients with renal dysfunction decreased down to 16 (11%). There was low incidence of respiratory dysfunction in pre operative period accounting for 19(13.1%) which also showed some improvement after surgery.

Four (2.75%) patients died. There were four cases with ACS, 2(50%) were of traumatic perforation, 1(25%) of duodenal perforation and 1(25%) of small bowel obstruction. Three patients had ACS in preoperative period and one had persistent ACS postoperatively also. All patients with ACS in our series died.

DISCUSSION

The importance of IAH and ACS is known for decades now but most of studies reported in literature have been done either in trauma cases or patients admitted in ICU. There are isolated reports of role of IAH and ACS in surgical patients. The surgical patients at risk include those who require abdominal and retroperitoneal surgery and also when vigorous fluid resuscitation is required for shock or for any other reason. This study include group of patient who had perforative or obstructive lesions of GIT. There were 77.93% (113) male and 22.06% (32) female patients. Male dominance was seen in this study which is comparable to study conducted by Khan S. et al.[7] who reported 76% (149) males and 24% (48) females. A similar male female ratio was seen in the studies conducted by Hong et al.[8] (72% males) and Meldrum et al.[9] The mean ± SD age in our study were 37.78±18.04 years (range 2-79 year) with median age being 45 years. Most of the studies report the mean age to be higher than what we observed. Cheatham et al. have reported a mean age of 51±19 years, Meldrum et al 39±9 years, and Hong et al 42 years[10].

Out of 145 patients in this series there were 10.34% (15) trauma patients. This is in contrast to the study by Cheatham et al who had 68% trauma patients in their study group[10]. This can be explained by the population selected for the study. The population pattern however matched to some extent with the group of patients reported by Khan S. et al.[7] who also had included a maximum number of general surgical patients.

In patients with IAH at admission the mean pressure before and after decompression in our series was 19.6 ±5.8 mm Hg and 7.7 ±1.7 mm Hg, respectively. The mean (SD) IAP in the cases studied by Surgery et al.[8] before and after decompressions was 16.6 ±9.4 mm Hg and 10.3 ±3.1 mm Hg, respectively. Meldrum et al. reported higher values of IAP pre- and post-operatively: 27 ±2.3 and 14±4.6 mm Hg, respectively[9]. This can be explained by the observation that in our study, 88.32% of the patients had perforation and obstruction leading to elevated IAP which, after decompression and removal of fluid and gas, returned to normal level immediately.

The incidence of IAH in our study was 32% at admission and 20% at 6 hours post-operatively. The incidence of ACS was 3.06% (3 out of 98 patients) in perforative lesions, 2.12% (1 out of 47 patients) in obstructive lesions and 13.33% (2 out of 15 patients) in trauma patients. Three out of four patients with ACS were in pre operative period and one was in post operative period. The incidence of IAH and ACS reported by various authors before and after decompression ranged from 2 to 78% and 0.5 to 36%, respectively and depends on the study population and the values used to define these entities[10]. The lower incidence observed in this series was because this study included low risk as well as high-risk patients, whereas most of the previous studies confined data collection to high-risk patients.

While the latter approach ensures a good yield of patients with ACS, it may result in a very high incidence compared with that seen clinically in overall general population. Furthermore, such an approach potentially misses those patients who are not at high risk and yet may have Multiple Organ Dysfunction Syndrome (MODS) falsely attributed to sepsis or irreversible shock when in fact they have unrecognized ACS. By measuring the IAP prospectively in all patients, this study obtained true overall incidence. Also, an incidence of 2.75% in overall study population is significant enough to warrant further investigation in this group.

No significant association was found between IAP at any point of time and occurrence of leakage ($P > 0.05$). IAH at admission and persistence raise of IAP in post operative period particularly at 6 hours and later had detrimental effect both on morbidity and mortality. Cheatham et

al had found that elevated IAP alone does not have sufficient sensitivity or specificity to be used as a predictor of mortality[10]. But in our patients, elevated IAP pre-operatively and post-operatively at 6 hours was found to independently predict the occurrence of death ($P < 0.05$) but not at post operatively at 0, 12 and 24 hours ($P > 0.05$).

The mortality rate in ACS group was 100% despite decompression. In a retrospective study conducted by Britt et al. in 2005 reported overall mortality of 60% and 43% after decompression.[11] The high mortality in our study despite decompression could due to early fulminant multiple organ dysfunction syndrome (MODS) or delay in decompression as the IAP readings were taken at 0, 6, 12 and 24 hours post-operatively with no reading in between. Hence, a more frequent IAP monitoring is recommended, at least in high-risk patients.

CONCLUSION

Patients with intestinal obstruction and perforation had elevated IAP at presentation. IAP is a significant predictor of mortality and morbidity, in patients with obstructive and perforative lesions of GIT.IAH has a detrimental effect on various organ functions. Decompression leads to improvement in all the parameters. ACS was associated with very high mortality rate in this study. A more frequent monitoring of IAP with prompt decompression may be helpful in decreasing the morbidity and mortality rate. Further studies are required to establish a screening protocol in patients with obstructive and perforative lesions of GIT to detect and manage cases of IAH and ACS.

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ORIGINAL ARTICLE

A Comparative Study of Intravenous Nitroglycerin With or Without Intravenous Lignocaine for Attenuation of Stress Responses to Endotracheal Intubation

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ABSTRACT

Background: Laryngoscopy and tracheal intubation lead to stress response which is characterized by transient rise in blood pressure and heart rate. This response is tolerated well in normal individuals but can lead to significant morbidity and mortality in patients with cardiovascular and cerebrovascular diseases. Search for the better drugs to suppress these responses is going on through decades. **Aim of Study:** To compare the effects of IV nitroglycerin alone and in combination with IV lignocaine, on attenuation of stress response to endotracheal intubation. **Material and Methods:** This is a randomized, double blind study conducted in 60 patients admitted for operation at NGMCTH, between June 2018 to November 2018. Patients were of 16- 60 years age groups and belonging to ASA group I and II. Patients were divided into two groups: Group I IV Nitroglycerin 500 mcg+ NS 3 ml. (n=30) and Group II IV Nitroglycerin 500 mcg+ IV Lignocaine 63 mg (n=30). Systolic Blood Pressure (SBP), Diastolic Blood Pressure (DBP), Mean Arterial Pressure (MAP) and Heart rate (HR) were measured and Rate Pressure Product (RPP) calculated. **Results:** Baseline values were comparable in both groups. Post Intubation, there was significant decrease in SBP at 0,1,3 and 5 minutes while DBP and MAP significantly decreased at 1, 3 and 5 minutes, in both groups. Significant tachycardia was noted in both groups at 0,1and 3 minutes, and RPP remained unchanged in both groups. **Conclusion:** Nitroglycerin significantly decreases blood pressure, prevents rise in RPP but does not attenuate heart rate after endotracheal intubation. There is no benefit of adding IV lignocaine to IV nitroglycerin for attenuation of stress response to endotracheal intubation.

Key Words: *Nitroglycerin, lignocaine, intubation, stress response.*

INTRODUCTION:

Laryngoscopy and endotracheal intubation leads to an average increase in blood pressure by 40-50% and heart rate by 20%[1]. Although, these hemodynamic changes after intubation cause no significant morbidity in healthy individuals, these can lead to hypertensive crisis, pulmonary edema, cardiac dysrhythmias, myocardial ischemia, and cerebral hemorrhage in the presence of cardiovascular and cerebrovascular disease[2,3].

A wide variety of pharmacological agents are used to attenuate the hemodynamic responses to endotracheal intubation, like lignocaine, fentanyl, alfentanil, remifentanil, nifedipine, beta-blockers, gabapentin, nitroglycerin, magnesium sulfate, verapamil, nicardipine, diltiazem with varying results[4]. Among these drugs, the advantage of using nitroglycerin (NTG) during intubation is that, while a desirable and transient hypotension is achieved, cardiac output is not likely to decrease[5]. In addition, it has cardioprotective effect[6]. Most of the studies have found that NTG successfully prevent increase in BP, although it does not attenuate heart rate[2,7,8].

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Lignocaine is class IB antiarrhythmic drugs commonly used for attenuation of haemodynamic response to laryngoscopy and intubation as it is devoid of cardiovascular side effects except when used in larger doses.[9] Studies have shown that it significantly reduces heart rate post intubation[10,11]. On search of ideal drugs and technique to blunt these effects, some anesthesiologists are even combining two drugs based on their pharmacological action[11,12]. In this study we combined these cardioprotective and antiarrhythmic drugs.

MATERIAL AND METHODS:

This is a prospective, randomized, double blind study. This study was conducted from June 2018 to November 2018 in the Department of Anaesthesiology, Nepalgunj Medical College, after taking approval from Institution Review Committee. 60 patients were enrolled for the study. Patient of age 16 to 60 years, ASA physical status I and II, scheduled for surgery under general anaesthesia and giving consents for the study were taken as study samples. Patients with hypertension, ASA grade III and IV, patient suspected of difficult intubation and endotracheal intubation taking more than 30 seconds were excluded from the study.

All patients were admitted to the hospital at least a day before surgery and routine pre anesthetic checkup followed by premedication with diazepam 5 mg and pantoprazole 40 mg was done. On arrival in operation room pulse-oximeter, blood pressure, electrocardiogram, were applied and the patients' SBP, DBP, MAP, HR and RPP were measured and taken as baseline values. All patients received 0.2 mg glycopyrrolate and

2 mg midazolam before induction. Fentanyl, Propofol and vecuronium were used for GA.

Patients were randomly divided to 2 groups in a double blind manner.

Group I: IV Nitroglycerin 500 mcg + 3 ml NS

Group II: IV Nitroglycerin 500 mcg + 63 mg Lignocaine (Volume= 3 ml)

Study drugs were given as bolus dose during induction of anaesthesia. Time just after intubation was taken as 0 minute.

Statistical Analysis:

Data was analyzed using SPSS 20. Independent sample t test, for comparison of variables among the groups and one sample t test, for comparison of variable within the groups were used. P value less than 0.05 was considered significant.

RESULTS

The mean age of group I and group II were, 34.37 and 33.03 respectively. The difference was statistically insignificant. There was no any significant difference on baseline variables (SBP, DBP, MAP, HR, RPP), between the groups.

	Group I				Group II			
	N	Mean	Std. Deviation	P Value	N	Mean	Std. Deviation	P value
SBP Baseline	30	125	11.955	30	30	124	11.702	.828
DBP Baseline	30	75.43	8.997	30	30	78.63	8.584	.164
MAP Baseline	30	90	9.884	30	30	92.17	9.735	.395
HR Baseline	30	90.97	16.113	30	30	91.13	14.311	.966
RPP Baseline	30	11.423	2.510	30	30	11.320	1.989	.861

Table I: Comparison of Baseline Variables between the groups

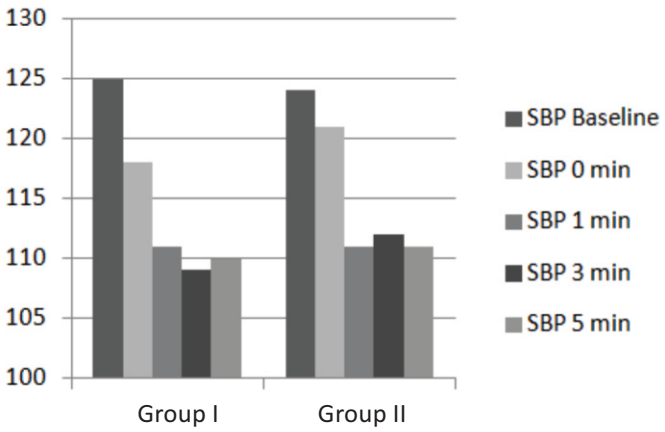

Figure 1: Comparison of SBP values

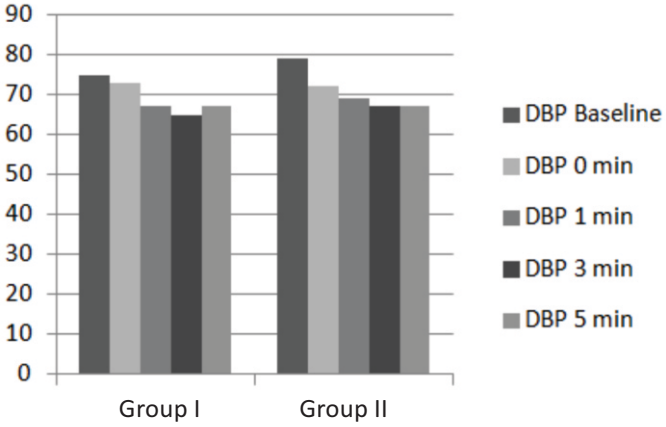

Figure 2: Comparison of DBP values

In both groups there was significant decrease in SBP, DBP and MAP from their baselines. DBP 0 min and MAP 0 min were exception in both the groups, as the decrease was not statistically significant. The highest decrease was observed at 3 minutes from intubation.

	Group I				Group II			
	N	Mean	Std. Deviation	P Value	N	Mean	Std. Deviation	P value
MAP Baseline	30	90.00	9.844	1.000	30	92.17	9.735	.999
MAP 0 min	30	86.50	13.274	.159	30	85.53	20.551	.087
MAP 1min	30	80.73	13.928	.001	30	81.00	18.078	.002
MAP 3 min	30	78.63	13.145	.000	30	80.93	15.763	.001
MAP 5 min	30	79.77	16.012	.002	30	79.57	16.895	.000

Table II: Comparison of MAP of two groups from their baseline values.

	Group I				Group II			
	N	Mean	Std. Deviation	P Value	N	Mean	Std. Deviation	P value
HR Baseline	30	90.97	16.113	.999	30	91.13	14.311	.999
HR 0 min	30	100.17	15.530	.003	30	103.33	15.191	.000
HR 1min	30	99.77	16.128	.006	30	101.77	16.600	.001
HR 3 min	30	98.00	14.802	.014	30	98.67	14.269	.007
HR 5 min	30	94.87	16.404	.203	30	95.57	16.685	.156

Table III: Comparison of HR of two groups from their baseline values.

The pattern of change in heart rate was similar in both groups. Heart rate significantly increased just after intubation in both groups and gradually decreased. It reached to statistically insignificant level only on 5 min.

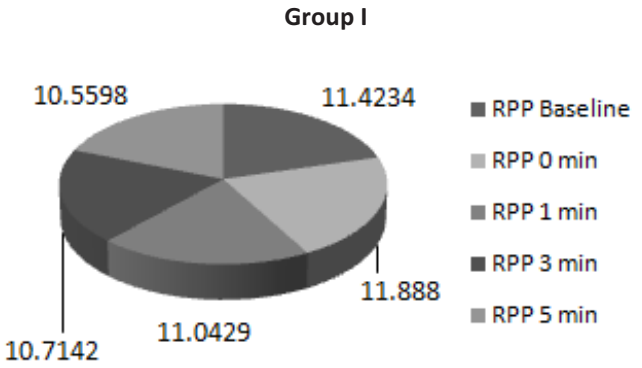

Fig III: Comparison of RPP - group I

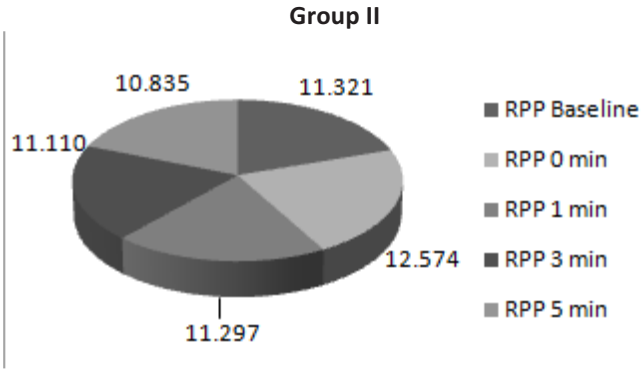

Fig IV: Comparison of RPP - group II

There were no statistical significant changes in RPP from their baseline values, among both groups.

DISCUSSION:

The circulatory response to laryngeal and tracheal stimulation following laryngoscopy and intubation was documented by Reid and Brace in 1940 and by King et al in 1951[13,14]. The response to laryngoscopy and intubation is a sympathetic reflex that is provoked by stimulation of the oro-laryngopharynx[15].

Dexmedetomidine although have good result for attenuation of intubation response, side effects like bradycardia and hypotension, necessitating need for pharmacological rescue therapy are limitations to its use[16]. Short acting opioids appear to have a reliable and constant effect but they may contribute to truncal rigidity and prolong recovery time from general anaesthesia in addition to respiratory depression[9]. Excessive negative chronotopic and inotropic action of the β-receptor blockers may reduce coronary perfusion and precipitate heart failure in susceptible patients[17]. Vasodilators like intravenous NTG produce reduction in blood pressure but they do not blunt rise in heart rate[18]. So, no single drugs can be concluded as ideal drugs for blunting intubation response. This is why in this chose to combine IV lignocaine with IV NTG and compare the response with response of NTG alone.

Nitroglycerine is an organic nitrate that acts principally on venous capacitance vessels and large coronary arteries to produce peripheral pooling of blood and decrease cardiac ventricular wall tension[19]. Thus NTG may increase the coronary blood flow and oxygen delivery to the myocardium[5]. NTG had been administered intranasally, or parenterally as a bolus or infusion to attenuate hemodynamic responses during laryngoscopy[4].

Lignocaine is an aminoethylamide and prototype of amide local anesthetic group[20]. In 1961, Bromage showed that use of intravenous (IV) lignocaine blunted pressure response to intubation[21]. Intravenous lidocaine has been popular probably because of its theoretical advantages of suppressing cough reflex, preventing increases in intracranial pressure, attenuating circulatory responses, and its antiarrhythmic properties[22].

In our study, demographic profile and baseline hemodynamic parameters i.e., SBP, DBP, MAP, HR and RPP were compared among both groups. Individual hemodynamic parameters in each group were compared with their baseline values. When compared to the baseline values, just after intubation (0 min), there was significant reduction in SBP, but no significant changes in DBP and MAP in both groups. In 1, 3 and 5 minutes

there was significant reduction of blood pressure in both groups. At 5 minutes 20% (n=6) individuals in Group I and 23% (n=7) individuals in Group II had hyptension. The hypotension was managed with fast IV fluids and decreasing isoflurane, whereas 1 individuals from each group required 6 mg IV mephentermine. Kumar N et al in their study found lower increase in SBP, DBP and MAP following administration of 2 mcg/kg NTG,[23] but in our case hypotension have been associated because of higher drug dose, 500 mcg for all individuals.

In both groups, the heart rate was significantly greater at 0, 1and 3 minutes. It settled down to the baseline level at 5 min. Similar to this study, Kumari I et al in her study observed that NTG does not attenuate the rise in HR[4]. Previous studies have also documented that NTG does not attenuate the rise in HR after intubation which can be attributed to reflex tachycardia produced by vasodilation[5,24].

There was no significant change in RPP from their baselines, in both groups.

This study showed that adding lignocaine had no extra effect than NTG alone. This is consistant with studies done by Vandenberg AA, Sawa D and Honjol NM.[7] Padmawar S and Patil M also showed that IV lignocaine did not have any effect on the hemodynamic changes following intubation[25].

CONCLUSION

Nitroglycerin significantly decreases blood pressure, prevents rise in RPP but does not attenuate heart rate after endotracheal intubation. There is no benefit of adding IV lignocaine to IV nitroglycerin for attenuation of stress response to endotracheal intubation.

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Topical Nitroglycerine Versus Lateral Sphincterectomy for Fissure in Ano: A Hospital Based Comparative Study

Adhikari B[1],Yadav SK[2], Gupta SN[3]

ABSTRACT

Background: Anal fissure is a common benign condition presenting as severe pain, constipations and bleeding per rectum.It is defined as longitudinal tear or defect in anal canal skin.Surgical treatment of this conditions requires hospital admission and complications, like bleeding, infection and to its severe extent continence disturbances. That warrants a new treatment modality as pharmacological sphincterotomy i. e topical GTN (glycerine trinitrate) whose effects are reversible, cost effective and simple. **Objective:** The objective is to compare the effectiveness of topical GTN over lateral sphincterotomy in terms of pain management and healing of fissure. **Method:** This was a comparative study carried out in the department of Surgery at Nepalgunj Medical College, Teaching Hospital.Two groups were created and 25 patients in each group were put randomly.First group (Group 1) used topical GTN whereas second group(Group 2) underwent lateral sphincterotomy for treatment of fissure.The two groups were reassessed at 4 and 8 weeks for pain and fissure healing. **Result:** Total number of patients was 50. Each group consisted of 25 patients. The male to female ratio in group 1 was 1:1.5 and in group 2 it was 1: 1.8. In group 1 patients after 4 weeks of application of GTN pain reduced from the mean of 80±15 at the time of presentation to 50±9.27. When these patients were seen after 8 weeks, the pain reduction on VAS was nil in 21 patients out of 25. In group 2 the mean score fell from 75±15 to 20±10 after 4 weeks and at 8weeks 23 out of 25 patients didn't have any pain. It was observed that the pain reduction and healing were faster in group 2 patients when evaluated after 4 weeks (p=0.0029). but at the end of 8 weeks both group patients were similar in terms of pain reduction and healing of fissure (p=.28). **Conclusion:** According to study local GTN application is as effective as lateral sphincterotomy with cost effectiveness, simple with tolerable side effect and no continence disturbances.

***Keywords*:** Anal fissure, lateral sphincterotomy, topical GTN

INTRODUCTION

An anal fissure is a longitudinal tear or defect in the skin of the anal canal distal to the dentate line. The classification of anal fissures is based on causative factors. Primary fissures are typically benign and are likely to be related to local trauma such as hard stools, prolonged diarrhea, vaginal delivery, repetitive injury or penetration. Secondary fissures are found in patients with previous anal surgical procedures, inflammatory bowel disease (e.g. Crohn's disease), granulomatous diseases (e.g. tuberculosis, sarcoidosis), infections (e.g. HIV/AIDS, syphilis) or malignancy[1].

The pathophysiology of anal fissures is not entirely clear. It is probable that an acute injury leads to local pain and spasm of the internal anal sphincter. This spasm and the resulting high resting anal sphincter pressure[2] leads to reduced blood flow and ischaemia[3,4] and poor healing.

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It is seen in any age group but more commonly seen in adult group. Sex wise also it more or less equally seen in both sexes. The fissure classically presents as severe pain, bleeding and mass at perianal region in chronic fissure with history of constipation and itching around perianal region in 50% of cases[5].

