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Audio Visual aids in Medical teaching Are they being over Subscribed?

In the ancient past the teaching was quintessentially verbal. The Students had to be “Shruti dhar”(remembering by listening to the teachers). Our ancient Scriptures are a witness to this.

Since then, much water has flown under the bridge. We now live in a time where an effective communication has not only to be verbal but visual as well. The controlled trials have unequivocally shown that verbal presentations beefed-up with visual supplements make such presentations more informative, interesting and intensify cognitive learning.

For this, the cutting-edge technology and tools like PowerPoint presentations and OHPS have opened new vistas and dimensions in teaching methods. The poor black-board and chalk have been given a cold valediction.

However, wisdom always demands a re-assessment of the usefulness of the newly invented tools. Are these visual aids making the teaching more immersive and interactive? Are these aids being used in proper perspectives?

The answer will be a flat “no” if a student is asked to answer honestly. A large majority of the teachers are using this aid for their convenience not to increase the students cognitive engagement in the class. Transparencies of OHPS howsoever transparent they might be yet, they create a barrier between the students and teacher. The PowerPoint Presentations are more often too numerous and contain too much information that student can digest. A monotonous recital of these makes the students totally disinterested in the lecture. They feel that teacher is reciting from the lines taken down from the books.

I think there is still a place for black-board and the newer invaluable teaching aids should be very subtly used and used in proper perspective

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Efficacy of Transversus Abdominis Plane Block After Post Caesarean Section Delivery

Singh G¹, Banu F², Haque H³

ABSTRACT

Introduction: Post operative pain following caesarean section delivery can negatively affect early wound healing, proper breast feeding to the new born baby and therefore impair mother to child bonding. Combination of non steroidal anti inflammatory drugs (NSAIDs) and opioids has most commonly been used in pain management. The combination of regional anesthetic techniques like Transversus Abdominis Plane (TAP) block reduces pain and the dose of total analgesics consumed and therefore helps to prevent opioid related side effects.

Objective: To evaluate the analgesic efficacy of Transversus Abdominis Plane block for management of postoperative pain in the first 24 hours after caesarean section.

Methodology: It is a prospective randomized controlled single blinded study involving 60 patients of ASA II done in Nepalgunj Medical College Teaching Hospital over a period of 2 months. They are divided into two groups of 30 patients each. Group 1 received 20 ml of 0.25% isobaric bupivacaine in the triangle of Petit bilaterally. Group 2 received IV analgesics (NSAIDs and Tramadol 50 mg with Phenargan 25 mg). VAS score was taken every 6 hourly for 24 hours post operatively.

Results: The mean VAS score of the patients in group 2 at 0-6 hours, 6-12 hours, 12-18 hours and 18-24 hours was 6.73(SD±0.69), 6.63(SD±0.610), 6.40(SD±0.56) and 6.43(SD±0.57) respectively. The mean VAS score of the patients who received block is significantly less as compared to those who did not receive the block with a p value of <0.001. The mean time to first analgesic request in group 1 was 10.83(SD±2.95) and in group 2 was 4.87(SD±0.68) with a p value of <0.001. In group 1, 70% patients received single dose of analgesics, 23.3% received two doses and 6.7% received three doses of analgesics. In group 2 all the patients received four doses of analgesics.

Conclusion: Transversus Abdominis Plane Block can be used as a part of multimodal analgesic therapy for the management of post operative pain after caesarean section as it is technically less demanding, safe and economical. It reduces the side effects related with opioid analgesics and encourage early mobility, wound healing and proper mother to child bonding.

Key Words: Non Steroidal Anti Inflammatory Drugs(NSAIDs), Transversus Abdominis Plane Block(TAP Block), Visual Analogue Scale(VAS score)

INTRODUCTION

Post operative pain remains the most fearsome situation in patients undergoing surgery. As such the proper treatment of post operative pain remains the greatest challenge to the anesthesiologists. Frequently used analgesic therapy including non-steroidal anti-inflammatory drugs (NSAIDs) and opioids combination is usually inadequate and has some unwanted side effects like gastritis, sedation, nausea vomiting, pruritus and urinary retention¹.