In the past treatment of fissure most patients used to go for lateral sphincterotomy as method of choice but these surgery have common complications like bleeding, infection, wound pain, disturbances in incontinence(10%), cost and long hospital stay, which warranted a new method of treatment which is easy, cost effective and as good as surgery. That led towards the chemical or pharmacological way to create temporary sphincterotomy by using glycernitrates ointments locally which lowers the sphincteric tone only until the fissure wound heals[1].

Local GTN decreases anal tone, relaxes the internal sphincter and improve the local bloodflow that improves the symptoms and helps healing of fissure with minimal side effect like headache, giddiness and syncope and also costly and time consuming surgery can be avoided[6].

In the view of above fact local GTN can be used as its having minimal, temporary and avoidable complications and surgery can be reserved for those cases which donot tolerate the GTN or treatment failures from GTN. Thus my study tries to evaluate the efficacy of local GTN application over lateral

sphincterotomy in the management of fissure, in terms of pain and fissure healing.

MATERIAL AND METHODS

The study wasHospital based comparative study consisting of patients diagnosed as fissure in ano in Surgical OPD at Nepalgunj Medical College, from the period of September 2017 to September 2018. All the patients diagnosed as anal fissure were included. Pregnant females, patients with diabetes, inflammatory bowel disease, chronic liver disease, recurrent fissure, associated hemorrhoids and patients who did not give written consent were excluded**.** Detail history about pain during and after defecation, bleeding per rectum,itching, and discharge with duration of symptoms were recorded.After recording detail history, digital rectal examination was done to see for the tear at posterior and anterior anal verge, discharge,indurations and skin tag(chronic fissure). Pain evaluation was done by using Visual analogue score.

According to the treatment patients were randomly divided into two groups:

Group 1 consisted of Patients with fissure that used pharmacological sphincterotomy with local application of GTN at and around fissure area twice daily for about 8weeks.Along with the GTN, patients were advised for stool softener, rich fiber diet and sitz bath twice daily for a month.The patients who did not tolerate GTN and in those despite GTN fissures persisted,were advised for lateral sphincterotomy and not considered in study.

Group 2 consisted Patients with fissure who underwent Surgery sphincterotomy. All the patients underwent surgery by the same surgeon with same technique in lithotomy position under spinal anesthesia.

Followup Assessment

1. Pain evaluation was done by visual analogue score (VAS).Patients were shown the VAS scale(100 mm) line to point with starting point of no pain during defecation and end point of worst pain during defecation.
2. Bleeding present or absent
3. Healing of fissure with complete epithelization of fissure, non-healing or persistence of fissure and time for healing of fissure
4. Any adverse effects of treatments

All the patients were reevaluated after 4 weeks and 8weeks for healing, recurrence of fissure and any side effects of treatment.

RESULT

Group 1

The total numbers of Patients were 50. Each group consisted of 25 Patients.

There were 15(60%) females and 10(40%) males.The age ranged from 18 to 60 years, with the mean age of 36 years. 25(100%) patients presented with pain during defecation, 18(72%) with pain and constipation and 15(50%) presented with pain and bleeding. 23(92%) had posterior fissure. 2(8%) had anterior fissure.

Follow up Assessment (Group 1)

At 4 weeks

The major complaints of all the patients in group 1 were pain. The pain score ranged from 60 – 100 on VAS, with the mean score of 80±15 at the time of presentation. After the application of tropical GTN, when they were followed up at 4 weeks the pain reduced from mean of 80 at presentation on VAS to mean of 50±9.27. The bleeding was present in 15 Patients at presentation. After 4 weeks of application 9 Patients did not have any bleeding. In 6 Patients bleeding was persisting but was reduced significantly. The sign healing of the fissure was seen in 15(60%) patients.

At 8 weeks

At 8 weeks the pain on VAS reduced from mean of 50at 4 weeks follow-up to no pain in 21 Patients out of 25 while passing stool. The bleeding was absent in all Patients. The remaining 4 Patients who had persisting pain, but mild in intensity (ranging from 5-15 on VAS) totally disappeared at 12 weeks follow up. The fissure had completely healed after 8 weeks in 20 Patients. In 5 Patients it healed after 12 weeks. One Patient out of 25 had recurrence after 6 months.

Group 2

The patient of this group underwent lateral sphincterotomy under spinal anesthesia in a lithotomy position.This group consisted of 25 patient among which 12(48%) were males and 13(52%) were females.The age ranged from 24 to 49 with mean age of32.58.

25(100%) had pain during defecation, 19(76%) presented with pain and constipation and 10(40%) had anal pain and bleeding.24(96%) had posterior fissure with 1(4%) having both anterior and posterior fissure.

Follow upassessment (Group 2)

At 4 weeks

In this group the pain at presentation ranged from 50 to 100 on VAS, with the mean score of 75±15. When these Patients were evaluated at 4 weeks their mean score on VAS was 20±10. The bleeding was present in 10 patients at presentation. After Surgery none of them had bleeding, 24(96%) Patients showed healing of fissure at 4 weeks. 1(4%) Patient had infection which took few more weeks to heal. 2(8%) Patients had flatus incontinence which resolved on itself.

At 8 weeks

After 8 weeks the pain score on VAS reduced from mean of 20 to no pain in 23 Patients. The remaining 2 Patients who had pain while passing stool disappeared completely at 10 weeks. The bleeding was absent in all Patients. All Patients had complete healing.

While comparing the pain score in two group at the end of 4 weeks the decrease in intensity was statistically significant (P=0.0029). But when compared at 8 weeks the severity of pain was reduced almost in all Patients in both groups (P=0.297). Similarly when healing of fissure was compared 15(60%) Patients has healing of fissure in group 1 and 27 (96%) in group 2 (P=0.0001). At 8 weeks 24 (96%) in group 1 & 25 (100%) in group 2 had healing (P=0.28) which was comparable.

DISCUSSION

Earlier most of the fissure were treated with lateral sphincterotomy which was gold standard treatment of anal fissure but with time passing and advent of drugs having nitrateshas caused treatments of fissure mostly with acute symptoms leaning towards pharmacological sphincterotomy with local application of GTN as the surgery need to have hospital admission, more costlier and have complications like bleeding, infection and chance of having sphincter dysfunction which can be as high as 30%[7]. These all dictated to device a simpler and cost effective therapy like pharmacological sphincterotomy which decreases the anal tone and fissure healing without disturbing anal continance[8,9] and not to replace but as a conjuct to the well accepted therapy of lateral sphincterotomy.

Lund and Schoelfieild[10]showed that topical application of GTN healed most of the fissure at 8 week time.Pitt et al.[11] have also shown that healing of fissure occurs well with topical GTN but sentinel piles adversely affects the outcome which was not consider in my study.Oettle[12] study randomized 24 patient for treatment with sphincterotomy or GTN all 12 pt healed in surgery group and 10 out of 12 in GTN group, he concluded that local application of GTN can avoid surgery in 80% of cases of chronic fissure. Another trial randomized 70 patient GTN and surgery and resolutions of symptoms and healing of fissure assessed for 24 month, they concluded that most of the fissure heals by topical GTN and surgery should be reserved only for those failed to respond to GTN[13].

In study conducted by Gorfine[14] stated that 30% of patient experienced headache when treated with GTN ointment but the headache was tolerable and were able to continue the treatment in our study also patient had tolerable side effect but continued the study. Loder et al.[15] also applied topical GTN to lower down the anal tone which was beneficial in many anal disorder including fissure similar to this another trial showed topical GTN produced dramatically drop in anal tone in fissure causing relief of pain and helping healing than local xylocaine, proctosedyl or placebo[16] but in our study anal tone is not measured which could be drawback of our study.

CONCLUSION

Hence from the above observation it is seen that topical application of GTN also effectively relieves the pain and helps in healing of fissure but the process is slow and at the duration of 8 weeks effect of both topical GTN and lateral sphincterotomy is more or less same. So according to our study topical GTN can be tried for fissure which is more cost effective and simple than surgery which requires Hospital admission, Surgeon, Anesthesia and is costlier.Though the effect of surgery in pain management and fissure healing is quick but if we consider 8 week time the effect of both the treatment are comparable, so Surgery should be reserved for the which donot respond with topical GTN or have intolerableside effects of GTN.

The limitation of the study were small sample size, studydoes not consider anal tone measurement and absence of longer follow up so that no conclusion can be drawn in long term recurrence of both treatment.

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Prevalence of Intestinal Parasitic Infestation Among Hearing and Speech Impaired Children of Banke, Nepal

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ABSTRACT

Introduction: The parasites can cause different gastrointestinal disorders which have great impact on life quality. Hearing and speech impaired children are unable to maintain proper sanitation, making them more prone to intestinal parasitic infection. **Aim and Objective:** To know the prevalence of various parasitic infestations among hearing and speech impaired Children. **Materials and Methods:** Stool specimen were collected from 104 hearing and speech impaired children who were living in private rehabilitation school of chisapani village of Banke district Nepal for a period of 5 month from December 2017 to April 2018 and direct wet mount was prepared using normal saline (0.9%) and Lugol's iodine (0.5%). The wet mount was observed under microscope for parasites. **Results:** Among 104 individuals intestinal parasites were seen in 25.96 % of students. Giardia lamblia (37.04%) was the most common parasite followed by Ascaris lumbricoides (18.52%) and Entamoeba histolytica (14.82%). **Conclusion:** The study shows that although the speech and hearing impaired children are more prone to parasitic infection, the prevalence is same as normal people. Giardia lamblia, Ascaris lumbricoides and Entamoeba histolytica were the common parasites. Prompt diagnosis and treatment of infected children should be undertaken.

Key words: *Infestation, intestinal parasites, prevalence*

INTRODUCTION

Parasitic diseases have great impact on life quality of people all over the world particularly in developing countries. Actually, the prevalence of parasitic infections in a particular region depends not only on bioenvironmental situation, but also on social, economical, cultural conditions and physical status of person. In developing countries people have lack of access to health services, malnutrition, and poor sanitation increases vulnerability to infection with parasites[1].

In south-east Asia Disability is a one of the major health problems with second and third highest prevalence rate of moderate disability and severe disability respectively.[2] In Nepal 1.6% of total population are disabled with mobility disability being most common followed by speech and hearing, visual and finally intellectual disability[3].

Due to the various disability, differently-abled people are unable to maintain proper sanitation, making them more prone to intestinal parasitic infection. About 60% of Nepalese are infected with one or more parasite with soil-transmitted helminthes being most common[4].

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It have been seen that there is wide variation in prevalence of parasitic infestation in physically disabled people all over the world.[2]

The parasites can cause different gastrointestinal disorders such as diarrhoea, dysentery, vomiting, lack of appetite, abdominal distension, malnutrition and anaemia etc[5,6].

The common intestinal parasites that are found in human are Giardia lamblia, Entamoeba histolytica, Ascaris lumbricoides, Trichuris trichiura, Ancylostoma duodenale etc[7].

This study is aimed to know the prevalence of various parasitic infestations in hearing and speech impaired Children of Banke District.

MATERIAL AND METHOD

This descriptive – cross sectional study was carried out on 104 hearing and speech impaired children who were living in private rehabilitation school of Chisapani village of Banke district Nepal for a period of 5 month from December 2017 to April 2018. Informed consent was taken from the school teachers and also from students who were participating in the study with the help of teachers. A questionnaire on age, sex, family size, ethnic group etc was filled with help of available data at school. The students were provided with wide mouthed clean, dry, properly labelled plastic container for collection of samples. The collected sample were transferred to the Microbiology laboratory of Nepalgunj Medical college. A direct wet-mount was done using saline (0.9%) and Lugol's Iodine (0.5%) mount and observed under the microscope for stool parasites. Formalin- ether concentration method was done for the sample which were negative in direct wet mount. Collected

data were entered in Microsoft Office Excel 2007 and analyzed using SPSS Inc. Statistical Software Version 16.0

RESULTS

Out of 104 speech and hearing impaired children who were included in the study 29 (27.88%) were female and 75 (72.12%) were male and 25.96% of the speech and hearing impaired persons were positive for parasite. (Table I). Among positive cases 19 (70.37%) were positive in direct smear and 8 (29.63%) (Giardia -3, Entamoeba histolytica-1, Ascaris lumbricoides-2, Hookworm -1, Trichuris trichuria-1) were positive in formalin-concentration method (Indirect).

Sex	Total Number	Positive Number	Percentage
Male	75	19	25.33%
Female	29	8	27.50%
Total	104	27	25.96%

Table I: Prevalence of intestinal parasites among school children according to sex.

Type of Parasites	Total	Percentage
Protozoa		
Cyst of Giardia lamblia	10	37.04
Cyst of Entamoeba histolytica	4	14.82
Helminths		
Egg of Ascaris lumbricoides	5	18.52
Egg of Hookworm	3	11.11
Egg of Hymenolepis nana	3	11.11
Egg of Trichuristrichiuria	2	7.40
Total	**27**	**100**

Table II: Types of intestinal parasites detected from hearing and speech impaired school children

DISCUSSION

Parasitic infestations of the gastrointestinal tract are one of the most common infections worldwide. It has been estimated that some 3.5 billion people are affected, and 450 million are sick as a result of these infections[8].

It was seen that prevalence of intestinal parasitic infestation among hearing and speech impaired children was 25.96% which is within the range shown by various studies done in general population at different geographic locations of Nepal by Chhetri et. al[9] and Rai et al[10]. This shows there is equal chance of people getting infected in Nepal irrespective of their presence or absence of disability. A study done by Poudyalet. al[2] on prevalence of intestinal parasitosis in differently-abled

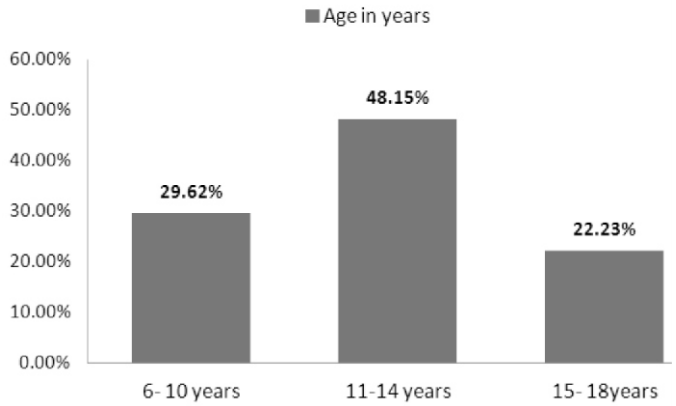

Figure 1: Prevalence of intestinal parasites among school children of different age-groups

The positive rates were 29.62%, 48.15% and 22.23 % among children aged 6-10, 11-14and 15-18 years respectively (Figure 1). Six types of parasites were detected from hearing and speech impaired children among them two species were of protozoa and four species of helminthes.The most common intestinal parasite was found to be G. lambliain 10 (37.04 %) of the cases, followed byAscarislumbricoides5 (18.52%) (Table II).

persons was 32.1%. The variation on prevalence of parasitic infestation could be be because of variation in social, economical, cultural conditions and physical status of person[1]. This study showed there was no difference in intestinal parasitosis prevalence among different sexes in hearing and speech impaired children which is in agreement to studies done by Poudyal et. al[2] on differently-abled people.

In this study the higher prevalence (48.15%) among children in the group aged 11-14 years appears to be associated with their activities. Children in this age group usually move around over a wider territory, increasing the possibility of acquiring infections from contaminated environment[11].

In this study most common intestinal parasites detected from hearing and speech impaired school children was Giardia lamblia (37.04%) which was similar to finding of Poudyal et al[2] on differently-abled peoplehowever most common intestinal parasitic infection in Nepal is helminthes[12]. The high rate of G. lamblia may be due to continuous exposure to contaminated water[2].

Ascarislumbricoides was second most common parasites found in this study followed by Entamoebahistolytica and Hookworm etc which was similar to finding of Poudyal et.al[2]. This appears to be due to the difficulty of complete removal of this parasite with a single dose of antihelminthic drug, particularly in those with heavy infection[11].

CONCLUSIONS

Parasitic infestation is a major public health problem in Nepal it becomes even more difficult to manage when associated with some disability like in hearing and speech impaired people. The study shows that although the hearing and speech impaired people are prone to parasitic infection, the prevalence is same as normal people. It may be because of transmission of infection by consumption of contaminated food and water. Giardia lamblia was most commonly detected intestinal parasites followed by Ascaris lumbricoides. The increasing trend of some parasites in the hearing and speech impaired children indicates the failure of maintaining good sanitation, personal hygiene, provision of safe drinking water, health education etc.Prompt diagnosis and treatment of infected children should be undertaken which will improve the overall health status of differently-abled children and help them live a comfortable life.

Limitations:

The limitations of the study are small sample size and study was conducted in single center only.

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ORIGINAL ARTICLE

Functional Outcome of Displaced Diaphyseal Both Bone Forearm Fracture in Children Treated with Elastic Stable Intramedullary Nails

DC GS

ABSTRACT

Introduction: Pediatric forearm fractures are most commonly managed by closed reduction and above elbow cast. Failure to achieve anatomical initial reduction, tight cast and re-displacement within cast leading to malunion are common complication .Elastic stable intramedullary nailing for such fracture gives more predictable result with minimal morbidity. We studied on functional outcome of such fracture treated operatively with elastic stable intramedullary nail in our center. **Methods**: This prospective descriptive study was done in Nepalgunj Medical College Hospital, Nepalgunj between January 2015 to May 2017.It included 47 pediatric patients (5-15 years) with displaced both bone forearm diaphyseal fracture. All fractures were fixed with elastic stable intramedullary nails of appropriate size under general anesthesia. Cases were followed up at 1, 2, 4, 6, 8, 10, 12 weeks and at 6 month functional outcome was evaluated using price criteria. Data were entered in structured proforma and statistical analysis was carried out using SPSS 20.0. **Results**: Out of 47 cases included in our study, mean age of patient was 9.7 years (range 5-15 years). 31(65.9%) cases were male and 16(34.1%) were female.42(89.4%) cases had closed fracture and 5(10.6%) had grade I open factor.40(85.1%) cases were operated by closed technique. Average hospital stay was 2.7±1.8 day (range 2-5days). Radiological union was achieved on 6.5±2.7 weeks (range 6-11weeks).Functional outcome in final follow up at 6 month was excellent in 36(76.6%), good in 9(19.1%) and fair in 2(4.3%) cases. Superficial surgical site infection was seen in 3 cases (6.3%) and exposure of nail tip was seen in 2 cases (4.2%). **Conclusion:** Elastic stable intramedullary nail for displaced pediatric both bone forearm diaphyseal fracture is biological osteosynthesis**,** simple and reproducible treatment with excellent functional outcome with minimal morbidity.

Keywords: *Elastic Stable Intramedullary Nail (ESIN), forearm fracture, pediatric*

INTRODUCTION

Pediatric forearm fractures are common orthopedic injuries[1]. Traditionally most of the displaced both bone forearm fracture are managed successfully with closed reduction and above elbow cast application[2]. Malunion(5-15% cases) with functional disability due to redisplacement within cast is the most common complication of displaced diaphyseal both bone forearm fracture managed by cast application[3]. The most common indications for surgery in pediatric both bone forearm fracture are failure of closed reduction, redisplacement, unstable fracture[4-5]. Adequate stabilization can be achieved by various surgical techniques for these types of fractures including plates, external fixation and elastic stable intramedullary nail (ESIN)[6-7-8]. Over last 10 years approximately one fourth of such fracture are treated by ESIN[9]. In this study we prospectively followed pediatric (5-15 years) displaced both bone forearm diaphyseal fracture managed by ESIN in our center, evaluated the functional outcome of those cases and noted complications with this treatment method.

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METHODS

This prospective descriptive study was done in department of orthopedics in Nepalgunj Medical College Teaching Hospital, Nepalgunj after appropriate ethical clearance. All Pediatric (5-15 years) diaphyseal both bone forearm fractures (grossly displaced/angulated) presenting to the orthopedic department between January 2015 and May 2017 were included in this study. Metaphyseal both bone forearm fracture, isloated fracture of forearm, pathological fracture, Grade II and III open fractures, refracture cases were excluded from the study. Forty seven cases fulfilled the inclusion criteria and were included in this study. Demographic variables, mode of injury, fracture pattern were noted in proforma.

Cases were taken up for surgery under general anesthesia and were operated by first author. Intravenous antibiotics (Cefazolin, 500mg) stat dose was given to all cases. First closed reduction under c-arm was attempted in all cases after standard sterile draping and antiseptic painting, if closed reduction fails then fracture site was opened with small incision centering fracture and reduction was achieved. Fracture were fixed sequentially first radius and then ulna with ESIN of appropriate size (nail that fills 80% of diameter of the bone was chosen, usually 2 or 2.5 mm). Entry portal for radius was made by mini incision over dorsolateral aspect of distal radius sparing physis and nail was introduced in retrograde fashion. Entry portal for ulna was made over dorsomedial aspect of proximal metaphyseal region and nail was introduced in antegrade fashion under C-arm control. Wound was closed

with skin stapler and dressing was applied. Crepe bandage compression with arm pouch sling support was applied in all case. We didn't applied any slab or cast for immobilization. Cases were usually discharged after 48 hrs. of observation for any early fracture complications specially compartment syndrome.

Cases were followed up in 1, 2, 6, 8, 10 and 12 weeks and 6 months after surgery. At 2 weeks stapler was removed and gentle range of movement out of sling was started. Check x-ray was done at 6, 8 weeks if no radiological union is seen then x-ray are repeated at 10 and 12 weeks sequentially to look for radiological union and same was noted. At 6 month follow-up functional outcome was evaluated as per price et al[10] criteria and was recorded as excellent, good, fair and poor. Data were then entered in Microsoft excel and analyzed for frequency distribution and mean where appropriate, using SPSS 20.0 version.

RESULTS

In our study out of 47 cases of displaced diaphyseal both bone forearm fracture managed by ESIN, 31(61.9%) cases were male and 16(34.1%) were female. Mean age of patient was 9.7 years.

Mode of injury was fall on outstretched hand while playing outdoor in 27(57.4%) cases, slip injury while walking in 12(25.5%) cases and road traffic accident in 8(17.1%) cases. Right forearm was fractured in 28 cases, left forearm was fractured in 19 cases.