Transversus abdominis blocks (TAP) are frequently used as a part of multimodal analgesia for post operative pain after abdominal surgeries like caesarean section, hemicolectomy,

appendectomy and various other gynecological surgeries². Pain is moderate to severe after caesarean section and inadequate treatment of the pain will impair mother to child bonding, breast feeding, early mobility which may lead to thromboembolism. The analgesics given should be safe for the breastfeeding baby and effective to the mother^{3,4}.

Pain after caesarean section arises from visceral part (uterine contraction) and the abdominal wall muscle incision³. TAP block blocks the abdominal wall afferent fibers arising from T6 to L1 and thus prevent pain due to incision of the abdominal wall muscles. It involves deposition of local anesthetic between the internal oblique and the transverses abdominis muscle where the nerve fibers traverse before innervating the abdominal wall muscle.

AIMS AND OBJECTIVES

1. To compare the analgesic potency of 0.25% bupivacaine versus routine use of opioid analgesics during first 24hrs in the post operative period.

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- To reduce the total number of opioid analgesics consumed.

MATERIALS AND METHODS

This is a randomized controlled single blind study done in Nepalgunj Medical College Teaching Hospital between 1st June 2017 to 31st July 2017 (two months) involving 60 patients. 30 patients received TAP block (group 1) whereas other 30 patients had NSAIDS and opioid analgesics in the post operative period for the pain relief (group 2). This study was approved by the ethical research committee of Nepalgunj Medical College Teaching Hospital. All patients coming for caesarean section belonging to ASA II were enrolled in the study after taking written informed consent. Patients were shifted to the OT. IV line was opened with 18 gauge IV canulae. Intravenous infusion of normal saline / ringer's lactate one liter was given as preloading. Vitals were recorded including pulse, blood pressure, respiratory rate, and temperature and oxygen saturation. Patients were divided into two groups using lottery system. Study group 1 received spinal anesthesia for surgery with bilateral TAP Block at the end of surgery whereas the control group (group 2) received just spinal anesthesia for surgery. Spinal anesthesia was given in a sitting position using 2.5 ml of 0.5% heavy bupivacaine at L4-L5 interspace in the sitting position. Immediately after spinal anesthesia patient was made to lie in the supine position. Caesarean section was performed by giving pfannenstiel incision. After completion of caesarean section, bilateral TAP block was given in petit triangle using 40 ml of 0.25% bupivacaine. It was given by using a blunt tipped 22 gauge needle in the study group. Drug was injected after negative aspiration for blood and fluid. For post operative analgesia patients in the control group (group 2) received Tramadol 50 mg. plus Phenargan 25 mg every 6 hourly and while in the study group patients received Tramadol plus phenargan only when required for 24 hrs. The analgesic potency of 40 ml 0.25% bupivacaine was compared with the routine use analgesics (NSAIDS + Tramadol 50 mg plus Phenargan 25 mg) in the first 24 hrs. post operative period. The pain score was measured by using VAS score in the post operative period after 6 hrs. of surgery till 24 hrs. in the postoperative ward.

Technique of Block:

Transversus abdominis block is given in the triangle of Petit. The landmarks for the petit triangle are: anteriorly posterior boarder of external oblique muscle, posteriorly anterior boarder of latissimus dorsi muscle and the base is formed by the upper boarder of iliac creast. The triangle is identified by palpating the iliac creast anterior to posterior, the posterior

boarder of external oblique and the anterior boarder of latissimus dorsi muscle is palpated. Then by using 4 inches long blunt tipped needle attached to the catheter double pop is appreciated. (19) First, one of the external oblique and the second of the internal oblique. The drug (0.25%) isobaric bupivacaine 20 ml. is injected in the plane between the internal oblique and the transverses abdominis muscle on each side.

Data analysis was done by using SPSS 17. For categorical variables cross tabulation is done and mean and standard deviation is calculated using t- test and for improvement in VAS score independent t test is applied for calculation of mean and standard deviation. P value <0.05 was considered significant.

RESULTS

Sixty patients were enrolled for the study and data from all of them were analyzed. The two groups were comparable in terms of baseline demographic parameters as shown in the table I, table II and table III.

Group					
Age	TAP Block	Percentage	Without TAP Block	Percentage	Total
20-25	15	50	15	50	30
26-30	8	26.7	3	10.0	11
>30	7	23.3	12	40.0	19
Total	30	100.0	30	100.0	60

Table I: Age distribution of patients in both the groups.

Most of the patients belong to 20-25 age groups and majority of the patients were above 60 kgs as shown in table I and II. The mean of age, weight, BMI and the height were comparable in both the groups (Table III).

Group					
Weight in kilogram(kg)	TAP Block	Percentage	Without TAP Block	Percentage	Total
50-55	4	13.3	0	0	4
56-60	9	30.0	11	36.7	20
>60	17	56.7	19	63.3	36
	30	100.0	30	100.0	60

Table II: Weight distribution of the patients in both the groups.

	TAP Block		Without TAP Block		T test	P value
	Mean	Standard Deviation	Mean	Standard Deviation		
Age	27.20	4.79	26.93	5.46	0.201	0.841
Weight	62.70	5.50	64.53	6.30	-1.2	0.235
BMI	26.73	2.34	27.54	2.77	-1.217	0.229
Height	1.53	0.03	1.53	0.02	0.11	0.913

Table III: Mean and standard deviation of age, weight, BMI and Height.

VAS Score in hours(hrs)	TAP Block		Without TAP Block		P value
	Mean	Standard Deviation	Mean	Standard Deviation	
0-6 hrs	4.53	0.78	6.73	0.69	<0.001
6-12hrs	5.23	1.14	6.63	0.61	<0.001
12-18hrs	4.80	0.76	6.40	0.56	<0.001
18-24hrs	4.40	0.67	6.43	0.57	<0.001

Table No. IV: The mean VAS score of patients in both the groups.

The mean VAS score of the patients receiving TAP block at 0-6 hrs. was 4.53 (SD±0.78), 6-12 hrs. was 5.25(SD ±1.14), 12-18 hrs. was 4.80(SD ±0.76) and at 18-24 hrs. was 4.40(SD ±0.67). Similarly, the mean VAS score of the patients who did not receive TAP block were 6.73(SD±0.69), 6.63(SD±0.61), 6.40(SD±0.56) and 6.43(SD±0.57) at 0-6 hrs, 6-12 hrs, 12-18hrs and 18-24 hrs. respectively. The mean VAS score of the patients who received TAP block is significantly less than that of the patients who did not receive TAP block with a p value of <0.001.

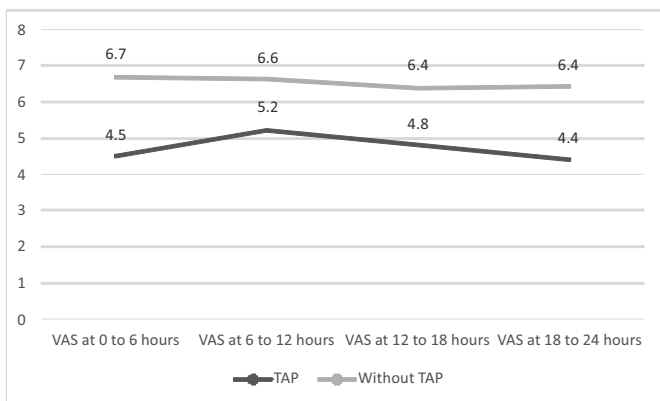


Figure 1: Comparison of VAS score at 6 hrs interval in both the groups.

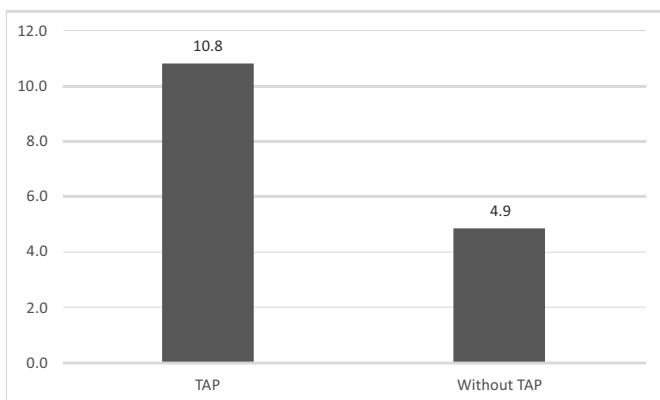


Figure 2: Mean time to first analgesic request in both the groups.