Both bone fracture was a mid-diaphysis in 29(61.7%) cases, distal diaphysis in 10(21.2%) cases and proximal diaphysis in 8(17.1%) cases. Of them 42(89.4%) cases were closed fracture and 5 (10.6%) cases were grade I open fracture.

Of them anatomical reduction and fixation with ESIN was done by closed reduction technique in 40(85.1%) cases. However 7 (14.9%) cases required open reduction, of them 3 cases required open reduction only for radius fracture and 4 cases required open reduction for both radius and ulna. Average length of hospital stay in these cases were 2.7±1.8 days (ranging 2-5 days), longer stay was required for grade I open fracture case and those who required open reduction for fixation.

On follow-up x-ray radiological union was achieved on means duration of 6.5±2.7 weeks (6-11weeks). (Figure 1). ESIN removal was done in all patient after 7.2 ±2.3 months (6-12 months)

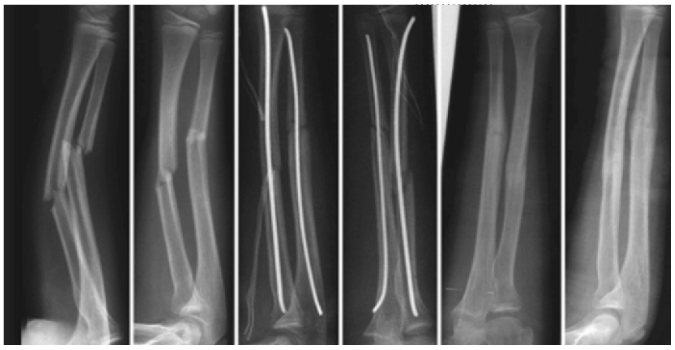

Figure.1: X-ray showing displaced both bone forearm diaphyseal fracture in 10 year old child. Immediate post-op and at 8 weeks follow-up x-ray with radiological union.

Functional outcome evaluated by price criteria showed excellent result in about three fourth of the cases. (Figure.2)

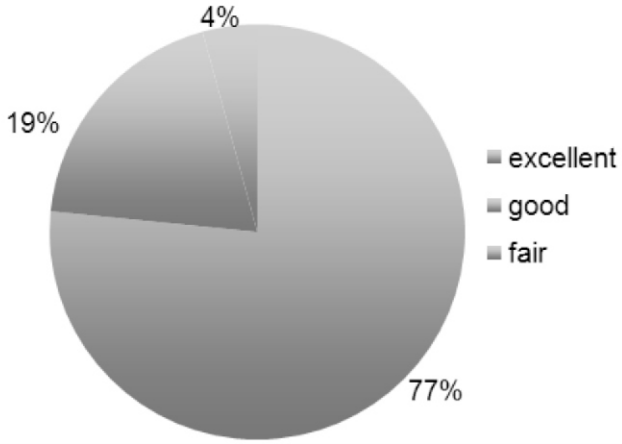

Figure 2: Functional outcome evaluated by price et al criteria

Post-operative complications noted were superficial surgical site infection in 3 cases (6.3%) managed with oral antibiotics and did not progress to deep infection or osteomyelitis. Exposure of nail tip over ulnar insertion site was seen in 2 cases (4.2%) and was managed with regular dressing and early nail removal after radiological union.

DISCUSSION

Closed reduction and casting is most common method of treating pediatric diaphyseal forearm fractures, surgery is done only for unstable fracture or when closed reduction fails or there is redisplacment within cast[11]. There is high incidence of malunion in such conservatively treated fracture as diaphyseal fracture has less remodeling potential then distal one third forearm fracture[1]. Daruwalla JS suggested surgery for midshaft and proximal forearm fractures with angulations >10° because of limited remodeling potential in these areas of the bone[4]. Given the potential failure of non-operative management (1.5% to 31%) and the importance of minimizing

angular deformity to preserve normal forearm rotation, operative management of pediatric forearm fracture has been increasingly popular[13]. Shoemaker et al suggested that the ideal mode of fixation of pediatric forearm fractures should maintain alignment, be minimally invasive and inexpensive, and carry an acceptable risk profile[8]. The main advantages of intramedullary nailing include maintenance of reduction, provision of an inexpensive, less invasive, relatively easy application, protection of bone alignment by three point contact, acceleration of bridging callus formation through micro movements at the fracture site, and thus contribution to rapid bony healing[14].

In our study anatomical reduction and fixation with ESIN was done by closed reduction technique in 40(85.1%) cases. However 7(14.9%) cases required open reduction, of them 3 cases required open reduction only for radius fracture and 4 cases required open reduction for both radius and ulna. The rate of open reduction with intramedullary nailing of pediatric forearm fracture in published literature ranges from 7.4% to 75%[15,16]. Close reduction or open reduction before intramedullary nailing yield similar functional results, with similar complication profile in pediatric diaphyseal fracture[13].

In our study radiological union was achieved in all cases in mean duration of 6.5±2.7 weeks (6-11weeks). There was no case of malunion or nonunion in our study. Shivanna S et al reported radiological union was achieved in all their patients at an average of 7 weeks and similar to our study they did not report any case of delayed union, malunion or nonunion.

In our study Functional outcome evaluated at 6 month follow up by price et al criteria showed excellent result in 36(76.6%), good in 9(19.1%) fair in 2(4.3%) cases and none had poor results. Ozkaya U and Parmaksizoðlu AS recorded that 85.7% had excellent, 14.3% had good results according to Price et al Criteria18. Richter et al observed only three of 30 patients with a supination deficit of 10° after an average of 6 months follow-up i.e. 90% excellent results[19].

In our study post-operative complications noted were superficial surgical site infection in 3(6.3%) cases, which was managed successfully with oral antibiotics and did not progress to deep infection or osteomyelitis. Exposure of nail tip over ulnar insertion site was seen in 2(4.2%) cases. Yalcinkaya M et al[2] reported complications rate ranged from 4-38% in patients treated with intramedullary nailing and Flynn JM et al showed that the overall complication rate in patients undergoing intramedullary nailing was 14.6%[13].

CONCLUSION

Closed reduction and casting for unstable pediatric diaphyseal forearm fracture has significant risk of malunion with poor functional outcome.ESIN is safe and reliable biological osteosynthesis for displaced unstable diaphyseal both bone forearm fracture in children. It gives excellent functional outcome with minimal morbidity.

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Correlation of Grading of Esophageal Varices with Child Turcotte Pugh Class in Patients of Liver Cirrhosis

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ABSTRACT

Background: Majority of cirrhotic patients develop varices over their lifetime and it is anticipated that roughly one third of varices will develop bleeding. Child Turcotte Pugh (CTP) class predicts the risk of variceal bleeding and has been used as a prognostic tool in patients of liver cirrhosis. **Objective**: To correlate grade of esophageal varices in Upper Gastrointestinal endoscopy with Child Turcotte Pugh class in patients of liver cirrhosis. **Material and method**: This is a cross sectional descriptive study conducted in the department of medicine of NGMCTH, Kohalpur between December 2017 to November 2018. A total of 97 patients were included in the study who were diagnosed as cirrhosis of liver clinically and radiologically. Patient were classified into CTP class A, B and C according to CTP score. UGI endoscopy was performed and endoscopic grading of esophageal varices were correlated with CTP class and the data were recorded and analysed. **Result:** Mean of patients was 50 years. Among 97 patients, 30 (30.9%) were in CTP class A, 30 (30.9%) in CTP class B and 37 (38.1%) were in CTP class C. 25 (25.8%) had small varices, 50 (51.5%) had large varices with red color sign, 20 (20.6%) had large varices without red color sign and 2 (2.1%) had no varices. Most of the patients in CTP class B and C had large varices with red color sign whereas CTP class A had small varices. **Conclusion:** The cirrhotic patients in CTP class B and C have large varices with red color sign and have more chances of bleeding. Hence, routine screening is indicated to determine the presence of varices. Porphylactic therapy after identifying large varices will decrease the incidence of bleeding leading to reduction in mortality rate.

Key words: *Child turcotte pugh class, cirrhosis, red color sign, sophageal varices*

INTRODUCTION

Chronic liver disease is a process of progressive destruction and regeneration of liver parenchyma leading to fibrosis and cirrhosis[1]. Portal hypertension is the significant complicating feature of decompensated cirrhosis and is responsible for the development of esophageal varices[2].

Over the last decade, it has become common practice to screen known cirrhosis to look for varices. It is estimated that the majority of cirrhotic patients develop varices over their lifetime. It is anticipated that roughly 1/3[rd] of the varices will develop bleeding. Several factors predict the risk of bleeding like severity of cirrhosis (Child Pugh Class, MELD score), size of varices, location of varices, certain endoscopic stigmata like red wale sign (red color sign)[3].

Child Pugh classification is a reliable staging system of cirrhosis with a scoring system of 5-15. Score of 5 and 6 Child Pugh class A (compensated cirrhosis), score of 7-9 indicating class B and 10-15 indicating class C. Child Pugh score is a reliable predictor of survival in many liver disease and predicts the likelihood of bleeding from varices. In Child Pugh A esophageal varices are present in 40% whereas they are present in 85% in Child Pugh C. Hence Child Pugh grading correlates with presence of esophageal varices. Depending upon Child Pugh grade and co-morbidities, mortality from single episode of variceal bleeding varies from 30%-50%. Beta blocker therapy or endoscopic band ligation (EBL) is performed for primary as well as secondary prevention of variceal bleeding whereas EBL is also the treatment of choice for acute variceal bleeding.

Studies about the correlation of esophageal varices with severity of liver disease have been done in Kathmandu (Nepal), western countries, India, Pakistan and Bangladesh but not in western Nepal though cirrhosis of liver is not an uncommon disease in this region. Hence this study has been carried out.

MATERIAL AND METHODS

This is a cross-sectional descriptive study conducted in 97 patients who were admitted as cirrhosis of liver in medical units of NGMCTH, Kohalpur from December 2017 to November 2018. Informed consent of the patient and permission from Institutional review Committee (IRC) of the hospital was also obtained. A detailed clinical history was recorded regarding age, sex, symptoms like jaundice, distension of abdomen, hematemesis and malena. All patients underwent complete clinical examination including detailed examination of gastrointestinal system. Routine biochemical investigation, liver function test was done in every patient. Every recruited patient underwent ultrasonography. Thus cirrhosis of liver was

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diagnosed clinically and radiologically[4]. Hemodynamically unstable cirrhotic patients, Hepatocellular carcinoma (HCC) and age more than 80 years were excluded from the study.

All cases of cirrhosis of liver were classified into A, B and C according to Child Pugh score.[5] (Table I).

	1 point	2 point	3 point
Serum Bilirubin (mg/dl)	<2.0	2.0-3.0	>3.0
Serum Albumin (g/dl)	>3.5	3.0-3.5	
Prothrombin time (seconds prolonged)	<4	4-6	
Ascitis	None	Easily controlled	Poorly controlled
Encephalopathy	None	Minimal	Advanced

Table I: Child-Pugh classification of the severity of cirrhosis

All patients were subjected to upper gastrointestinal (UGI) endoscopy after an overnight fast of 12 hours and varices were graded according to size into small (≤5 mm) and large (>5 mm)[5]. Large varices were further categorized into varices with red color sign and without red color sign. Data were analysed using standard statistical method including SPSS 20.0.

RESULT

Total number of 97 patients with the diagnosis of cirrhosis of liver were recruited in the study. Among them majority of patients were between 40-60 years of age (71.1%) and mean age was 50 years. In male it was 49 years and in female 53 years. 81 patients (83.5%) were male and 16 (16.5%) were female. Out of 97 patients, 33 (34.0%) presented with UGI bleeding. 30 patients were in Child Pugh class A, 30 in class B and 37 in class C. The most common etiology was found to be ethanol related (85.6%) followed by chronic hepatitis B (7.2%), unknown (5.2%), chronic hepatitis C (1.0%) and Non-Alocholic Steatohepatitis (NASH) related (1.0%) as shown in table II.Out

Variables		n (%)
Age (Years)	<40	17 (17.5)
	40-60	69 (71.1)
	>60	11 (11.3)
	Mean±SD	50±12 (Male: 49±11, Female: 53±12)
Sex	Male	81 (83.5)
	Female	16 (16.5)
Indication of Endoscopy in COL	UGI Bleeding	33 (34.0)
	Screening	43 (44.3)
	Pain Abdomen	10 (10.3)
	Others	11 (11.3)
Biluribin (mg/dl) -Mean ± SD		2.75 ± 3.41
Albumin (g/dl) -(Mean ± SD)		3.18 ± 0.47
PT (Sec. Prolonged) -(Mean ± SD)		5.12 ± 3.3
Ascites	None	55 (56.7)
	Mild	41 (42.3)
	Marked	1 (1.0)
Encephalopathy	None	88 (90.7)
	Minimal	7 (7.2)
	Advanced	2 (2.1)
Child Turcotte Pugh Class (CTP)	A	30 (30.9)
	B	30 (30.9)
	C	37 (38.1)
Etiology	Ethanol related	83 (85.6)
	Chronic Hepatitis B	7 (7.2)
	Chronic Hepatitis C	1 (1.0)
	NASH Related	1 (1.0)
	Unknown	5 (5.2)

Table II: Demographic and Clinical characteristics of study participants (n=97)

of 33 (34.0%) patients who has presented with UGI bleeding, 6 (6.2%) were on CTP class A, 7 (7.2%) patients in CTP class B and 20 (20.6%) were in CTP class C as shown in table III.

Indication of Endoscopy in Cirrhosis	Child Turcotte Pugh Class (CTP)			
	A N (%)	B N (%)	C N (%)	Total N (%)
UGI Bleeding	6(6.2)	7(7.2)	20(20.6)	33(34.0)
Screening	20(20.6)	16(16.5)	7(7.2)	43(44.3)
Pain Abdomen	4(4.1)	4(4.1)	2(2.1)	10(10.3)
Others	0(.0)	3(3.1)	8(8.2)	11(11.3)
Total	30(30.9)	30(30.9)	37(38.1	97(100.0)

Table III: Indication of Endoscopy in cirrhosis and its CTP Class (n=97)

Out of 33 patients presenting with UGI bleeding, 6 (6.2%) had small varices, 22 (22.7%) had large varices with red color sign and 5 (5.2%) had large varices without red color sign as shown in table IV. Out of 97 patients, 25 had small varices, 50 had large varices with red color sign, 20 had large varices without red color sign and two were without varices.

In CTP class A, there were total 30 patients. Out of them 19 had small varices, 2 had large varices with red color sign, 7 had large varices without red color sign and 2 had no varices. In CTP class B also there were 30 patients. Out of them 5 had small varices, 19 had large varices with red color sign and 6 had large varices without red color sign. In CTP class C also there were 37 patients. Out of them 1 had small varices, 29 had large varices with red color sign and 7 had large varices without red color sign, as shown in table V.

DISCUSSION

Cirrhosis is the most advanced form of liver disease and variceal bleeding is one of its lethal complications. Most cirrhotic patients develop esophageal varices with lifetime incidence as high as 90%. Cirrhotic patients with large esophageal varices are at high risk for bleeding. Hence, preventive efforts are concentrated on identifying cirrhotic patients with large varices.[6] Present study showed that more than 90% of cirrhotic patient had esophageal varices diagnosed by UGI endoscopy. This result is much higher than the range of 24%-80% showed in literature.[7] This might be due to the late presentation of the patients seeking medical attention only when they develop decompensated liver cirrhosis (CTP class B and C).

In this study, mean age of the patient was 50 years. In male mean age was 49 years and in female mean age was 53 years. Similar observation was made by Sagnelli E et al.[8] in which mean age in male was 52.9 years and in female 58.7 years. Likewise, the mean age in the study done by Zainab S et al.[9] was 46.79 years, Shekar GC et al.[10] was 43.18 years, Thapa P et al.[11] was 41.4 $\pm$ 11.7 years.

In this study, 83.5% were male and 16.5 % were female showing male predominance. Similarly, Thapa P et al.[11] (male -86%), Zainab S et al.[9] (male – 60.5%), Shekar GC[10] et al (male -78%), Sumon S et al.[12] (male -73%) and Mukherjee P et al.[13] (male-73%) showed male predominance in their study.

Indication of Endoscopy in	Small	Large with Red Color Sign	Large without Red Color Sign	None	Total
UGI Bleeding	6(6.2)	22(22.7)	5(5.2)	0(0.0)	33(34.0)
Screening	13(13.4)	19(19.6)	9(9.3)	2(2.1)	43(44.3)
Pain Abdomen	5(5.2)	3(3.1)	2(2.1)	0(0.0)	10(10.3)
Others	1(1.0)	6(6.2)	4(4.1)	0(0.0)	11(11.3)
Total	25(25.8)	50(51.5)	20(20.6)	2(2.1)	97(100.0)

Table IV: Indication of Endoscopy in cirrhosis and association with varices (n=97)

Child Turcotte Pugh Class (CTP)	Small	Large with Red Color Sign	Large without Red Color Sign	None	Total	p value
A	19(19.6)	2(2.1)	7(7.2)	2(2.1)	30(30.9)	<0.001
B	5(5.2)	19(19.6)	6(6.2)	0(0.0)	30(30.9)	
C	1(1.0)	29(29.9)	7(7.2)	0(0.0)	37(38.1)	
Total	25(25.8)	50(51.5)	20(20.6)	2(2.1)	97(100.0)	

Table V: Child Turcotte Pugh Class (CTP) and association with varices

The main predictors of bleeding in clinical practices are: large vs small varices, red color sign, CTP class C vs CTP class A and B. In this study, out of 33 patients (34%) who presented with UGI bleeding, 20 (20.6%) were in CTP class C and 22 (22.7%) had large varices with red color sign indicating that there is increased chances of bleeding in CTP class C and in those who have large varices with red color sign. This finding is similar to the study done by Merli M et al[14] who showed that UGI bleeding is more common in patients having large varices with red color sign and who are in CTP class C.

In the present study, most common etiology of liver cirrhosis was ethanol related (85.6%) followed by hepatitis B virus. Similarly study done by Shekar GC et al[10] and Mukherjee P et al[13] also found ethanol related as the most common etiology of cirrhosis which were 62% and 34.3% respectively. But the study done by Sumon S et al[12] in Bangladesh revealed Hepatitis B virus as the most common cause which was 48.7%. These differences might be due to differences in social culture, easy availability of alcohol, use of more concentrated local sprit in alcohol, etc.

In this study, out of 37 patients in CTP class C, 29 had large varices with red color sign and 7 had large varices without red color sign. Out of 30 patients in CTP class B, 19 had large varices with red color sign and 6 had large varices without red color sign. These findings show the correlation between higher grades of varices with higher Child Pugh score (CTP class B and C). Study done by Shekar GC et al.[10] concluded that higher grades of varices can be predicted by CTP class B and C. Sumon S et al.[12] in this study concluded that higher grades of esophageal varices is seen in more advanced class of Child Pugh class with a P value 0.001. Thapa P et al.[11] concluded that cirrhotic patients with higher Child Pugh scare had higher grades of esophageal varices leading to presentation with hematemesis. These findings are comparable to the present study.

CONCLUSION

The cirrhotic patients with higher Child Pugh score (CTP class B & C) have large varices with red color sign and have more chances for bleeding. Hence, routine screening of cirrhotic patients is necessary to determine the presence of varices before the development of variceal bleeding. Prophylactic therapy if started immediately after identifying large varices will decrease the incidence of bleeding leading to reduction in the mortality rate.

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Study of Socio-Demographic Profile of Pesticidal Poisoning Cases in Tertiary Care Center

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ABSTRACT

Introduction: The pesticide poisoning is a common medical emergency and leads to increase morbidity and mortality rate in developing countries due to easy accessibility and low cost. The study was conducted to study the socio-demographic profile of poisoning case to understand the possible factors responsible for poisoning episodes. **Method:** A hospital based descriptive cross-sectional study was carried out in Nepalgunj Medical College, Teaching Hospital, Kohalpur, a tertiary care center, conducted for period of six months from October 2017 to March 2018.The socio-demographic profile of all cases of pesticidal poisoning attended in emergency department or admitted in medical ward were collected on a suitably designed pre- structured proforma and analyzed. Results: Total 164 patients were enrolled in the study. Majority were fallen in the age group of 20-30 years with female 76.80% dominating the male 23.20%. Married couples (74.40%) were found to be more affected and house wife was more vulnerable group 42.10%. Incidence of poisoning was more common in joint family as compare to nuclear family 81.10% versus 18.90%.Organophosphorous was most common pesticides 42.70% and suicide was main manner of poisoning. Quarrel with spouse was main reason in majority 23.80% and most of events were held at evening 69.50%. **Conclusion**: Pesticide poisoning was common in developing countries. More emphasis should be given on preventive measures and safety practices among the population for prevention and reduction of the pesticide poisoning.

Key words**:** *Organophosphorous, pesticides, poisoning, socio-demographic profile, tertiary care center*

INTRODUCTION

Acute poisoning is an important medical emergency and major global health problem with significant morbidity and mortality affecting people of all age groups. According to World Health Organization, (WHO) poisoning occurs when people drink, eat, breathe, inject, or touch enough of a hazardous substance (poison) to cause illness or death[1]. As per WHO data in year 2012 it was reported that more than 90% of fatal poisoning cases are seen in middle and low income countries i.e. the developing countries in general and agricultural countries in particular[2]. Pesticide is any substance or mixture of substances intended for preventing, destroying, repelling or mitigating any pest. Pesticide poisoning is an important health problem particularly in the low-income countries like developing countries.

The reported incidence of pesticide poisoning worldwide is about 3 million and suicidal cases accounts more than one third[3,4]. Pesticide poisoning is common in our countries as majority of population's likely hood of living is still farming. Factors contributing pesticidal poisoning are, easy availability, low coast, lack of proper knowledge regarding proper handling and storage along with poverty, ignorance and illiteracy. Information regarding pesticidal poisoning in our region is limited and hence this study was carried out to study the socio-demographic profile of pesticidal poisoning in this center which will be useful for enhancement of the knowledge, awareness and safety practices among the population for prevention and reduction of the pesticide poisoning.

MATERIAL AND METHODS

The present study was undertaken at Nepalgunj Medical College, teaching hospital a tertiary care center. A descriptive cross sectional study was conducted for period of six months from October 2017 to March 2018. All cases of pesticidal poisoning attended in emergency department or admitted in medical ward were included in the study. Cases of food poisoning, adverse drug reaction, insect bites, snake bites and other than pesticides were not included in the study.

Patient data relevant to the study was obtained from treatment charts/case sheets, laboratory reports and patient or patient's relative. The relevant information was collected on a suitably designed pre- structured proforma. The socio-demographic profile consists of age, gender, occupation, marital state, and educational status, manner of poisoning and cause of poisoning. The collected data were entered in Microsoft Excel software and data analysis was performed with the help of SPSS software version 20.0.

RESULTS

Total of 164 patients enrolled majority were fell in the age

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group of 20-30 years 39% (64). Total female 76.80% (126) dominating the male 23.20% (38). Religion wise almost all 99.40 (163) were Hindus. Incidence of poisoning was found more common among married couples 74.40% (122) versus 25.60% (42) in unmarried. Most of the victims had completed secondary level education 48.80% (80). Incidence of poisoning was more common in joint family as compare to nuclear family (81.10% versus 18.90%). House wife was more vulnerable group 42.10% (69) as compared to others. Organophosphorous was most common pesticides used for poisoning 42.70% (70) and suicide was main manner of poisoning. Quarrel with spouse was main reason for poisoning in majority 23.80% (39) and majority of events were held at evening 69.50%(114).

Variables	Frequency	Percent
Age group		
<20 Yrs	35	21.30%
20-30	64	39.00%
30-40	36	22.00%
40-50	15	9.10%
50-60	6	3.70%
>=60	8	4.90%
Range (Years)	13-73	
Median age	25±12.74	
Gender		
F	126	76.80%
M	38	23.20%
Religion		
Hindu	163	99.40%
Muslim	1	0.60%
Maritia lStatus		
Married	122	74.40%
Unmarried	42	25.60%
Education		
Graduates	17	10.40%
No formal education	36	22.00%
Primary education	31	18.90%
Secondary education	80	48.80%
Type of Family		
Joint	133	81.10%
Nuclear	31	18.90%
Occupation		
Business	8	4.90%
Farming	13	7.90%
House wife	69	42.10%
Service holder	34	20.70%
Student	35	21.30%
Unemployed	5	3.00%

Table I: Sociodemographic details (n= 164)

Features	Frequency	Percentage
Type of pesticides		
Aluminium phosphide	17	10.40%
Cypermethrin	19	11.60%
Organophosphorous	70	42.70%
Unknown	32	19.50%
Zinc phosphide	26	15.90%
Manner of Poisoning		
Accidental	11	6.70%
Suicidal	153	93.30%
Cause of Poisoning		
Failure	35	21.30%
Miscellaneous	34	20.70%
Nil	38	23.20%
Quarrel with others	18	11.00%
Quarrel with spouse	39	23.80%
Time of ingestion		
Afternoon	1	0.60%
Evening	114	69.50%
Morning	10	6.10%
Night	39	23.80%

Table II: Distribution of cases according to features of poisoning (n=164).

DISCUSSION

Poisoning being an important public health problem. It consumes not only the valuable health service resources but also causes considerable morbidity and mortality[5]. Socio-demographic factors behind it were assessed with an attempt to find out the factors responsible for ingestion of poison, which might be very helpful for making preventive strategies and early intervention. The present study shows that the highest number of patients belonged to the age group of 20 to 30 years 39% (64) with mean age of 25 years, which was comparable to other studies[6,7]. This age group belongs to those who are more active, both physically and mentally with having major responsibilities towards family and society having continuous financial crises and stressful life. Higher suicidal rate was found among females 76.80% (126) than males 23.20% (38) which was similar with study done by Pokhrel et al[8]. Majority were housewives by occupation 42.10% (69) and belongs to joint family 81.10% (133) The high incidence may be because females are more exposed to stress, strain, have to manage household activities with limited resources along with domestic violence, unemployment and behavioral problems also contribute higher incidence among females. Married couples were more vulnerable as compared to unmarried (74.40% versus 25.60%) which was comparable to study done by Mugadlimath A et al[9]. Quarrel with spouse was main culprit in majority 23.20% (38) as compared with other factors. Marital disharmony probably causing stress and leading to extreme steps like poisoning. Among different pesticides used organophosphorous was used by majority 42.70%.(70). OP as main pesticides was also reported by other studies[9, 10, 11]. As Agriculture is the main occupation of the people in this region and organophosphorus was commonly used pesticide in this locality, which was cheap and easily available and accessible in market. In our study most of events were held during evening time 69.50% (114) contrast to Maharani et al, where mostly in day time[12]. The main reason during evening time may be most of family members were at home and any kind of dispute, quarrel may aggravate the situation.

LIMITATIONS

The small sample size and short duration of this study may be the main limitation factors affecting the results. Also, most of the cases were diagnosed on the basis of patient's history and clinical examination, while they were not confirmed with laboratory testing.

CONCLUSION

Organophosphorous was the most commonly used poison due to its easy availability and accessibility. We suggest the government should regulate the import, manufacture, sale, transport, distribution and use of insecticides and pesticides with a view to prevent risk to human beings.

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Association between Psoriasis and Obesity

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ABSTRACT

Background: Psoriasis is primarily a chronic skin disease, the course being punctuated by remissions and relapses. Research has shown that hypertension, obesity, heart failure and diabetes are significantly more common in patients with psoriasis. Obesity is associated with severe psoriasis and is reported about twice as frequently among psoriasis patients as in the general population. In recent years many reports have demonstrated an association between psoriasis and metabolic syndrome. **Objectives:** The aim of this study was to identify the prevalence of obesity in patients with psoriasis and compare it with that of non-psoriatic population. **Material and Method:** This study is a case control hospital based study conducted in the Department of Dermatology, Venereology and Leprology of Nepalgunj Medical College Teaching Hospital, Kohalpur between May 2017 to October 2018.Total 56 cases of psoriasis and similar number of healthy age and sex matched controls were enrolled in the study after taking written consent. Detailed history and physical examination was performed with measurement of body mass index which was recorded. Statistical analysis was done using SPSS 20. **Result:** The results of the study which included 56 patients with psoriasis and 56 subjects without psoriasis. Among them 26 male and 30 female in study population and 25 male and 31 female in control group. The mean age was 41.68±19.04 years in study population and 39.46 ±16.27 years in control group. Duration of disease ranged from 2 months to 360 months and PASI score ranged from 4.4 to 28.2 with mean PASI score 11.02±5.4. BMI in cases ranged from 16.7 to 34.2 with mean 24.3±4.3 and in controls it ranged from 15.5 to 29.1 with mean 21.9±3. Mean BMI was significantly higher in cases than controls. **Conclusion**: The result of this study supports the significantly higher prevalence of obesity in study population than control group.

Keywords: *Psoriasis, obesity*

INTRODUCTION

Psoriasis is a common skin disorder affecting approximately 1-6% of the population in the world. Psoriasis is a chronic skin disease characterized by inflammatory cell infiltration, hyper proliferation of epidermal cells and dilated microvessels[1]. Studies suggest that the disease has bimodal onset, the first peak at the age between 16-22 years and later at 57-60 years of age[2]. Psoriasis tends to occur equally in both the sexes. studies have shown that the mean age of onset is at 33 years of age and 75% of cases occurs before the age of 46 years[3].

The etiopathogenesis of psoriasis is not well understood and various etiological factors have been thought to cause the disease in combination including genetic factors, trauma, infection, environmental factors, drugs, endocrine factors, sunlight, metabolic factors, alcohol, cigarette, and psychological factors[4]. It is characterized by exaggerated and disordered epidermal cell proliferation and keratinization. A host of abnormalities seen in psoriasis, like increased levels of cyclic - adenosine monophosphate (CAMP), epidermal growth factor receptor binding, protein kinase C and transforming growth factors collectively point to a disturbance in T cell function. Currently, the most accepted hypothesis is that psoriasis is an immune-mediated inflammatory skin disease that manifests in a genetically predisposed person exposed to certain environmental agents or triggers. This view has been reinforced by the efficacy of various immunomodulatory agents in the treatment of psoriasis[5].

Obesity is associated with severe psoriasis and is reported about twice as frequently among psoriasis patients as in the general population. In recent years many reports have demonstrated an association between psoriasis and metabolic syndrome. Metabolic syndrome is combination of: Central obesity, diabetes mellitus type 2, hypertension and dyslipidaemia[6].

There are several evidences which indicate that psoriasis is closely associated with obesity and hypertension. Herron et al. found that obesity is almost twice as prevalent in patients with psoriasis as in general population.[7]

METHODS

This study is a hospital based Case control study conducted in the Department of Dermatology Venereology & Leprology, Nepalgunj Medical College Teaching Hospital Kohalpur, between May 2017 to October 2018. Before initiating the study the proposal of the study was submitted to the Institutional Review Board. The study population included the patients

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visiting the OPD of Department of Dermatology, Venereology and Leprology of NGMCTH who were diagnosed as having psoriasis either on the clinical ground and/or histopathologically.

Inclusion criteria included

Case:

a) Clinically and/or histopathologically diagnosed cases of psoriasis by a dermatology consultant.
b) Age > 16years, belonging to either gender.

Control

a) Age and sex matched healthy adult population who were hospital staff or attendants of the patients.
b) More than 16 years age, belonging to either gender.
c) No evidence of psoriasis or any other systemic illness.

Altogether 112 (both case and control) patients were included in the study. Diagnosis of psoriasis was made clinically by the consultant dermatologist. The PASI score, BMI were calculated by the author himself. The will of the subjects was fully respected and those who did not give consent for participation were excluded from the study. A written consent was taken from each patient after explaining the relevant details of the study, its importance and implications. Confidentiality was maintained to utmost. Detailed history was taken and detailed clinical examination and investigation was performed and the details were recorded. Statistical analysis was done using SPSS 20. Fisher's exact test was used for significance testing and P value less than 0.05 was considered significant. Odds ratio was used to compare the risk between cases and controls.

RESULTS

A total of 56 cases were included in the study. Fifty six age and sex matched controls were also enrolled. Age of the cases ranged from 18 to 82 years with the mean age 41.68 ± 19.04 years. Age of the controls ranged from 19 to 92 years with mean age 39.46 ± 16.27 years. There was no significant difference in age distribution of cases and controls across the groups (P value = 0.796) as shown in figure 1.

Gender distribution

Out of 56 cases, 26 (46.6%) were male and 30 (53.6%) were female. Out of 56 controls, 25 (44.6) were male and 31 (55.4%) were female as shown in figure 2. There was no significant difference in proportion of male and female between cases and controls (P value = 1).

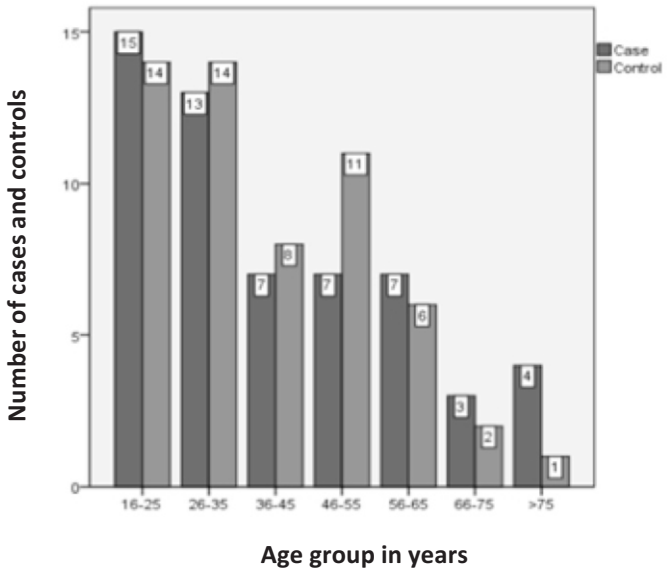

Figure 1: Age distribution of cases and controls

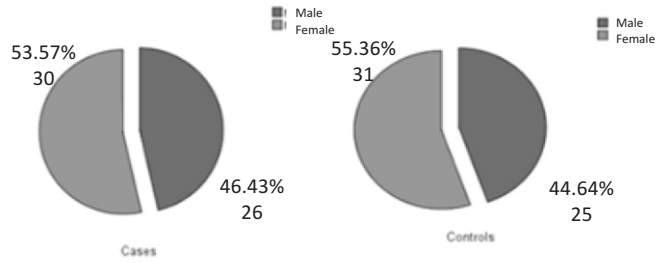

Figure 2: Gender Distribution

Duration of disease

Duration of disease ranged from 2 months to 360 months with mean duration of 72.21 ± 67.23 months as shown in table I below.

Duration of psoriasis	Numbers of patients (n=56)	Percentage
< 1 year	4	7.1
1-<5 years	24	42.9
5-<10 years	15	26.8
≥ 10 years	13	23.2

Table I

Severity of the disease (PASI)

PASI score ranged from 4.4 to 28.2 with mean PASI score 11.02 ± 5.4.

BMI (in kg/m^2)

BMI in cases ranged from 16.7 to 34.2 with mean 24.3±4.3 and in controls it ranged from 15.5 to 29.1 with mean 21.9±3. Mean BMI was significantly higher in cases than controls with p value = 0.001 shown in table II.

Classification	BMI (Kg/m2)	Cases	Control
Underweight	<18.5	3	7
Normal range	18.5-24.9	32	39
Pre-obese	25-29.9	13	10
Obsese I	30-34.9	8	-
Obese II	35-39.9	-	-
Obese III	≥40	-	-

Table II: Number of cases and controls according to WHO (2000) classificationfor BMI

Prevalence of high BMI (≥25 kg/m^2) in cases and controls

Prevalence of BMI ≥ 25kg/m^2 was significantly higher in psoriatic patients than controls (Table III). Psoriatic patients had 2.8 times increased odds of getting high BMI than controls.

	Cases	Controls	Odds Ratio	P value
BMI ≥ 25 kg/m^2	21(37.5%)	10 (17.9%)	2.8(95% Cl 1.2-6.6)	
BMI≤25 kg/m^2	35(62.5%)	46(82.1%)		

Table III: Comparison of prevalence of high BMI in cases and controls

BMI	Mean PASI±SD	P value
BMI ≥ 25 kg/m^2	11.2±6.0	0.742
BMI < 25 kg/m^2	10.7±4.3	

Table IV: Association of BMI disease severity (PASI)

Association of BMI and disease duration

Mean values of disease duration (in months) in psoriatic patients were compared between the groups with BMI <25 kg/m^2 and BMI ≥ 25 kg/m^2. There was no significant difference in mean disease duration between the groups which is shown in table V.

BMI	Mean duration of disease (in months))±SD	P value
BMI ≥ 25 kg/m^2	69.7±73.9	0.71
BMI < 25 kg/m^2	76.5±55.6	

Table V: Association of BMI and disease duration

DISCUSSION

There have been many studies linking psoriasis to the individual components of the metabolic syndrome since many years[8,9]. A total of 56 cases and age and sex matched 56 controls were enrolled in this study. Age of the psoriatic patients ranged from 18 to 82 years with mean age 41.68 ±19.04 years and maximum number of patients were of age group 16 to 35 years, which was similar to the study done at TUTH by Shrestha et al[10]. There were slightly higher proportions of female (53.6 %) than male (46.6%) in this study but the study done by Shrestha et al[10] showed slightly higher proportion of male (51.7%) than female (48.3%) however the difference was not statistically significant.

In this study, Duration of disease ranged from 2 months to 360 months with mean duration of 72.21 ± 67.23 months which was similar to study done by Lakshmi et al171, Madanagobalane et al[11]and Gisondi et al[12]. In this study PASI score ranged from 4.4 to 28.2 with mean PASI score 11.02±5.4 which is similar to study done by Lakshmi et al[13] Madanagobalane et al[11].

In this study, prevalence of obesity (i.e. BMI ≥ 25kg/m^2) was significantly higher in psoriatic patients (37.5%) than controls (17.9%) (P=0.034). Psoriatic patients had 2.8 times increased odds of getting high BMI than controls. Similar result was seen in study done by Gisondi et al[12] Kaye et al[14].

There was no significant difference in the mean PASI score between the groups having BMI≥ 25 kg/m^2 and BMI <25kg/m^2. Similar results were seen in study done by Gisondi et al[12] and Lakshmi et al[13].

There was no significant difference in the mean disease duration between the groups having BMI ≥ 25 kg/m^2 and BMI <25 kg/m^2. Similar results were seen in the study done by Madanagobalane et al[11] and Baeta et al[15]However, the study done by Mallbris et al[16]and Nisa et al[17] had shown positive association between disease duration and BMI.

CONCLUSION

Psoriasis is one of the chronic inflammatory skin diseases, affecting mostly young adults. Different studies have shown its is association with higher prevalence of metabolic syndrome. This study also supports the finding of significantly higher prevalence of obesity in psoriatic patients than control group. Thus, psoriasis should not be regarded as a simple skin disease but rather as a systemic inflammatory disease. The knowledge that psoriasis can be associated with obesity can make dermatologist to screen the psoriatic patient early for obesity and patients can be advised about adapting healthy lifestyle, including diet and exercise.

Limitation of the study

The sample size was small to draw the valid inferences to the larger population

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Open Globe Injury in a Tertiary Care Hospital

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ABSTRACT

Introduction: Open Globe Injury (OGI) is a type of mechanical eye injury in which there is a full thickness defect of the outer fibrous coat of eye ball. The Prognosis in the eyes with OGI has improved in these days. 2.4% of blindness in Nepal was due to ocular trauma in 1981. The aim of this study was to describe epidemiological profile, clinical profile and treatment outcome in eyes with open globe injury. **Methodology:** It is the prospective interventional non randomized hospital based study on the patients of open globe injury presented to the Nepalgunj Medical College, Nepalgunj from April 2017 to May 2018. Visual acuity, anterior and posterior segment evaluation, site and size of wound were recorded. All the eyes were underwent primary repair surgery. Postoperative visual acuity, anterior and posterior segment evaluation was carried out on all follow up. Second surgery was done if required. **Results:** 0.4% of ophthalmic and 0.016% of all hospital patients had open globe injury. Most of the victims were young males. The mean age of study population was 10.98±17.1 year. Playing (62.5%) was the most common time of injury and wooden stick (50%) was most common agent of injury. Zone I involvement (87.5%) and penetrating type (91.7%) was found in most of cases. 87.5% of eyes were blind, 4.2% were visually impaired and 8.3% had normal vision at the time of presentation. 79.2 % of eye were improved after treatment on visual function, 12.5% remained unchanged while 8.3% deteriorates and leads to pthysis bulbi. **Conclusion:** The incidence of open globe injury was 0.4% among ophthalmic patients and 0.016% among all patients of Nepalgunj Medical College Teaching Hospital, Nepalgunj. Early Primary repair, use of systemic antibiotics and postoperative care provides encouraging anatomical and functional outcome in these eyes with OGI.

***Key words**: Blindness, open globe injury, primary repair*

INTRODUCTION

A national survey on blindness carried in 1981 found 2.4% of blindness in Nepal is due to ocular trauma[1]. Ocular trauma affect mostly young male. Mechanical eye injuries are classified into close globe and open globe type. In an open-globe injury (OGI) there is a full-thickness wound of the outer fibrous coat, regardless of the presence or absence of uveal or retinal involvement[2]. OGI is the leading cause of severe anatomical and functional destruction of the visual system.

Although severe ocular injuries comprise a small percentage of all ocular trauma cases, they are by far the most costly, to the individual and their family, the health system and to society[1–3]. 0.26% of pediatric eye patient at western Terai region of Nepal present with OGI[4]. Fong et al(1995), demonstrated 2% of all ocular injuries as open globe injuries (OGIs)[3]. Kinderan et al[5] showed 5.3% of all eye injuries as OGI at Western Hilly region of Nepal. Dulal et al[6] detected 5.8% of all ocular injury as OGI and 0.46% of all eye patient as OGI at Midwestern Hilly region of Nepal. Inspite of considerable effort to prevent OGI related blindness, it remains common around the world, with an annual global incidence rate of 3.5/100,000 persons[7].

In the present days, the prognosis of patients with OGIs has significantly improved due to use of microsurgical techniques and instrumentation as well as improved knowledge of pathophysiologic mechanism[8]. Poor prognostic factors for open-globe injuries are Wounds larger than5 mm, late presentation (after 24 hour of injury), a poor visual acuity (VA) at the first visit, a ruptured globe, zone III injuries, history of penetrating keratoplasty (PK), retinal detachment (RD),vitreous haemorrhage (VH), and expulsion of the crystalline lens[9]. In Midwestern and Far western region of Nepal OGI is still blinding disease in children due to lack of anesthesiologist in the eye hospitals of this region, unawareness and poverty. There is lack of study on this disease at Midwestern and Far western Nepal; thus we studied the epidemiology, clinical profile and outcome of treatment on this disease from April 2017 to May 2018 at Nepalgunj Medical College, Nepalgunj.

MATERIAL AND METHODS

Ethical approval was obtained for the study from the institutional review committee (IRC) of the Nepalgunj Medical College, Nepal. A prospective non randomized interventional study was conducted. All the patients presenting to the Nepalgunj medical college, Nepalgunj with a diagnosis of an OGI from 1st April 2017 to 31st May 2018 were included in the study. An OGI was defined as a full thickness wound of the eye wall (cornea and/or sclera)[2].

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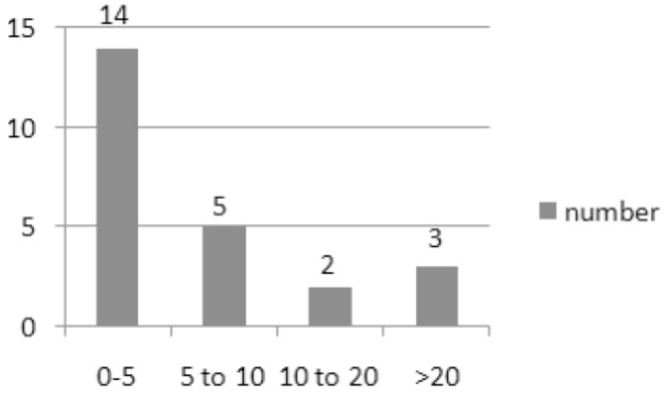
Demographic data included patient age, sex, date of injury, race, cause; nature and agent of injury were noted. Time interval between the injury and presentation was also noted. Presenting complaint, use of alcohol or recreational drugs at the time of the trauma and previous ocular surgery were recorded. The size, location and details of injuries were collected. Best-corrected visual acuity (BCVA) was recorded before and after treatment. All injuries were classified according to the Birmingham Eye Trauma Terminology (BETT) system[2].