The mean time to first analgesic request in group 1 was 10.8 hours (SD±2.95) and in group 2 was 4.9 hours (SD±0.68) with a p value of <0.001.

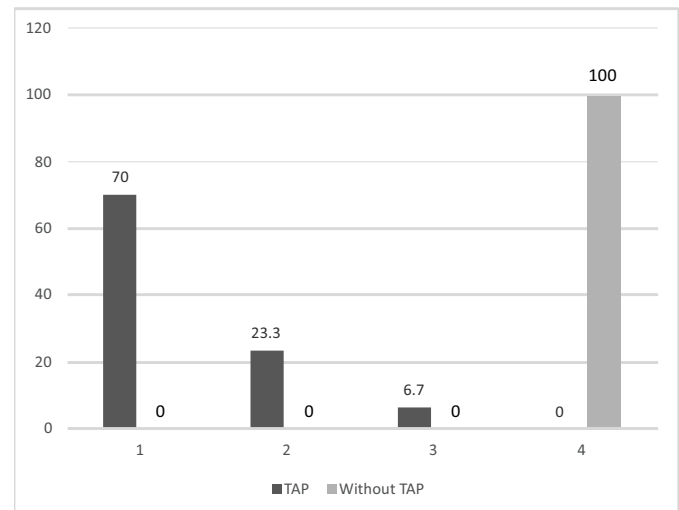


Figure 3: Number of doses of analgesics taken in both the groups.

In group 1, 70% of the patients received single dose of analgesics, 23.3% had double doses and 6.7% had three doses of analgesia. In group 2 all the patients received four doses of analgesics. The mean of total number of analgesia required in group 1 is 1.37 ± 0.61 and in group 2 it is 4.0 which is statistically significant with a p value of <0.001.

DISCUSSION

There has been a growing interest in the field of regional anesthesia for pain control as they reduce the dose of opioid analgesic^{5, 6}. As such transverses abdominis block is used for management of post-operative pain after various kind of abdominal surgeries^{7,8,9,10,11}.

In our study, the mean age of the patients in both the groups were comparable. The mean age of the patients in group 1 was 27.20(SD±4.97) and in group 2 it was 26.93(SD±5.46). Similarly, the weight of the patients in both the groups was also comparable. The mean weight of the patients in group 1 was 62.70(SD±5.50) and in group 2 it was 64.53(SD±6.30) with a p value of 0.235. BMI of the patients in group 1 was 26.73(SD±2.34) and BMI of the patients in group 2 was 27.54(SD±2.77) with a p value of 0.229 which is clinically comparable. The mean height of the patients in group 1 was 1.53(SD±0.03) and the mean height of the patient in group 2 was 1.53(SD±0.02) (p=0.913) which is comparable. Thus two groups were comparable demographically.

Intensity of pain was accessed by using VAS score. In the group who received TAP block additional analgesic was given on request when the VAS>4. In the group which did not receive

TAP block analgesic was given 6hrsly. The mean VAS score was significantly less in group 1 than in group 2 with a p value <0.001. This result is comparable to the study conducted by McDonnell et al (2007) where the mean VAS score was significantly less in patients who had TAP block with ropivacaine as compared to placebo in caesarean section ($p < 0.05$)¹². This study is also comparable to the study conducted by Carney et al who also gave TAP block using ropivacaine in patients with abdominal hysterectomy ($p < 0.05$). Similarly, our result is comparable to the study conducted by Eslamian et al.¹³ and Tan et al.⁴ who also had similar results. They evaluated efficacy of TAP block versus no block in patients undergoing cesarean delivery under general anesthesia. Patients in TAP group had lower VAS pain scores at rest and during coughing, utilized less PCA tramadol and had a longer time to ask for first analgesia, than the patients who did not receive block. In our study the mean time to first request of analgesia is significantly prolonged in group 1 (10.83 hrs. ± 2.95) as compared to group 2 (4.87 hrs. ± 0.68). Belavy et al. also concluded that the post operative analgesic efficacy after caesarean section was significantly high with patients receiving TAP block with bupivacaine than in patients without any block^{14,15}. Niraj et al also concluded the significant analgesic benefit of TAP block with bupivacaine in post appendectomy patients ($p < 0.01$). In group 1, 70% of the patients had single dose of rescue analgesia, 23.3 % of the patients had two doses of rescue analgesia and only 6.7% of the patients had 3 doses of rescue analgesia whereas in group 2 all the patients had 4 doses of analgesia. The mean of total number of analgesia required in group 1 is 1.37 ± 0.61 and in group 2 it is 4.0 which is statistically significant with a p value of <0.001. This result is similar to that of McDonnell JG et al and Carney J et al who found that the total analgesic required was significantly less in patients with TAP block than in placebo⁷.