All the patients were undergone primary repair surgery under general anesthesia by a single surgeon, where he uses non absorbable 10-0 nylon suture (aurolon, Aurolab, Madurai, India) for corneal repair and absorbable 6-0 vicryl (polycryl, Aurolab, Madurai, India) for scleral and limbal repair in interrupted fashion. If iris prolapsed was non-viable, it was excised. If vitreous is prolapsed it was removed by open sky vitrectomy. All patients were admitted in the ward and 5 day course of intra venous fluoroquinolone antibiotics were given. Topical antibiotics, steroid and cycloplegics were prescribed. Patients were evaluated for visual acuity, intraocular pressure and wound integrity, sign of infection, development of any complications and need of further interventions on the day of discharge, 2 weeks after surgery, 1 month and 3 months after surgery.

Statistical analyses were performed using SPSS software. A Student's paired t-test was used to compare the quantitative variables, while the chi-square test was used to compare the categorical data. Values of $p < 0.05$ were considered statistically significant.

RESULTS

Out of 5989 ophthalmic patients 0.4% (n=24) presented with open globe injury. 19(79%) of them were male and 5 (21%) were female. Thus male female ratio was 3.8:1. The mean age of study population was 10.98±17.1 year (range=1-58 year). Age wise distribution is shown below in table I.



Age group(year)	Number	Percent
0-5	14	58.3
5-10	5	20.8
10-20	2	8.3
>20	3	12.5

Table I: Age wise distribution

Most of our patients were from Sudurpaschim province and Kailali district as shown in table II and table III. Almost 75% of cases were referred from eye hospitals and only 25% were primary cases. Only one case (4.2%) reached to the hospital with in 24 hour of trauma while 3 cases (12.6%) presented only after a week.

Province	Frequency	Percent
Sudurpaschim	15	62.5
No. 5	7	29.2
Karnali	2	8.3
Total	24	100.0

Table II: Province wise distribution

District	Frequency	Percent
Achham	1	4.2
Bajhang	2	8.3
Banke	4	16.7
Bardiya	3	12.5
Dadeldhura	2	8.3
Dailekh	1	4.2
Kailali	7	29.2
Kanchanpur	3	12.5
Surkhet	1	4.2
Total	24	100.0

Table III: District wise distribution

Most of our patients belong to Chhetri caste comprising 45.8%, followed by Madheshi 16.7%. While other patients belong to the Tharu, Brahmin, Magar and Dalit caste as shown in table IV.

Caste	Frequency	Percent
Chhetri	11	45.8%
Madheshi	4	16.7%
Tharu	3	12.5%
Brahmin	3	12.5%
Magar	2	8.3%
Dalit	1	4.2%

Table IV: Caste wise distribution

OGI mostly affect left eye (p=0.011) in this study. Mostly OGI occurred while playing (62.5%); followed by working, writing and road traffic accident. Most frequent injurious agent in this study was wooden stick (50%) followed by knife, pencil, broom, broken glass and scissor etc. most of the eyes with OGI (66.7%) has purely Zone I disease whereas 16.7% has zone I+II, 8.3% has zone II+III, 4.2% has purely zone II and 4.2% has zone I+II+III disease with lid laceration as well. The occurrence of Zone I disease is significantly higher than other (p=0.0001) as shown in table 5.91.7% of OGI were of penetrating type of which 12.5% has retained intraocular foreign body, where as 8.3% were globe rupture. Thus penetrating type is significantly frequent type of OGI (p=0.0001) as shown in table VI. Most of the eyes presented with Grade IV injury (83.3) with the visual acuity of HM to PL, only two cases with grade I while one with grade II and one with grade V. Thus most of the OGI cases were legally blind at the presentation (p=0.0001) as shown in table VII.

ZONE	Frequency	Percent	Valid Percent	Cumulative Percent
I	16	66.7	66.7	66.7
I+II	4	16.7	16.7	83.3
I+II+III + LL	1	4.2	4.2	87.5
II	1	4.2	4.2	91.7
II+III	2	8.3	8.3	100.0
Total	24	100.0	100.0	

Table V: Zone wise distribution of injury

	Frequency	Percent	Valid Percent	Cumulative Percent
A	2	8.3	8.3	8.3
B	19	79.2	79.2	87.5
B+C	3	12.5	12.5	100.0
Total	24	100.0	100.0	

Table VI: Type wise distribution of injury

	Frequency	Percent	Valid Percent	Cumulative Percent
I	2	8.3	8.3	8.3
II	1	4.2	4.2	12.5
IV	20	83.3	83.3	95.8
V	1	4.2	4.2	100.0
Total	24	100.0	100.0	

Table VII: Grade wise distribution of injury

All the cases need surgical intervention. All were of accidental in nature. After surgical repair, on Ultrasonography Brightness scan two cases showed dense vitreous hemorrhage and retinal Detachment whereas one case showed features of traumatic endophthalmitis and were referred for vitreoretinal care. 8(33.3%) cases underwent cataract surgery. Anatomical success was achieved in 22 eyes (91.7%) whereas 2 eyes (8.3%) developed pthysis bulbi. Visual function was improved in 19 eyes (79.2%), not changed in 3 eyes (12.5%) and deteriorate in 2 eyes (8.3%) as depicted in table VIII.

Visual Function	Frequency	Percent	Valid	Cumulative Percent
Improved	19	79.2	79.2	79.2
Deteriorate	2	8.3	8.3	87.5
Stationery	3	12.5	12.5	100.0
Total	24	100.0	100.0	

Table VIII: Visual function

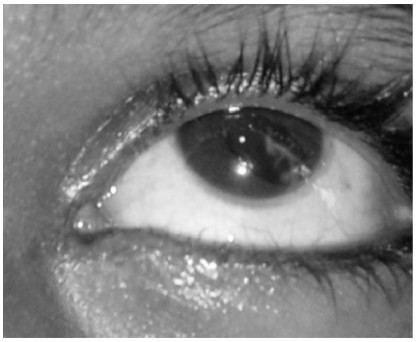


Figure 1: Child with corneal scar after primary repair of corneal laceration

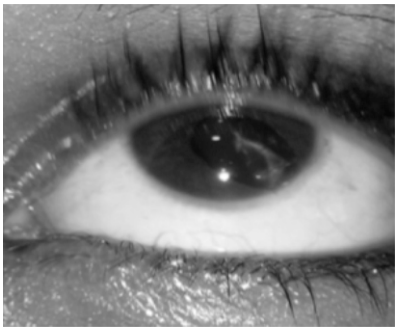


Figure 2: Eye with OGI after primary repair with suture in place and large pupil due to excision of non-viable prolapsed iris

DISCUSSION

This study evaluated the demographical and clinical profile as well as visual and anatomical outcomes after open-globe injury in patients of Midwestern and Farwestern Nepal. 0.4% (n=24) of ophthalmic patient were presented with open globe injury at Nepalgunj Medical College, Nepalgunj. The hospital incidence was 0.016% in a Multispeciality Medical College.

The mean age of our study populations was 10.98±17.1 year. These victims were younger than those that have been reported in other studies[9-12]. Inter-population differences in the culture, lifestyle, mean lifespan, occupation, and socioeconomic status may be the causes of this variability. Another reason may be the unavailability of anesthesiology service in the eye hospitals of this region. Male: female ratio was 3.8:1. Male predominance was shown by most of other studies as well[4, 9-12]. The cause may be male spend more time at outdoors, have risky behavior and are aggressive by nature. Most of our patients were resident of Sudurpaschim Province (62.5%) although the hospital is located in the province no.5. The reason may be this is the nearest referral hospital of Sudurpaschim province and province no.5 has 4 other centers to serve patients of OGI. Again another reason may be poverty and less caring of child by parent in the Sudurpaschim province.

Chhetries were affected mostly (45.8%) by tribe. The reason could be it is the most populated tribe in this region, their more aggressiveness and risk taking behavior. They are also involved in handling weapon as well as in war. Playing was the most common setting of injury (62.5%) as shown by Bhattarai et al[4] whereas workplace was shown by other studies[9-12]. The reason may be our most of patient were children as in the study of Bhattarai et al[4] wooden stick was the most frequent (50%) injurious agent in this study similar to the finding of Bhattarai et al[4] but Yalcin Tok et al[12] showed metal as frequent injurious agent. Left eye involvement was significantly higher than right eye in this study (p=0.011) which is against the finding of earlier study where both eyes were equally affected[9,12]. This finding might be as a result of most of us are right handed and during playing child face each other, where left eye of victim comes in front of right hand of another child. We didn't encounter any case with bilateral OGI.

In our study 66.7% of cases were purely Zone I (i.e. cornea only) disease. Other studies showed lesser percentage of pure zone I disease than present study, despite of being most common type in all studies[9, 11,12]. Surprisingly only one case (4.2%) was detected with pure Zone II disease in our study, which was found in more than 1/3rd of cases in earlier studies[9-12]. We did not found pure Zone II disease in our study. More than one zone involvement was found in 29.1% of our cases in this study; which represents more severe form of OGIs. One case of blast injury has all zone involvement and both lid laceration. Penetrating type is significantly more frequent type of OGI in our study (P= 0.0001). Out of them 12.5% had retained intraocular foreign body. 8.3% of our study cases present with traumatic rupture of eye ball. The reason of this might be trivial mode of injury along with use of small wooden stick and sharp weapon as injuries agent. 83.3% of eyes in this study present with grade IV injury with visual acuity of hand movement (HM) or perception of light (PL). And 4.2% present with grade V injury i.e. VA of no perception of light (NPL).Thus most of eyes with OGI were legally blind at the time of presentation (p=0.0001). This finding is similar to that shown by Bhattarai et al[4].

And Fujikawa et al.[9] In this study only 4.2% eye were present with visual acuity of No perception of light in contrast to this Fujikawa et al[9] had 15% and Han et al[11] had 13.5% of eyes with No Perception of Light(NPL) at presentation , whereas Bhattarai et al didn't have any eye with NPL at presentation. The reason to this may be most of our patient presented with injury during playing. After surgical treatment, visual acuity improved in 79.2% of cases which is comparable to the study of Han et al[11], but higher than study by Bhattarai et al.[4] Such a good functional outcome was due to early surgical repair, use of intra-venous antibiotics and frequent follow up care. Still 12.5% of cases became pthysis bulbi (anatomical failure) in this study which is comparable to the findings of Bhattarai et al[4].

CONCLUSION

Open globe injury (OGI) is the most severe mechanical ocular trauma affecting 0.4% of all ophthalmic patients and 0.016% of all hospital patients. Male Childs of Chhetri tribe are at significantly higher risk of getting injured. Early surgical repair with fine microsurgical instrumentation, use of systemic antibiotics and good postoperative care provide fruitful functional and anatomical outcome in most of the eye with minimizing incidence of sympathetic ophthalmia. Knowing the circumstances of injury, we will be able to formulate preventive measures and there implementation on the society of this blinding injury.

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Visceral Leishmaniasis (Kala-azar) in Nepalgunj Medical College

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ABASTRACT

Background: Visceral leishmaniasis (VL) or Kala-azar is a potentially fatal vector-borne (sand fly phlebotomies spp) zoonotic disease caused by a protozoan parasite, Leishmaniadonovani. Kala-azar remains a public health problem in Nepal. The patient presented with a history of high-grade fever, abdominal distension, anemia, and weight loss. The disease is preventable, but various environmental, socioeconomic, health care and health behavior related variables affect its transmission. **Objective**: Find out the incidence of Kala-azar infection in Nepalgunj medical college. **Method:**ThisHospital based study.Data was collected from April 2018 to August 2018. Blood sample collected and test rk39 performed in laboratory of Nepalgunj Medical College Kohalpur**. Result**: Among 75 patients 16 were diagnosed kala-azar, rk39 positive 14 males and 2 females respectively. It is 12% of total cases**.** Among 16 cases male are 14 and 2 are females. 85.7% male and 12.3% female. Age group between 15-30 years (31.25%), 31-45 years (25%), 46-60 years(18.75%), 61-75 years (12.5%), 76-85 years (12.5%). young people's age group 15-30 years are commonly infected. **Conclusion:** Visceral leishmaniasis(kala-azar) cases are still major health problem in Nepal. There shouldbe regular surveillance research work to be carried out in both epidemic and non-epidemic districts of the country. Mass public health education, to make the people aware about preventive aspects of the disease is important.

Key words: *Epidemiology, leishmaniasis, kala-azar, sandfly*

INTRODUCTION

Nepal borders with Uttar Pradesh and Bihar states of India along the tropical climatic zone that is afflicted by a wide variety of endemic tropical diseases such as Malaria, Kala-azar, and Encephalitis etc. The wet paddy fields, tropical forest, close settlements, free and unrestricted human movement across the bordercontributes to the incidence of these diseases. This paper focuses on the communicable disease Kala-azar (KA); Visceral Leishmaniasis) which threatens almost one quarter of the country's population[1].

In Nepal, VL is primarily a disease of the poorest of the poor[2,3]. These people usually live in the mud houses having cracked walls and damp floors, which constitute excellent condition for attraction and hiding of sand-fly. Moreover, majority of these people sleep outside of their houses during the summer, without bed nets, which is most favorable situation for the sand-fly to bite and transmit the infection. Although VL cases are still being reported at lower rate in Nepal since 1998 but this might have also been due to out-migration to the Middle-East counties for employment and carry back infection into Nepal[4,5].

In Nepal, VL primarily manifests as fever, anaemia, hepato and splenomegaly, resulting in death if it is untreated. The diagnosis of VL in Nepal is largely based on clinical signs and symptoms, usually combined with positive formal-gel test[6]. At present, the most widely used immunological tests to detect VL in Nepal are the nitrocellulose dipstick test that detects antibody to the recombinant amastigote antigen K39 (rK39), direct agglutination test, and latex agglutination test[7].

His Majesty's Government of Nepal (HMG/N) has acknowledged the necessity of maintaining a healthy population as a means of poverty alleviation and in this regard, it has initiated measures for the control of KA and abatement of its disastrous effects on the households since the first KA case was identified in the country in 1980[8]. Furthermore, it has been felt that simply addressing the disease from and epidemiological level has been insufficient, and that effective programs should take into account both the socio-economic and behavioral factors of the KA susceptible household[9].

VL cases may be underestimated in these regions. Treatment failure with pentavalent antimonial (sodium stibogluconate [SSG]) has been reported in the recent years in Nepal and as a result, a single dose liposomal Amphotericin B is currently. recommended by National Program of Nepal for kala-azar treatment. Not only is the emergence and spread of drug resistance troubling, but VL cases have been recently reported from the regions that were previously considered to be non-endemic in Nepal.

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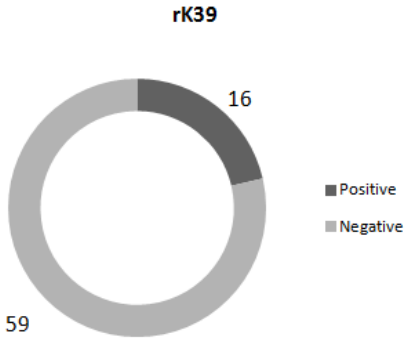
MATERIAL AND METHODS

This is a hospital based cross sectional study done in Nepalgunj Medical College Teaching Hospital Kohalpur. Data was collected from April 2018 to August 2018. Those patients who are admitted in medical wards with signs and symptoms of Kala-azar, having fever, anemia more than month. Sample was collected from 15 years to 85 years of patients. Collected blood sample was tested in laboratory of Nepalgunj Medical College Kohalpur. Rapid dipstick (rk39 test) was performed in lab. Data is analyzed by SPSS 20 version.

Among the available serological diagnosis of VL, only the immunochromatographic rK39 assay can be considered a point of care test for field application. On the Indian subcontinent these rK39 RDTs from different companies performed well, with high sensitivity ranging from 92.8% to 100% and high specificity ranging from 99.2% to 100% (Chappuius et al., 2006; Cunningham et al. 2012). rK39 dipstick tests are easy to perfos.

RESULTS

Among suspected cases of 75, 59 are found negative and 16 cases found infected from Kala-azar (rk39 test positive). It accounts 12% of total cases.



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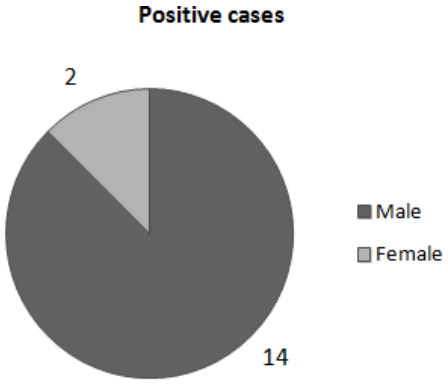

Figure 2: Sex distribution

Among 16 cases male are 14 and Female 2. 85.7% male and 12.3 % female. Males are more affected than females.

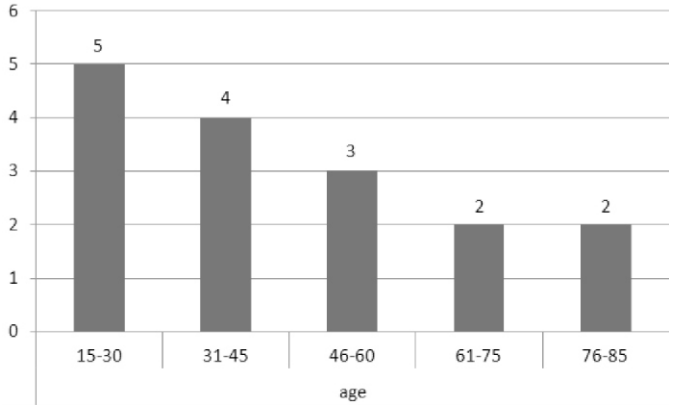

Figure 3: Age distribution

In this study young peoples are commonly affected then elderly. Age group between 15-30 years (31.25%), 31-45 years (25%), 46-60 years (18.75%), 61-75 years(12.5%), 76-85 years (12.5%). young people's age group 15-30 years are commonly infected.

DISCUSSION

Visceral leishmaniasis (VL) is still posing a major public health threat in terai belt of Nepal, but decreasing in trends since last few years. In my study among suspected cases of 75, 59 are found negative and 16 cases found infected from Kala-azar (rk39 test positive). It accounts 12% of total cases.

Prevalence of visceral leishmaniasis in Saptari district during last five years showed the declining trend of VL cases from the year 2007 to 2012. Highest prevalence was recorded in the year 2007 with prevalence of 31.5% VL cases in Saptari district, which is reduced by 3.5% in 2012[10]. Of the total eighteen suspected patients with Kala-azar were tested by aldehyde and bone-marrow methods. Among them, 33.33% (6/18) were positive for aldehyde test only and 83.3% (5/6) for bone-marrow in terai region of Nepal.[11]

In my study among 16 cases male are 14 and 2 are females. 85.7% male and 12.3% female. Males are more affected than females. The CFR in male was 13% and 11% during 1996 and 1997 and in female it was 8% and 13% respectively[12]. The identified KA HH had a total population of 451 with 243 male and 208 females, 53.8% male and 46.1% females, Sharma BP et al[13]. In contrast to another study of Bihar where majority (97.0%) of the respondents were males[14] in the current study majority (50.5%) of the respondents were female, however it is supported by the study conducted in South Gondar where majority of the respondents were female 60.7%[15].

In our study young peoples are commonly affected then elderly. Age group between 15-30 years (31.25%), 31-45 years (25%), 46-60 years (18.75%), 61-75 years (12.5%), 76-85 years (12.5%). Young people's age group 15-30 years are commonly infected.

In the study, majority (35.2%) of the respondents were 21-30 years age, which is consistent with the findings of study of Bihar where 26.7% were between 25-34 years[16]. Similar to the work by Ranjan and others, those individuals 21 years and older accounted for the highest percentage of cases (42%), whereas the current study also had 40% of the total cases in children ages 0–10 years[17].

CONCLUSION

Visceral leishmaniasis(Kala-azar) first appeared in the Eastern terai parts of Nepal during 1982. Due to proper vector control and effective treatment incidence of Kala-azar decreasing since last few years. But due to lack of easy drug availability cases of kala-azar can be seen in many parts of Nepal most commonly terai region of Nepal. Regular epidemiological surveillance in all terai districts is warranted in view of migration of Kala-azar cases from endemic districts coupled with the presence of high vector density, animal reservoirs ambient environmental and ecological factors, susceptible population and absence of regular insecticidal spraying in Nepal by the concerned institutions.

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ORIGINAL ARTICLE

Factors Associated with Relapse in Men with Alcohol Dependence Versus Opioid Dependence: A Comparative Study From Western Nepal

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ABSTRACT

Introduction: Drug abuse is a worldwide problem that affects millions of people and Nepal is no exception. Relapse is a major problem in management of substance use disorder. Hence it becomes important to understand the factors contributing to relapse in order to ensure relapse prevention. This study was done with the aim to compare clinico-demographic correlates of relapse in alcohol dependence and opioid dependence and also to know the reasons for relapse in both groups. **Method:** This is a cross-sectional comparative study with the sample collected from three different rehabilitation centers from Nepalgunj. The sample include those male clients with alcohol dependence and opioid dependence who had relapsed at least once in past after some period of abstinence. Total of 80 male subjects i.e. 40 in each group were enrolled in the study. Structured questionnaire was developed by the researcher and was used to collect the data from respondents. The data were statistically analyzed. **Result:** Some clinic-demographic disparity was observed in both groups. Alcohol group had more subjects from Bahun and Chettri caste, longer total duration of illness whereas opioid group had more Muslims, younger ageand greater number of middle socio-economic clients, more number of substances used in past and higher prevalence of criminal act. The commonest reason for relapse in both groups found to be desire for positive mood. Peer pressure, social or family problems, craving, negative mood state and concentration difficulties were other factors found to be contributing to relapse. Narcotic Anonymous was the most preferred modality of treatment opted by both groups in past in order to quit substance whereas only 22.5% of subjects consulted to doctor. **Conclusion:** Social determinants play a critical role in substance use and its relapse and should be addressed alongside physical and psychological determinants for better outcome. Common factors play role for relapse in both groups. Study warrants increased need of mental health awareness programme among substance abusers.

Key words: *Alcohol, dependence, Nepal, opioid, relapse*

INTRODUCTION

As per ICD-10, a cluster of physiological, behavioral, and cognitive phenomena in which the use of a substance or a class of substances takes on a much higher priority for a given individual than other behaviors that once had greater value is called dependence syndrome[1].

Drug abuse is a global problem that affects millions of people and Nepal is no exception. Globally, it is estimated that in 2012, some 243 million people corresponding to some 5.2 percent of the world population aged 15-64 had used an illicit drugand men are two to three times more likely than women to have used an illicit substance[2].

Drugs such as cannabis and alcohol were traditionally used in Nepal for centuries. Use of these drugs as part of the cultural norms did not create major social problems during that period. However, the types of drug used have been shifted since the last few decades from cannabis to synthetic opiates and chemical substances[3]. In Nepal, apart from alcohol, the major drugs of abuse are cannabis, codeine-containing cough syrup, nitrazepam tablets, buprenorphine injections and heroin (usually smoked, rarely injected). The commonest sources of drugs are other drug-using friends, cross-border supplies from India or medicine shops[4].

Relapse i.e. return to previous pattern of substance use, is a major problem in management of substance use disorder.Management of substance use disorder is riddled with multiple relapses. Research studies show that 65–70% of abstinent alcohol dependence subjects relapse within 1 year, especially within the first 3 months of abstinence[5,6]. Studies have reported alarming rates of relapse with opioid addiction compared to other drugs, with one study reporting a relapse rate of up to 91% in opioid addicts, indicating that the risk for relapse could be higher for opioid addiction than it is for other drug addiction[7]. Hence it becomes important to understand the factors contributing to relapse in order to ensure relapse prevention. The aim of my study was to compare clinico-demographic correlates of relapse in alcohol dependence and opioid dependence and also to know the reasons for relapse in both groups.

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MATERIAL AND METHODS

This is a cross-sectional comparative study. Sample for the study was collected from three different rehabilitation centers from Nepalgunj. The sample include those male clients with alcohol dependence and opioid dependence who had relapsed at least once in past after some period of abstinence. Total of 80 male subjects i.e. 40 in each group were enrolled in the study. Structured questionnaire was developed by the researcher and was used to collect the data from respondents during the study period of 2 weeks i.e. from 20th September to 4th October, 2018. Analysis of data was done by SPSS version 20.

RESULT

Socio-demographic profile of respondents shows that Bahun and Chettri were major caste in both groups with slight predominance in alcohol dependence group. Muslims were more in opioid dependence group. The findings were statistically significant. The most common age in both groups was 19 to 30 years with younger in opioid group compared to alcohol group but overall pattern appeared statistically insignificant.

Education, occupation and marital status were almost comparable in both groups. Most of the respondents belonged to middle socio-economic status in both group with greater number in opioid group i.e. 95% where as it was 80% in alcohol group. Duration of illness was significantly longer with mean 9.988± 6.608 years in alcohol dependence group in comparison to 5.925±4.303 years in opioid dependence group. Total number of substances used in opioid group was significantly more with mean 3.15±1.578 than alcohol group. Number of relapses and longest period of abstinence was almost similar in both groups.

Caste	Alcohol Dependence N= 40 (%)	Opioid Dependence N= 40 (%)	P value
Bahun/ Chetri	25 (62.5)	17 (42.5)	0.042*
Dalit	6 (15)	4 (10)	
Janajati	7 (17.5)	8 (20)	
Muslim	2 (5)	11 (27.5)	
Age Group (years)			
< 18	5 (12.5)	6 (15)	0.055
19- 30	18(45)	28 (70)	
31- 45	13(32.5)	4 (12.5)	
>45	4 (10)	1 (2.5)	
Education			
Illeterate	3 (7.5)	6 (15)	0.461
Primary	13 (32.5)	7 (17.5)	
Metriculation	10 (25)	14 (35)	
Upto 12th	10 (25)	10 (25)	
Graduation And above	4 (10)	3 (7.5)	
Occupation			
Unemployed	11 (27.5)	13 (32.5)	0.513
Student	6 (15)	10 (25)	
Business	16 (40)	13 (32.5)	
Service holder	7 (17.5)	4 (10)	
Marital status			
Unmarried	17 (42.5)	21 (52.5)	0.649
Married	20 (50)	17 (42.5)	
Divorced or separated	3 (7.5)	2 (5)	
Socio-economic status			
Low	8 (20)	2 (5)	0.043*
Middle	32 (80)	38 (95)	

*Significant (P<0.05)

Table I: Socio-demographic profile of both groups

	Alcohol Dependence N= 40 (%)	Opioid Dependence N= 40 (%)	P value
Duration of Illness (years)	9.988± 6.608	5.925±4.303	0.002*
Number of relapses	3.90± 3.136	3.10± 2.351	0.201
Longest period of abstinence (days)	275.05±393.910	264.05± 385.999	0.900
Total number of substances used during illness period	2.00± 1.240	3.15± 1.578	0.001*

*Significant (P<0.05), SD- Standard Deviation

Table II: Substance use history in both the groups

Family history of substance use	Alcohol Dependence N= 40 (%)	Opioid Dependence N= 40 (%)	P value
Yes	15 (37.5)	10 (25)	0.228
No	25 (62.5)	30 (75)	
History of criminal record			
Yes	12 (30)	24 (60)	0.007*
No	28 (70)	16 (40)	

*Significant (P<0.05)

Table III: Additional substance use history in both groups

	Alcohol Dependence N= 40 (%)	Opioid Dependence N= 40 (%)	P value
Negative mood state	9 (22.5)	7 (17.5)	
Desire for positive mood	22 (55)	21 (52.5)	
Social or family problems	14 (35)	11 (27.5)	
External or peer pressure to use	12 (30)	19 (47.5)	
Sleep problems	6 (15)	7 ((17.5)	
Craving/ Urge	10 (25)	14 (35)	
Concentration difficulties	10 (25)	6 (15)	
Lack of insight	2 (5)	8 (20)	

*Multiple Responses

Table IV: Reasons for relapse*

	Alcohol Dependence	Opioid Dependence
	N= 40 (%)	**N= 40 (%)**
Doctor	9 (22.5)	9 (22.5)
NA concept	33 (82.5)	27 (67.5)
Herbal medicines	6 (15)	3 (7.5)

*Multiple Responses

Table V: Modality of treatment receivedby the subjects to quit substance in past*

Most of the subjects cited 2 or 3 reasons for relapse; the most common reason in both groups found to be desire for positive mood. Peer pressure, social or family problems, craving, negative mood state and concentration difficulties were other factors commonly found to be attributed to relapse in both groups. Narcotic Anonymous was the most preferred modality of treatment opted by both groups in past in order to quit substance and only 22.5% of subjects consulted to doctor.

DISCUSSION

Socio-demographic profile of this study reveals that upper caste i.e. Bahun and Chettri were most common caste in both groups with slight predominance in alcohol dependence group whereas Muslims were significantly more in opioid dependence group than alcohol dependence group. Similar finding was reported by Pathak DC, who did a study in Surkhet district and found that 55.2% of drug abuser belonged to Bahun and Chhetri caste[8]. Muslim being more in opioid group than alcohol group could be because of religious prohibition about use of alcohol among them.

Study reveals that about 85% of respondents in opioid group were below 30 years of age whereas it was only 57.5% in alcohol group. The earlier age for development of a dependence pattern was nearly significant in the opioid group is consistent with other studies in the literature[9,10]. It could be attributable to the highly addictive properties of opioid. Alcohol dependence is slow to develop. Education, occupation and marital status were almost comparable in both groups. Most of the respondents belonged to middle socio-economic status in both group with greater number in opioid group i.e. 95% where as it was 80% in alcohol group. Since these substances are costly to afford for chronic use especially opioid, the problem appeared more prevalent in middle socio-economic groups than low socio-economic group.

The duration of illness in the alcohol group was significantly longer than the opioid group and the number of substances used during illness period was found to be more in opioid group. Similar finding was observed by Kadam M et al.[9] Longer duration of illness at presentation in alcohol use disorder is due to later development of social and occupational dysfunction as compared to opioid. Poly substance use is common in opioid dependence. Aich TK et.al found in his study that 73.4% of opioid abusers were poly-substance users[11].

Impulsivity, novelty seeking, past gateway drug use, or temporary switch to a cheaper drug are possible reasons of high prevalence of poly-substance use in opioid group. No significant differences in number of relapses and duration of longest abstinence in both groups were seen in my study. This finding is in accordance with a previous study[9].

Higher proportion of candidates in opioid group had history of criminal act in past. Similar finding was observed in another study[9]. Drug use causes crime either through the need to fund drug use through economic necessity[12] or because of psychopharmacological changes precipitated by drug ingestion[13,14].

The most common reason for relapse in both groups found to be desire for positive mood. Peer pressure, social or family problems, craving, negative mood state and concentration difficulties were other factors commonly found to be contributing to relapse in both groups. Similar results were observed in some previous studies[9,15,16].

Narcotic Anonymous was the most preferred modality of treatment opted by both groups in past in order to quit substance and only 22.5% of subjects consulted to doctor. This finding is similar with a previous study done at Dharan where Sapkota S. et.al. reported that 68.1% of clients of drug addiction were treated by NA concept whereas only 24% respondents received treatment with medicine[15]. Some of the reasons for not consulting doctor in both groups could be due to inability to afford the cost of care, believing that the problem could be handled without treatment, not knowing where to go for services, lack of awareness and stigma associated with it.

CONCLUSION

Some disparity in clinico-demographic profile was observed in both groups. Alcohol group had more subjects from Bahun and Chettri caste, longer total duration of illness whereas opioid group had more Muslim subjects, younger age, more number of middle socio-economic clients, more number of substances used during illness period and higher prevalence of criminal act. Such disparities indicate that social determinants play a critical role in substance use and its relapse and should be addressed alongside physical and psychological determinants.

The commonest reason for relapse in both groups found to be desire for positive mood. Peer pressure, social or family problems, craving, negative mood state and concentration difficulties were other factors found to be contributing to relapse. This indicates common reasons for relapse in both groups. Appropriate measures regarding these factors should be taken during management in order to prevent relapse. Narcotic Anonymous was the most preferred modality of treatment opted by both groups in past in order to quit substance and only 22.5% of subjects consulted to doctor. This warrants increased need of mental health awareness programme among substance abusers.

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Assessment of Risk Factors in Hypertensive Disorder During Pregnancy: Hospital Based (KAP) Knowledge, Attitude and Practice Survey. A Key for Preventive Approach

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ABSTRACT

Background: Hypertensive disorder (HDP) during pregnancy is a group of conditions featuring with high blood pressure that may lead to feto-maternal morbidity and mortality, particularly in developing countries. **Aims and Objectives:** To assess relationship between risk factor of hypertensive disorder during pregnancy, their self care knowledge and practice to prevent and control hypertension. **Materials And Method:** A cross-sectional study of 93 registered, pregnant women belonging to reproductive age group, after 20th gestation age completed, who came for ANC checkup or admitted for hypertension management or prior to delivery in Nepalgunj medical college and teaching hospital under department of Obstetrics and Gynecology from 15th June to 15th December 2018. Blood pressure was measured for each women at booking or at subsequent visits. Urine test for protein albumin was performed if blood pressure was elevated. Data was entered and analysis was completed using SPSS package version 20. **Results:** The overall prevalence of hypertensive disorder during pregnancy was 2.85% among all deliveries. Pre -eclampsia accounted 36% of the cases followed by eclampsia 18%. Gestational hypertension was 21%, pregnancy induced hypertension was 20% and chronic hypertension was only 5% in study population. **Conclusion:** Knowledge and attitude regarding lack of exercise, low salt diet, obesity and lack of rest were poor contributory risk factors. It is recommended that all pregnant women must develop knowledge about associated risk factors and ensure the application of behavioral change practices to control and prevent hypertensive disorder during pregnancy.

Key words: *Blood pressure, hypertension, HDP, pregnancy, self care knowledge*

INTRODUCTION

Pregnancy, also known as "gestation", a state of carrying a fetus in women's womb during period of reproductive cycle[1]. It is one of the joyous moment for every womanhood in natural phenomenal sequence of their life. But this art of physiological changes, however, may get distorted due to imbalance between pregnancy and their associated risk factors. Hypertensive disorder during pregnancy is one of the major complications, putting both mother and conceptus health at sake.

Burden of diseases

Everyday 830 women, approximately die from preventable causes related to pregnancy and child birth. Almost all 99% of all maternal deaths occur in developing countries, residing in rural areas and among poorer communities. Being motherhood is challenging and may associated with ill health and even deaths[2].

In developed countries, 16% of maternal deaths due to hypertensive disorders. One out of third of all maternal deaths are from hypertensive disorders and young female are 3-fold increased at risk[3].

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Pregnancy-induced hypertension

It occurs in about 5-8% of all pregnancies. Although the cause of PIH is unknown, certain factors are associated to increase the risk of PIH, such as young women with a first pregnancy, pregnant women younger than 20 years and those older than 40 years, women with multiple fetuses, gestational diabetics, pregnant women with preexisting hypertension or previous episodes of preeclampsia or PIH and pregnant women with preexisting renal disease[4].

Gestational hypertention

High BP develops after week 20 in pregnancy and goes away after delivery.

Pre-eclampsia

This is also one of the serious major condition after 20th week of pregnancy, affecting 2-8% of all pregnancies. Gestation hypertension and PIH may progress later on as severe pre-eclampsia. Increase systolic blood pressure 140mmhgor above and diastolic pressure 90mmhg or above along with raised protein in the urine is the diagnostic feature for pre-eclampsia which can lead to serious complications for both mom and baby if not treated quickly[5]. Obesity has been associated with a 2-4 fold increased risk of developing pre-eclampsia in different populations[6]. It contributes almost 70% of maternal and perinatal morbidity and mortality rate[3].

Eclampsia

Eclampsia is the onset of seizures (convulsions) in a woman with pre-eclampsia occurring before, during, or after delivery. Most often it is during the second half of pregnancy. The

seizures are of the - tonicclonic type and typically last about a minute. Following the seizure there is typically either a period of confusion or coma[7].

Chronic hypertension

BP ≥ 140 mmHg systolic or 90 mmHg diastolic prior to pregnancy or before 20 weeks gestation Persists >12 weeks postpartum[5].

Degree of hypertension

Blood pressure category	Systolic mmhg (upper number)		Diastolic mmhg (lower number)
Normal	< 120	And	< 80
Elevated	120 - 129	And	< 80
High blood pressure (Hypertensive stage I)	130 -139	or	80 – 89
High blood pressure (Hypertensive stage II)	140 or higher	Or	90 or higher
Hypertensive crisis (consult your Doctor immediately)	Higher than 180	And/Or	Higher than 120

Blood pressure categories

Guideline for blood pressure classification according JNC 8 blood pressure[8] (American Heart Association And American Stroke Association)

Self-care knowledge

In this study self-care knowledge refers to range of activities that pregnant women must have self awareness to perform healthy life style or adhering to balance diet and medication, exercising, symptoms management and taking rest. Self-care knowledge on hypertension is needed in order to change behavior and practices to be maintained their life style for controlling blood pressure[4].

General measurements to prevent hypertensive disorder during pregnancy

- Low salt diet and keep body hydrate by drink at least eight glasses of water every day.
- Increase amount of protein diet, leafy green vegetables and decrease amount of junk food, fried food.
- Avoid drinking alcohol and beverages containing caffeine.
- Avoid smoking.
- Get enough sleep and plenty of rest.
- Increase physical activity or get regular exercises.
- Timely consult Doctor and get prescribed medication[9]

Assessment of BMI

BMI was categorized according to WHO definitions as underweight <18.5, normal weight 18.5-24.9, overweight 25.0-29.9, and obese ≥ 30[10]**.** It had been great impact in rise in blood pressure by 2-4 fold due to obesity during pregnancy.[11]

OBJECTIVES OF THE STUDY

- To assess factors effecting hypertension and self care knowledge among pregnant women regarding hypertension.
- To study the relationship between self care knowledge and preventive measures taken with hypertension among pregnant women.

MATERIAL AND METHODS

This is cross sectional hospital based study carried out from 15th June 2018 to 15th December 2018 on the basis of knowledge, attitude and preventive practices of hypertensive disorder on women who registered in Obstetric/gynaecological department of Nepalgunj medical college and teaching hospital, Kohalpur, banke. The study population includes pregnant women between reproductive age group of 15-49 years who had completed 20th weeks of gestation and admitted for hypertension management or prior to delivery. Non-probability convenient sampling method was applied on the basis of exclusion and inclusion criteria. Pretested, semi-structured questionnaire was designed and interviewed with respondents. It was also given and asked to the visitor of patient in case of severe toxemia of pregnant women. Based on study done in BPKIHS, Nepal, considering 27.1% as prevalence of hypertensive disorder during pregnancy and using power 80%, the study sample size was 93[16]. Data were sorted, scrutinized and then analyzed in excel, SPSS version 20.0 using descriptive statistics, frequency, significance level less than 0.05 and correlation in linear regression models. The open ended questions were grouped and categorized. Verbal consent was taken and assured them for anonymity and confidentiality. The article was finalized for study after being satisfied and ethically considered by Institutional review committee of Nepalgunj Medical College Teaching Hospital (NGMCTH), Kohalpur.

RESULTS

During the study period, incidence proportion of pre eclampsia (36%) was found to be the major hypertensive disorder among study population as shown in figure no. 1. Similarly table I Shows that age distribution for HDP comprised maximum (57%) in 20-29 years whereas minimum (8.6%) in 40-49 years.

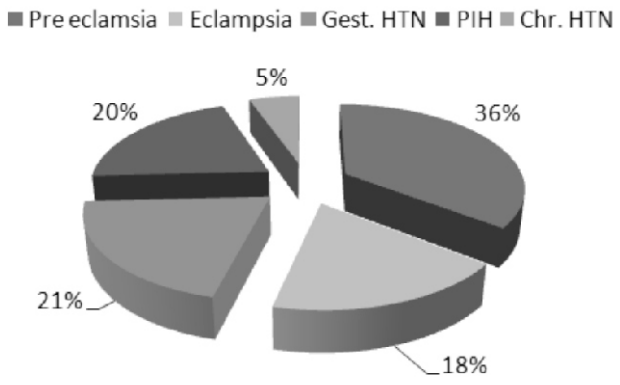

Figure 1

Reproductive age group	Frequency	(N)%
15 – 19	12	12.95
20 – 29	53	57.0
30 – 39	20	21.5
40 – 49	8	8.6

Table no.I

It was also observed that residential distribution was slightly higher in urban for hypertensive disorder during pregnancy, i.e 51.65% from urban population and 48.40% from rural population which seemed to be linked with confounding potentials (high carb fat diet, high intake of salt, sedentary life style, socioeconomic status etc.) responsible for rise in blood pressure in pregnant women belonging to urban area.

Table II and III shows that reproductive attributes were not significant associations although nulii parity and third trimester had greater chance of developing hypertension during pregnancy. It was observed that 41 and 29 respondents were categorized as obese and overweight respectively whereas only 18 and 5 respondents were belonged to normal and underweight respectively among total population.

Figure 2. shows that 48% pregnant women were unaware about cause of high BP whereas 37% and 15% of women agreed that lack of exercise and high salt diet respectively were major cause of rise in BP during pregnancy. These risk factors contributed to be highly significant relationship among pregnant women in the study population.

Figure 2: Reason behind high blood pressure in total population

Lack of exercise
Total agreed pregnant women = 26
Actual followers yes = 10
no = 16

High salt diet
Total agreed pregnant women = 11
Actual followers yes = 5
no = 6

According to figure no.3, 32.3% women were agreed that they had knowledge ontaking low salt diet while other were taking normal as well as high salt diet and found to be highly significant risk factor for rise in blood pressure. Similarly, only 14.0% were aware of doing regular exercise while rests of 86.0% were not doing any exercise.

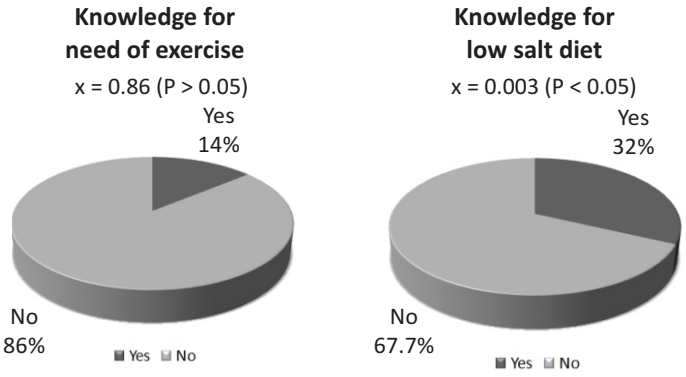

Figure 3: Association between knowledge and practice among total population

DISCUSSION

The purpose of study was to find out risk factors influencing hypertensive disorder during pregnancy and relationship between self care knowledge of pregnant women and hypertension control. Present study showed that hypertensive disorder during pregnancy comprised of majority of age group at range of 20 to 29 years with prevalence of HDP was 2.85% while study done in BPKIHS, Dharan, Nepal, had prevalence for

Variables	BMI				Diet	
	Obese	Overweight	Normal	Underweight	Vegetarian	Mixed
N (%)	41(33.3%)	29(39.1%)	18(31.2%)	5(5.4%)	21(23%)	72(77%)
P value	0.010				0.000	

Table no. II

Variables	ANC Visit		Trimester		Parity	
	Booked	Unbooked	2nd	3rd	Nulli	Multi
N (%)	50(54%)	44(46%)	32(34.4%)	61(65.6%)	57(61.3%)	36(38.7%)
P value	0.001		0.26		0.50	

Table no. II

HDP was 27.1%[12]. According to Ethiopian journal of health science, incidence hypertension during pregnancy increases with age and parity and multiple pregnancies where majority of hypertensive disorder 83 (52.5%) were range at 25 – 34 years[13]. Pregnant women (51.65%) residing urban area were opt to have greater tendency for developing hypertension than pregnant women belonged to rural area (48.40%). Most of the pregnant women were nulliparous 61.3% and showed to be statistically significant association with severity of disease (p= 0.001) which is higher than the report of 44.1% from the university of calabar, south Nigeria[14].

According to the reason behind rise in blood pressure, 37% and 15% of pregnant women knew that lack of exercise and high salt diet respectively were the major contribution for rise in blood pressure. However, 48% of respondents among total population still had no idea about rise in Blood pressure during pregnancy. Present study revealed similar background with the study from Bindura district, University of health science, Zimbabwe where 55.1% respondents demonstrated knowledge of high salt diet contributes HDP. This relationship had statistically highly significant association with HDP in present study. Therefore, continue practice on danger of salt consumption and lack of exercise as a predisposing factor for HDP in some susceptible pregnant women is necessary to reduce incidence of hypertension during pregnancy[15].

There was a huge gap between self care knowledge and preventive practices among pregnant women. Only 14% of the pregnant women had knowledge that exercise during pregnancy is necessary to prevent high blood pressure and despite of those who had knowledge about exercise were not following it on regular basis. Meanwhile, only 32% of pregnant women were aware of taking low salt diet among total population who agreed that high salt intake was major cause of rise in blood pressure. A study from Banaras Hindu University reflected similar result with present study in regards of self care knowledge and practices to prevent HDP[10].

Pregnant women with less knowledge of risk factors such as obesity and the need to reduce weight further inquiries into the women's perceptions on weight gain and obesity. The findings would clearly guide on any misconceptions while strengthening self care knowledge in this regard.

CONCLUSION

Hypertensive disorder during pregnancy is one of the major complication following maternal and neonatal mortality and morbidity. Urban residence with high socio-economic class, rural residence with marginalized caste, illiteracy, nulli parity, high BMI level, lack of exercise, consumption of unhealthy and high salt diet were identifiable independent risk factors in this study. The major risk factor of rise in blood pressure was lack of exercise and high salt diet for the reason behind rise in blood pressure. Despite of having knowledge about risk factors to prevent and control hypertension in some pregnant women, they were still reluctant to practice their knowledge in day to day basis. So, understanding associated risk factor and developing self care knowledge regarding hypertension during pregnancy is a mandatory tool for controlling high blood pressure. Considering the findings observed in present study, to educate the pregnant women on identifying risk factors of HDP and also motivate them to take preventive measures as a compulsory requirement.

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Study of Second and Fourth Digit Lengths and Their Ratios With Physical Attributes in Nepali Population

Satyal B[1], Poudel A[2]

ABSTRACT

Introduction: The ratio of the lengths of the index and the ring finger (2D:4D ratio) is generally different between men and women. A number of studies have shown a correlation between the 2D:4D digit ratio and various physical and behavioral traits. The aim of the present study is to investigate the association of the index (2nd) and ring (4th) digit ratios with some physical traits in Nepali population. **Material & Method**: 200 students (100 males and 100 females) between ages of 18 years and above were randomly selected with exclusion of those with hand deformities. The digit lengths were measured from the basal crease to the tips using vernier calipers. The 2D:4D ratios were determined for each subject while height and weight were used to calculate the body mass index and data analyzed. The study was conducted between January 2018 to November 2018. **Result:** The result of the anthropometric study of the differences in index (2D) and ring (4D) and their ratios shows that there was a significant difference between the length of index finger (2D), ring finger (4D) and the ratios of right hand's 2D:4D in both males and females. There was a positive correlation between the second digit length and Height and weight in males and females both on right and left sides. The 2D:4D ratio for both left and right hand did not show any positive correlation with height, weight or BMI of an individual.

Key words: *2D:4D, BMI*

INTRODUCTION

The digit ratio is the ratio of the lengths of different digits typically measured from the midpoint of bottom crease (where the digit joins the hand) to the tip of the digit.[1] The ratio of second to fourth digit lengths has been highlighted as a potentially useful phenotypic marker of steroid exposure in utero in vertebrates.[2] In humans, the evidence for this hypothesis comes from studies showing that 2D:4D is sexually dimorphic with lower ratios among males than females from the end of the first trimester of fetal development and remain relatively stable across the life span.[3,4,5,6,7,8] It exhibits a sexually dimorphic pattern. It is usually measured from the midpoint of the most proximal crease (at the junction of the finger with hand) to the tip of the finger.

Various methods have been used to determine 2D:4D ratio, including X-rays photocopies and scanned images.[9,10,11] The aim of the present study is to investigate the association of the index (2nd) and ring (4th) digit ratios with some physical traits in Nepali population.

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METHOD

The population of study consisted of 100 males and 100 female students of Nepalgunj Medical College, Chisapani. The study was conducted between January 2018 to November 2018. Convenient random sampling method was used to obtain measurements of index and ring finger with the exclusion criteria that the participants do not have any physical anomalies of fingers or had any history of fracture or dislocation of index, middle and ring fingers .The middle finger was used as the standard reference. At the proximal base of index and ring fingers there were creases. In most of the participants, index finger had only one crease and ring finger a band of creases. The most proximal crease was chosen as a point. With the help Vernier Calipers the length of second and fourth digits were measured. All measurements were made carefully with the digits fully extended.

The data collected were used to obtain 2D:4D ratios by dividing 2D by 4D lengths. Data was expressed as mean ± standard deviation. Student t test was used to determine the level of significance. The relationship between the parameters studied was established using Pearson Correlation to establish the strength of relationship between the lengths of second and fourth digits (2D and 4D), the digit ratios and other anthropometric variables in both sexes.

RESULTS

The result of the anthropometric study of the differences in index (2D) and ring (4D) and their ratios shows that there was a significant difference between the length of index finger (2D), ring finger (4D) and the ratios of right hand's 2D:4D in both males and females. The mean values in males were

7.17,7.25,0.98 while in females were 6.70,6.67,1.01 for the 2D,4D lengths and ratios of right hand respectively. The mean values in males were 7.15, 7.16, and 0.99 and in females were 6.62, 6.63 and 1.00 for the 2D, 4D lengths and their ratios for left hand respectively. The mean values of lengths of index finger (2D), ring finger (4D) and R2D:R4D between males and females were statistically significant ($p<0.05$) as shown in Table I. L2D:L4D ratio was not significantly different between males and females.

Results shows that mean height of males exceeded the mean height of females and the mean weight of males exceeded the mean weight of females .Mean BMI of males also exceeded that of females (Table II).

Correlation matrix for the second and fourth digit lengths and the anthropometric variables were done to analyze any association between the digit lengths and the physical attributes. There was a positive correlation between the second digit length and Height and weight in males and females both on right and left sides (Table III).

Weight and second digit length also showed correlation in case of females. There was also a strong correlation between the second digit length and height in both in males and females bilaterally (Table III). Similarly both height and weight showed correlation with fourth digit length in males and females bilaterally (Table IV).

Table V. shows the correlation matrix of R2D:4D with the anthropometric parameters. There was no positive correlation between the R2D:4D and height, weight and BMI. Table VI shows no positive correlation between L2D:4D and height, weight and BMI.

Parameters	Males	Females	t-value	Sig. level
	Mean ± SD	Mean ± SD		
R2D	7.17 ± 0.42	6.70 ± 0.41	7.90	p<0.001
R4D	7.25 ± 0.40	6.67 ± 0.41	10.03	p<0.001
L2D	7.15 ± 0.35	6.62 ± 0.37	10.30	p<0.001
L4D	7.16 ± 0.39	6.63 ± 0.38	9.83	p<0.001
R2D:4D	0.98 ± 0.36	1.01 ± 0.04	2.85	p<0.05
L2D:4D	0.99 ± 0.42	1.00 ± 0.04	0.11	p>0.05

Table I: Mean ±standard deviation of 2D, 4D lengths and the ratios of 2D:4D in males and females

Parameters	Sex	Mean ± SD	Minimum	Maximum	N
Height	Male	170.84 ± 5.93	156.80	187	100
	Female	158.51 ± 7.43	139	172	100
Weight	Male	63.96 ± 11.70	41	100	100
	Female	56.50 ± 8.52	39	72	100
BMI	Male	21.83 ± 3.26	16.31	31.97	100
	Female	22.44 ± 2.66	16.56	30.30	100

Table II: General statistics of the anthropometric parameters used

Parameters	Male				Female			
	R2D	P Value	L2D	P value	R2D	P Value	L2D	P value
Height	0.543**	0	0.433**	0	0.639**	0	0.497**	0
Weight	0.380	0	0.308**	0.002	0.370**	0	0.254*	0.011
BMI	0.211*	0.035	0.176	0.080	-0.036	0.721	-0.060	0.552

** Correlation is significant at the 0.01 level; * Correlation is significant at the 0.05 level

Table III: Correlation matrix of second digit length with anthropometric variables

Parameters	Male				Female			
	R4D	P Value	L4D	P value	R4D	P Value	L4D	P value
Height	0.535**	0	0.483**	0	0.514**	0	0.494**	0
Weight	0.356**	0	0.311**	0.002	0.287**	0	0.215*	0.032
BMI	0.189	0.059	0.159	0.115	-0.042	0.676	-0.106	0.295

** Correlation is significant at the 0.01 level; * Correlation is significant at the 0.05 level

Table IV: Correlation matrix of fourth digit length with anthropometric variables

Parameters	Male (R2D:4D)		Female (R2D:4D)	
	Pearson correlation coefficient r value	P value	Pearson correlation coefficient r value	P value
Height	0.069	0.498	0.170	0.090
Weight	0.081	0.422	0.104	0.302
BMI	0.063	0.534	-0.002	0.982

Table V: Correlation matrix of R2D:4D with the anthropometric parameters used

Parameters	Male (L2D:4D)		Female (L2D:4D)	
	Pearson correlation coefficient r value	P value	Pearson correlation coefficient r value	P value
Height	-0.126	0.211	-0.011	0.915
Weight	-0.056	0.582	0.056	0.578
BMI	-0.013	0.898	0.076	0.452

Table V: Correlation matrix of R2D:4D with the anthropometric parameters used

DISCUSSION

Past studies have shown that the digit ratio values are consistently reliable in determination of sexual dimorphism. According to Brown et al, considerable proportions of normal males have low digit ratios compared to females[12]. It was also shown that men had relatively short second digits than fourth digits[13]. In our present study, females had greater 2D:4D for right hand and almost equal digit ratio for the left hand. This study has shown significant differences between male and female regarding the length of second and fourth digits in both hands. It has also shown the significant difference in case of 2D:4D ratio for right hand. The present study was also done to establish the relationship between the male and female finger length ratios (2D:4D) and to ascertain if it has any correlation with height, weight and BMI. The results showed that there was no correlation between digit ratios and anthropometric variables in both sexes. Manning et al reported that there was no significant correlation between height and weight and digit ratios for 69 men and 62 women with the exception of positive correlation between the weight and 2D:4D ratios for the right hands[14]. Present study showed a negative correlation between L2D:4D and height (-0.126, -0.011). On the other hand, Hurt and VanAnders reported a large negative correlation of -.49 between height and digit ratios after controlling the gender[15]. Jacob et al showed males to have higher 2D:4D ratio and a negative correlation between R2D:4D and height(-.27)[16].

CONCLUSION

The 2D:4D length ratio in females is greater than in males. Results obtained from the total sample of 200 participants have shown females to have higher or equal 2D:4D ratios in both right and left hands respectively. The 2D and 4D lengths between right and left hand also showed variations with p value less than 0.001. Present study showed that there was a positive correlation between second and fourth digit length and height in males and females bilaterally. There was also a significant correlation between weight and second and fourth digit lengths in both sexes. Results showed no positive correlation between the 2D:4D ratios and height, weight and BMI of the study population.

Results from the present study indicate that 2D and 4D lengths is a proxy indicator of height when it is difficult to measure height directly. Since the study is limited to certain smaller age group population, further studies are recommended to be carried out with larger population for greater utility value of 2D:4D as a indicator for physical attributes.

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Knowledge and Prevalence of Family Planning Measures among Community People of Chisapani, Banke

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ABSTRACT

Introduction: Global threat of increasing population has become a challenge to control. That's why Family planning is a strong matter of concern for most of the developing countries like Nepal. The first family planning service in Nepal was provided by Family Planning Association Nepal (FPAN) in 1959 to provide an Integrated Package of Essential Services (IPES) that includes comprehensive counselling; family planning and sexual health services; safe abortion services; HIV and AIDS and other sexually-transmitted infection (STI) services; gynaecological, prenatal, and post-natal care; and GBV care. Several studies reflect that increment in population is directly related to the level of education, low family income, and lack of awareness, strong cultural beliefs and many more. Especially, village areas of Nepal are deprived of Family Planning services and measures due to lack of coverage and other facilities. Thus knowledge regarding Family planning and contraception needs to be accessed and hence a village in Chisapani, Banke district of Nepal was chosen for this study. **Objectives:** The overall objectives of our study were to access the knowledge regarding Family planning, to access the practise of Contraceptive measures and to find out the contraceptive prevalence rate (CPR) among community people of Chisapani village, Banke. **Material and Method:** A Cross-sectional descriptive study with population size of 410 community people was performed in Chisapani, Banke; starting from 18th June to 2nd September, 2018. A pre-tested questionnaire containing structural, semi-structural and open ended questions were made as data collection tool. All the people in this study were interviewed after receiving consent as an ethical clearance. **Result:** 393 out of 410 (i.e. 95.85%) people in our study have known about Family planning via Mass Media (75.82%). Only 70.48% people responded to have used any Contraceptive measure. Depo was found to be the most used measure (i.e. 54.87%). 42.43% people have heard about emergency contraceptive pills but only 20.68% among them have ever used it. **Conclusion:** Though 95.85% of the respondents of our study had known about Family Planning however only 70.48% people have been using any of the contraceptive measures. Emergency contraceptive pills were used by only 20.68% of the respondents.

Key words: *Contraception, depo-provera, family planning, knowledge, pills*

INTRODUCTION

Global population has increased tremendously from 1 billion (1800 A.D) to 7.616 billion in 2018 A.D. at the rate of 1% per annum.Nepal being a developing country, the total population was 26,494,501 (Census 2011) which is increased than previous 2001 census (23,151,423), which suggests an annual growth rate of 1.35%. To control this day by day increasing population in the world and to improve the maternal and child health, the concept of family planning was set up in 1936 A.D. which was at first known as the Sex Hygiene and Birth Regulation Society. At that time, contraception was basic and unreliable.In Nepal, first family planning services was provided by Family Planning Association Nepal (FPAN), established in 1959 A.D. Currently it involves 37 districts with the objectives to providean Integrated Package of Essential Services (IPES) that includes comprehensive counselling; family planning and sexual health services; safe abortion services; HIV/AIDS and other sexually-transmitted infection (STI) services; gynaecological, prenatal, and post-natal care; and Gender Based Violence (GBV) care.[1] Family planning services are defined as "educational, comprehensive medical or social activities which enable individuals, including minors, to determine freely the number and spacing of their children and to select the means by which this may be achieved".[2] This also includes the age at which she wishes to have them. “Contraception” is defined as the measures – Natural/Artificial to control pregnancy (Calendar, withdrawal, condom, pills, Depo, vasectomy, etc.).

NDHS (2016) suggests the Family planning coverage of any method to be (53%), by modern methods (43%) and (10%) by traditional methods. 24% of the married women had unmet needs of Family planning services.[3] Although Family planning being a priority program of the Government of Nepal; there is unmet demand for it due to reasons like lack of information, inconvenient or unsatisfactory services, fears about contraceptive side effects, and opposition from husband or relatives. Different data suggests that today, more than 300 million women in the 69 poorest countries use modern

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contraception due to which approximately 82 million unwanted pregnancies, 25 million unsafe abortion and 125,000 maternal deaths are averted annually[4]. As mentioned above, the contraceptive prevalence rate(CPR) is associated with lack of awareness, improper services, and unscientific believes which are more common in village of underdeveloped areas, so our study was conducted in Chisapani village of Banke district.

MATERIAL AND METHOD

This study was conducted based on descriptive cross sectional design, data was collected only once and there was no follow up done. This study was basically focused on assessing the knowledge and practice of Family Planning among the community members of Chisapani, Banke. Villagers were interviewed using questionnaire having structured and semi-structured also open ended questions. 410 members of Chisapani village were selected as study population. Collected primary data were later tabulated and analysed using cross tabulation and descriptive calculations. Study started in 18th of June 2018, validity and reliability of questionnaire were checked by interviewing 30% of real population. Nepali language was used in questionnaire for better response. All the collected information were assessed using MS-EXCEL and SPSS version 22 for descriptive analysis. Informed consent were taken from each member of the study population. Analysed data were thus presented in the form of tables and charts and interpreted accordingly.

RESULTS

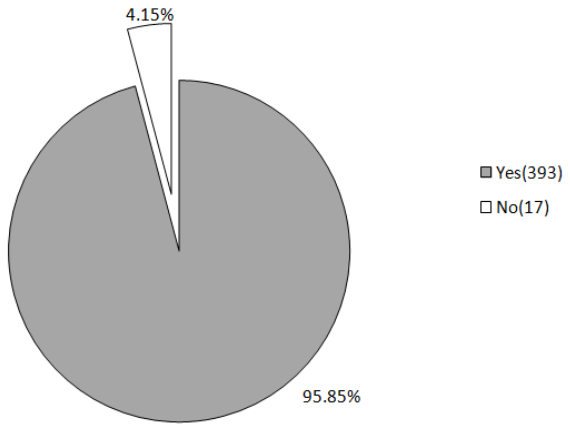

Figure 1: Knowledge of family planning

Pie Chart above shows that out of 410 respondents, 393(95.85%) have heard about Family Planning while remaining 17(4.15%) have not heard.

S.N	Media	Number	Percentage
1.	T.V/Radio	298	75.82%
2.	Health workers	282	71.75%
3.	Family friends	98	24.13%
4.	Others	42	10.68%

Table I: Source of information regarding family planning

Table above shows that highest number of respondents i.e. 298(75.82%) have heard about Family Planning via T.V/Radio

S.N	Measures	Number	Percentage
	A.MODERN MEASURES		
1.	Depo (Sangini)	369	93.89%
2.	Pills	325	82.69%
3.	Condom	340	86.50%
4.	IUCD (Copper-T)	321	81.67%
5.	Norplant	312	79.38%
	B.TRADITIONAL MEASURES		
1.	Withdrawl method	95	24.17%
2.	Calender method	86	21.88%
3.	Abstinence	93	23.66%
	C. PERMANENT METHODS		
1.	Male sterilization	244	62.08%
2.	Female sterilization	304	77.35%

Table II: Knowledge of family planning measures

The above table shows that maximum number of respondents had an idea about Depo-Provera injection, condom, and pills respectively.

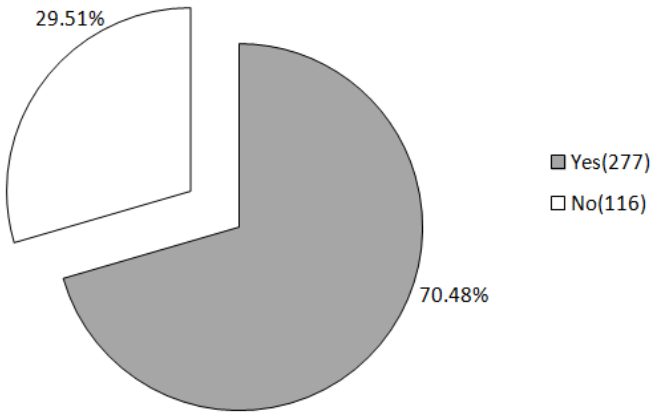

Figure 2: Use of family planning measures

Pie Chart above shows that out of 410 respondents, 277(70.48%) have used Family Planning measures while remaining 116(29.51%) have not used.

S.N	Measures	Number	Percentage
	A.MODERN MEASURES		
1.	Depo (Sangini)	152	54.87%
2.	Pills	74	26.71%
3.	Condom	91	32.85%
4.	IUCD (Copper-T)	16	5.70%
5.	Norplant	26	9.38%
	B.TRADITIONAL MEASURES		
1.	Withdrawal method	18	6.49%
2.	Calendar method	06	2.16%
3.	Abstinence	05	1.80%
	C. PERMANENT METHODS		
1.	Male sterilization	14	5.05%
2.	Female sterilization	25	9.02%

Table III: Use of family planning measures

The table shows that 152(54.87%) out of 277 have been using Depo (modern measure) for family planning.

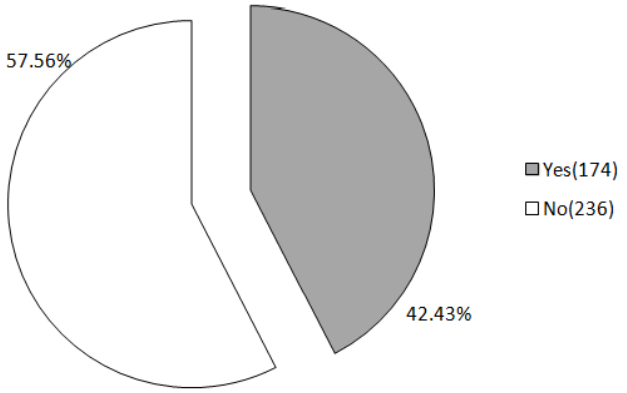

Figure 3: Knowledge regarding emergency contraceptives

Pie Chart above shows that out of 410 respondents, 174(42.43%) have knowledge regarding Emergency contraceptives while remaining 236(57.56%) have no knowledge about it.

S.N	Reason	Number	Percentage
1.	Cheap in price	20	7.22%
2.	Easily available	79	28.51%
3.	Easy to use	134	48.37%
4.	Prescribed by health workers	31	11.19%
5.	Suggested by Family & Friends	17	6.13%
6.	Others	82	29.60%

Table IV: Reasons for using particular family planning measures

Table above shows that highest number of respondents i.e. 134(48.37%) have answered Easy to use to the reason for using particular family planning measures.

S.N	Reason	Number	Percentage
1.	Not needed till	36	31.89%
2.	Planning to use	22	18.96%
3.	Don't like using	20	17.24%
4.	Others	64	55.17%

Table V: Reasons for not using family planning measures

Table above shows that highest number of respondents i.e. 36(31.89%) have answered Not needed till to the reason for not using family planning measures

S.N	Reason	Number	Percentage
1.	Taken after sexual intercourse	44	25.28%
2.	Better than other methods	31	17.81%
3.	72 hours pill	121	69.54%
4.	Easy to use	05	2.80%
5.	Others	07	4.02%

Table VI: Knowledge regarding use of emergency contraceptives

Table above shows that highest number of respondents i.e. 121(69.54%) have answered 72 hour pill for the reason behind using Emergency contraceptives.

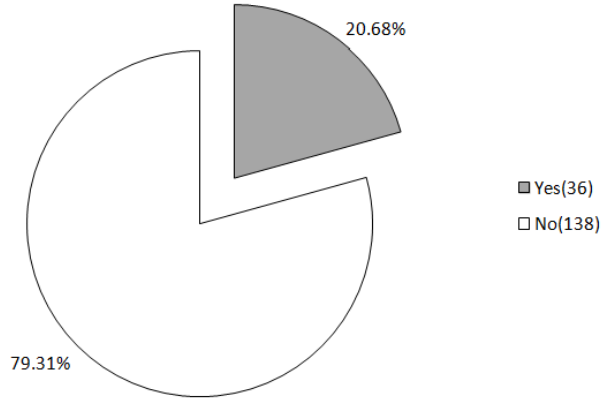

Figure 4: Use of emergency contraceptives

Pie Chart above shows that out of 174 respondents, 36(20.68%) have used Emergency contraceptives while remaining 138(79.31%) have not used it yet.

Demographic data

Maximum number of respondents in the study belongs to 20-40 years age group. More than half i.e. 54.63% had married at the age of 10-20.only around 9% were illiterate. Female respondents were more (61.21%) than male (38.78%).

DISCUSSION

Study findings have been discussed in terms of objectives stated and with the findings of other similar studies.

Present study showed maximum awareness regarding Family Planning, 393(95.85%) respondents out of 410 had some knowledge about it. A study done by H Tuladhar and R Marahatta also revealed a high percentage of awareness in family planning methods, 93.0% of the respondents knew about at least one method[5]. T.V/Radio was found to be the major source of information regarding family planning. Again the study by H Tuladhar and R Marahatta stated mass media the main source of knowledge as reported by more than half (55.5%)of the respondents. Most of other studies also have stated print and electronic media to be the common source of public awareness[5].

In the present study maximum number of respondents had an idea about Depo-Provera injection, condom, and pills respectively**.** A study by Tanabe et al. reveals that 76.8% of married women reported that they were aware of any modern method compared to 64.9% of unmarried women .Women who ever attended school were more likely to report that they were aware of any modern method compared to those who never attended school[6]. Only 277 (70.48%) respondents said that they have been using or have used at least one family planning measure and 152(54.87%) out of 277 have been using Depo (Modern measure) for family planning. Among temporary methods of family planning, condom was most commonly used i.e. 64%. Less than half of the respondents (44%) had already done vasectomy as permanent methods of FP[7]. While a study by Atuahene et al. revealed most (88.2%)used injectable, only 6.1% and 0.9% used Implants and IUD, respectively[8]. Nepal Fertility, Family Planning and Health Survey reported that 29% of women said that they would

1. Age of the respondents

Age group	Number	Percentage
10-20	19	4.60%
20-30	144	35.12%
30-40	123	30%
40-50	85	20.73%
50-60	30	7.31%
60-70	09	2.19%

2. Age at marriage

Age group	Number	Percentage
10-20	224	54.63%
20-30	176	42.92%
30-40	10	2.43%

3. Literacy of respondents

Educational level	Number	Percentage
Illiterate	37	9.02%
Primary	92	22.43%
Lower secondary	129	31.46%
Higher secondary	152	37.07%

Sex of respondents

Sex	Number	Percentage
Male	159	38.78%
Female	251	61.21%

prefer female sterilization followed by 27% women preferring injectable and 18% preferring pills[9]. Even a prevalence of family planning method use in post-partum period was studied in Ethiopia by Gebremedhin et al. and found it to be 80.3%[10]. Around one–fourth of aware respondents (29.51%) were not using any family planning measure and 36 non-users (31.03%) answered that they didn't need till date. Also 17.24% non-users confessed that they didn't like using any contraceptives. When asked of reasons for not using FP services in the study of Mishra SR, Joshi MP and Khanal V; lack of knowledge about availability of FP services (20.0%), lack of resources to access (8.6%) and fear of stigma and discrimination (14.3%) were the major ones mentioned. The other reasons for not using FP services were having irregular sexual partners, being unmarried/single and illness[11]. Likewise, the qualitative findings also indicate fear of contraceptives' side effects as a barrier to use contraception by women[12].

Societal influence, which can affect one's behaviour, was a major factor contributing to women's use of contraceptives for FP. Nine of the 12 studies found male influence to be the strongest factor in women's decisions to utilize FP services. Some of the reasons males were against contraceptive use were connected to misperceptions and mistrust of "western" influence[13]. Nepali women who start using the pill or Depo-Provera are likely to use it for a relatively short period of time. Within 24 months of starting to use the pill, almost 60 percent of users have stopped using the method[14]. According to recent NDHS data, nearly two-thirds of women who were not using or do not intend to use contraception gave fertility-related reasons – infrequent sex, menopause, sub fecund/in-fecund and desire for more children[.15] In our current study, 134(48.37%) responded convenient use as the reason for using particular family planning measures.The other study in eastern Nepal by Keyal NK and Moore M reflect that DMPA was the most popular contraceptive, followed by condoms. The only other common option chosen was the combined pill. Of DMPA users, 88% said that they chose it because it as convenient. 50% of condom users stated that they chose them because they were safe and 39% found them convenient. 11% said the method was easily reversible. Among combined pill user, 38% found it convenient and 38% said it was their husband's choice. The remainder used it because they did not experience bleeding problems during use[16].

In the current study, 174(42.43%) out of 410 had knowledge regarding Emergency contraceptives. Two-third stated it as 72 hour pill. Out of 174 respondents, 36(20.68%) had used Emergency contraceptives while remaining 138(79.31%) had not used it yet. Use of emergency contraception and abortion are increasing steadily in Nepal. Both methods prevent unwanted pregnancies in certain circumstances, therefore are essential components of reproductive health. However, this increase is a sign of failure of the family planning programme. It is not wise to use emergency contraception and abortion as alternatives to family planning methods. The FP programme should therefore develop a strategy to increase awareness about the importance of FP to prevent unwanted pregnancies and discourage the use of emergency contraception and abortion as a method of FP[17].

In thousands of households, hostility towards family planning has its roots in deep-rooted customs and beliefs. In Nepal's largely patriarchal culture, it remains the norm for couples to have four or more children: preference for sons means women are forced to go on having children until boys are born. Contraception remains an alien, uncomfortable idea for millions of Nepalese and is tightly controlled by men: women often need consent from their husbands to use contraception[18].

214 million women of reproductive age in developing countries who want to avoid pregnancy are not using a modern contraceptive method. Evidence suggests that women who have more than 4 children are at increased risk of maternal mortality[19].

CONCLUSION

Maximum number of respondents had at least some basic information regarding family planning. Mass media was the major source of information to them. Depo-Provera and condom were the contraceptives used by maximum of respondents respectively and convenience in using was revealed as the reason for use of these measures. Though 95% of respondents had knowledge regarding family planning, only 70.48% were using contraceptives but still it is above than the National contraceptive prevalence rate. About two-fifth of the respondents were aware about emergency contraceptives and around 10% of respondents had used it at-least once. Awareness level is satisfactory but use of family planning measures can still be increased to ensure the prosperity and health of the family. Various community level programs can be done to increase the knowledge depth regarding family planning and its importance.

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The subjective acceptance in presbyopic patient receiving correction based on conventional method of age v/s amplitude of accommodation

Chaudhary NP[1], Gautam PS[2]

ABSTRACT

Objective: To observe the subjective acceptance in presbyopic patients following prescription of spectacles. **Material and method**: This is a hospital based cross sectional study which was conducted in 100 presbyopic patients in age group of 35 to 60 years at outpatient department of ophthalmology in Nobel Medical College Teaching Hospital, kanchanbari from 1st August 2018 to 30th November 2018. The patients were divided into two groups, First group received the presbyopic correction according to conventional method of age and the second group received the prescription according to their amplitude of accommodation. Patient's satisfaction in terms of symptoms like eyestrain, headache or difficulty with the usage of glasses was noted. The data collected were subjected to statistical analysis. **Conclusion: W**hen presbyopic correction is given according to amplitude of accommodation in patients belonging to 36-45 years age group, it is tolerated better and patients are more satisfied in terms of symptoms like eyestrain and headache than getting the simple correction as per their age. However after the age of 45 years, presbyopic correction given according to age is equally tolerated well among all refractive error groups.**Results:** 100 patients in this study who visited our OPD with presbyopic symptoms were divided into two groups, each of 50 patients. Patient's satisfaction and tolerance was better when presbyopic correction was given on the basis of their amplitude of accommodation in age group 36-45, in comparison to the prescription given according to conventional method of their age. However, there was no statistically significant difference in the patient's satisfaction level in the two groups after the age of 45.

Key words: *Amplitude of accommodation, presbyopia , refractive error*

INTRODUCTION

Presbyopia is defined as the reduction in the range of accommodation or accommodative power which occurs with ageing. Uncorrected presbyopia results in an inability to perform which result in receding of Normal Near point effortless near tasks at a customary working distance with attendant visual symptoms. Presbyopia poses an important public health challenge because its onset coincides with the productive year of an individual which may affect productivity and subsequently hinder economic development of a nation. The definition of presbyopia is fluid because there is no standard distance for near work[1]. The age at which patients seek remedy for presbyopic symptoms vary and it is not unusal to see patients in their late forties, not using presbyopic lenses. This variability could be either professional or due to variable preservation of accommodative ability or artifactual due to Myopia. Symptoms of presbyopia itself can be dependent on other factors like amount of near work done, lighting conditions, and corrected distance acuity etc[2].

The pathophysiology of presbyopia still remains poorly understood. According to a theory proposed by Helmholtz, accommodation occurs as a result of the elastic properties of the lens and possibly the vitreous that allows the lens to expand and increase its power when zonular tension is relieved during ciliary muscle contraction[3]. As the lens changes with age, the ability to expand and increase refractive power is lost. Helmholtz's theory of sclerosis of the crystalline lens as the cause of presbyopia has been challenged in 1992 by Schachar[4]. Schachar suggests that the longitudinal muscle fibers of the ciliary muscle contract during accommodation, placing more tension on the equatorial zonules, while relaxing the anterior and posterior zonules[4]. This force distribution causes an increase in the equatorial diameter of the lens, decreasing the peripheral volume while increasing the central volume. As the central volume increases, so does the power of the lens. Under this theory, presbyopia occurs because of the increasing equatorial diameter of the aging lens. Once the lens diameter reaches a critical size, usually during the fifth decade of life, the resting tension on the zonules is significantly reduced[5].

CORRECTION OF PRESBYOPIA

The treatment of presbyopia is to provide the patient with convex lenses so that his accommodation is reinforced and his near point brought within the useful working distance. To do this adequately we must first know the working point of the individual. An individual is to be treated as an individual and his needs are his own needs and the individual is not to be given correction for presbyopia merely because he is in the presbyopic age. Rather the person's refractive status and the amplitude of accommodation should be taken into account whenever prescribing presbyopic correction[6].

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According to the Donder's rule, 1\4 of amplitude of accommodation should be kept in reserve for comfortable near work and it should be kept in mind that majority of people work at a distance of 28-30 cm and for maximum comfort in near work, at least 1/3 of the available accommodative power must be kept in reserve[7].

To the best of my knowledge, I found study showing the patient's level of satisfaction and comfort after receiving presbyopic correction with spectacles. Also, there is little data on the actual differences in accommodation that is preserved in various types of refractive errors. Hence, this study is aimed to compare the subjective acceptance in patients receiving presbyopic correction with glasses according to conventional age method over the correction according to their amplitude of accommodation.

MATERIAL AND METHODS

This was a hospital based cross – sectional study on the patients with presbyopic symptoms who visited the outpatient department of ophthalmology in Nobel Medical College and teaching Hospital from 1st August 2018 to 30th Novemebr 2018, provided they fulfilled the inclusion and exclusion criteria mentioned below.

INCLUSION CRITERIA

- Patients between 35-60 yrs of age
- Clear ocular media
- Visual acuity improving to 6/6 on snellen's refraction

EXCLUSION CRITERIA

- Age <35 yrs of age and >60 yrs.
- Hazy ocular media including corneal opacity and cataract> grade NO1, NC1,C1, P1 according to LOCS III cataract classification.[9]
- Spherical correction of more than 6.0 D
- Cylindrical correction of more than 0.75 D cylindrical
- Patients of strabismus or with history of diabetes mellitus, systemic illness, trauma, drug therapy.

A total of 100 cases were included in the study. All the cases were examined for refractive status and their amplitude of accommodation was measured with the help of RAF ruler and the patients were divided into 2 groups, 50 in each: one group was prescribed presbyopic correction according to age and the second group, according to amplitude of accommodation. When prescribing according to age, the conventional method of prescribing +1 D at the age of 40 yrs and thereafter adding +0.5 D for every 5 years was followed .On the other hand in patients who are prescribed presbyopic correction according to amplitude of accommodation, 1/3rd of Amplitude of Accommodation was kept in reserve ,for comfortable sustained vision. For example, if a patient who had his near point at 50 cms, his amplitude of accommodation would be 2D, but for or a normal working distance of 25 cms, he required an amplitude of accommodation of 4D, and to work comfortably he must keep 1\3 of his accommodation in reserve i.e. 1\3 of 2D or 0.7 D, so the corrective presbyopic lens he was given was that of 2.7D (4-2+0.7).

Patient's satisfaction in terms of symptoms like eyestrain, headache or difficulty with the usage of glasses was noted. Patients with any of these symptoms were considered as not satisfied. A follow up examination was done at 2 weeks after prescription of presbyopic correction and acceptance of correction.

Analysis and Statistics

The data collected was tabulated and results of study were analyzed using statistical package for social science (SPSS) 16.0 and Microsoft Word and Microsoft Excel have been used to generate graphs, tables, etc. Significance level was assessed by calculating 'p' value using student T test. Observations were taken as significant at 'p' value less than 0.05 ('p' <0.05).

RESULTS

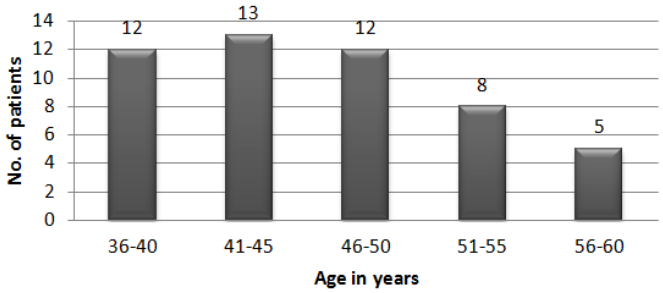

Figure I: Age distribution on group I

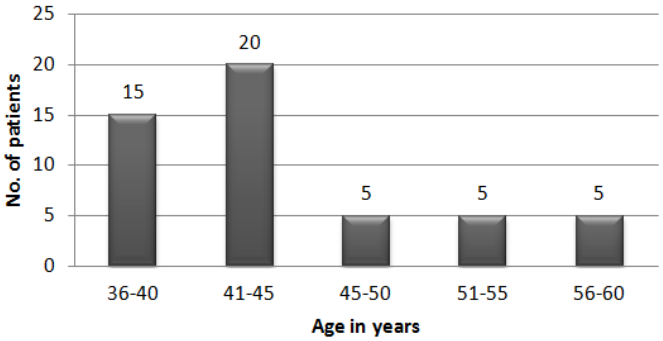

Figure II: Age distribution on group II

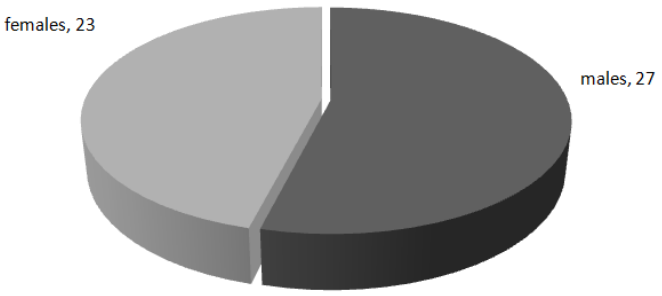

Figure 3: Sex distribution in Group I

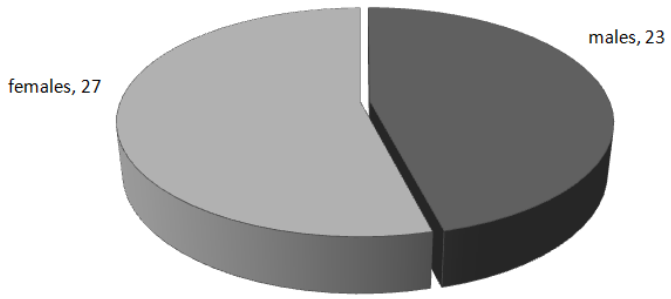

Figure 4: Sex distribution in Group I

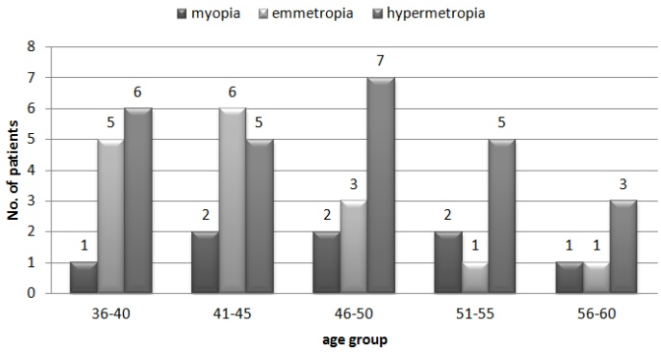

Figure 5: Refractive status of pts in gr-I

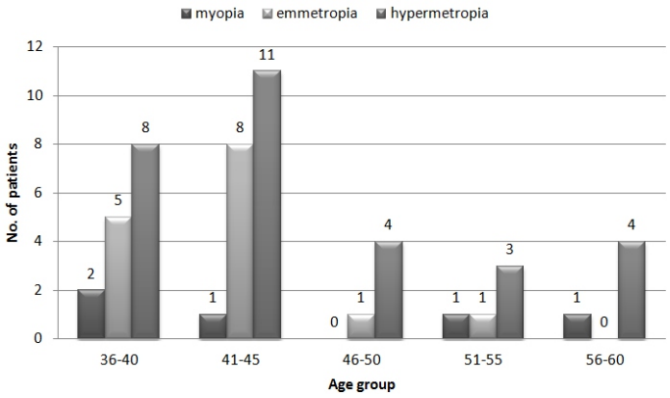

Figure 6: Refractive status of pts in gr-II

Age Group (years)	Myopia				Hypermetropia				Emmetropia			
	No of cases	% Satisfaction			No of cases	% Satisfaction			No of cases	% Satisfaction		
		Yes	no	%		Yes	no	%		Yes	no	%
36-40	01	00	01	00	06	00	06	00	05	00	05	00
41-45	02	O1	01	50	05	01	04	20	06	03	03	50
46-50	02	01	01	50	07	04	03	57.2	03	03	00	100
51-55	02	02	00	100	05	05	00	100	01	01	00	100
56-60	01	00	01	00	03	03	00	100	01	01	00	100

Table I: Patient satisfaction after presbyopic correction according to age (group I)

Age Group (years)	Myopia				Hypermetropia				Emmetropia			
	No of cases	% Satisfaction			No of cases	% Satisfaction			No of cases	% Satisfaction		
		Yes	no	%		Yes	no	%		Yes	no	%
36-40	02	02	00	100	08	08	00	100	05	03	02	60
41-45	01	01	00	100	11	10	01	90.9	08	07	01	87.5
46-50	00	00	00	00	04	04	00	100	01	01	00	100
51-55	01	01	00	100	03	03	00	100	01	01	00	100
56-60	01	00	01	0	04	04	00	100	00	00	00	00

Table II: Patient satisfaction after presbyopic correction according to amplitude of accommodation

Table I shows patients satisfaction after presbyopic correction according to age. There was 0% satisfaction in all 3 refractive error groups in age group 36-40 years, 50% satisfaction in myopic patients in age groups 41-45 and 46-50 and 100% satisfaction in all 3 refractive error groups in age groups 51-55 years.

Table II shows patients satisfaction after presbyopic correction according to amplitude of accommodation in group II. It showed 100% satisfaction in myopes and hypermetropes in age group 36-40 and 51-55 years,60% satisfaction in emmetropes in 36-40 years age group; 90.9% and 87.5% satisfaction of hypermetropes and emmetropes in the age group 41-45 years respectively.

DISCUSSION

In this study, I compared patient's satisfaction and level of comfort while receiving presbyopic correction according to age with that while receiving correction according to their amplitude of accommodation, where 1/3rd of the patient's accommodation was kept in reserve. I observed that patient's satisfaction after getting presbyopic correction according to age was 0 % in 36-40 years age group in all the three refractive errors; it was 20% in hypermetropes in 41-45 year age group. However in 51-55 year age group, 100% satisfaction was found in all the three refractive errors. When presbyopic correction was given according to amplitude of accommodation keeping 1/3rd of it in reserve, 100% satisfaction was seen among all the age groups between various refractive errors except for hypermetropia in 41-45 year age group (90.9%) which can be considered fairly good and for myopia in 56-60 year age group where only one patient out of three complained of fatigue after the use of glasses.

My findings regarding presbyopic correction correlates well with revathi et al.[8], who observed the role of amplitude of accommodation in giving presbyobic correction and concluded that though age related presbyopic correction can be given in normal practice; more care has to be taken regarding the working distance range and amplitude of accommodation when coming across a young hypermetrope who tolerates individualized correction better than the conventional one.

My above findings regarding role of amplitude of accommodation in giving presbyopic correction also correlates well with Rambo and sangal[9], who in 1960, studied amplitude of accommodation in the presbyopic age group and interpreted that after thirties every refraction patient should have accommodation measured and presbyopic correction given accordingly; however after the age of 45 years this is not so important and full addition for close work or reading can usually be given.

CONCLUSION

This study tried to find out the role of amplitude of accommodation in giving presbyopic correction. In conclusion, it can be said that when presbyopic correction is given according to amplitude of accommodation in patients belonging to 36-45 years age group, it is tolerated better and patients are more satisfied in terms of symptoms like eyestrain and headache than getting the simple correction as per their age. However after the age of 45 years, presbyopic correction given according to age is equally tolerated well among all refractive error groups. Hence, presbyopic correction in the age group of 36-45 should be given after taking the amplitude of accommodation of the individual in account and keeping 1/3 of the accommodation in reserve. After the age of 45 years the conventional age old “near correction with age” can be given and is usually tolerated well.

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