However, our results are incongruent with the observation of Costello et al who evaluated the efficacy of TAP block post caesarean section and Griffiths JD et al who evaluated the efficacy of TAP block in post-operative patients undergoing laparotomy with midline incision in gynecological malignancies^{15, 16}. They found that there was no significant difference in the mean VAS score of patients receiving TAP block as compared to placebo. Peterson et al and Cochrane review failed to demonstrate any analgesic benefit of TAP block using local anesthetics as compared to placebo^{17,18}.

CONCLUSION

Our study clearly demonstrates the analgesic benefit of TAP block using 0.25% bupivacaine in caesarean section during the

post operative period. Reduced pain means early mobility, faster wound healing, helps in breast feeding and thus aids in effective mother child bonding. Further it reduces the need of opioid analgesic thereby preventing the side effects of opioid like drowsiness, nausea, vomiting, respiratory depression and urinary retention. TAP block gives promising results as post operative analgesic when used in combination with NSAIDs.

The limitations of the study are that it has limited number cases and analgesic effect is compared only for 24 hrs. TAP block is given by using the anatomical landmarks instead of using ultrasound guided block which would increase the efficacy of the block.

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Pattern of Provoking Factors and Psychiatric Co- morbidity in Migraine Headache: A Study from Tertiary Care Hospital

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ABSTRACT

Introduction : Headaches are the most prevalent neurological disorders and among the most frequent symptoms seen in general practice among which migraine only accounts up to 30%. Certain factors are found to play role in the triggering of migraine headache. Avoidance of such factors is part of migraine management. Psychiatric co morbidities are common in migraine. Recognizing these co morbidities could therefore result in improved patient management.

Methods : This study was done at Nepalgunj medical college hospital, Nepalgunj. Duration of study was six months i.e. from 1st July 2017 to 31st December 2017. All the new cases fulfilling diagnostic criteria of migraine headache visiting to psychiatric outpatient department were included in this study. The diagnosis of migraine was made based on criteria mentioned by the international classification of headache disorders (ICHD-II).

Result : A total of 50 patients were enrolled in this study. The mean age of participants was 28.60 ± 10.388 years. There was significant predominance of female participants. Family history of migraine was found in 20 (40%) of participants. The mean age of onset was 22.76 ± 7.899 years. The commonest type of migraine was migraine without aura in 2/3rd number of cases. Psychiatric co-morbidity was found in 26 (52%) subjects among which the most common co-morbidity was anxiety disorder in 16 (32%) followed by depression in 8 (16%). Presence of provoking factors was found in 38 (76%) subjects. Light, smoke, smell, noise and lack of adequate sleep were the common provoking factors.

Conclusion : Migraine predominantly affects females with common age of onset in second and third decade. Psychiatric co-morbidities are common in migraine patients. Anxiety disorder and depression are the commonest co-morbidities. The common provoking factors are light, smoke, smell, noise and lack of adequate sleep found in migraine. Avoidance of provoking factors and early detection and management of psychiatric co morbidities can result in better outcome.

INTRODUCTION

Headaches are the most prevalent neurological disorders and among the most frequent symptoms seen in general practice among which migraine only accounts up to 30%¹. It is estimated that global migraine prevalence is 11.6% and females are two times more likely to suffer than males². In the Global Burden of Disease Study, updated in 2013, migraine on its own was found to be the sixth highest cause worldwide of years lost due to disability (YLD)¹.

Migraine is a primary headache disorder characterized by recurrent headaches that are moderate to severe.¹ Typically, the headaches affect one half of the head, are pulsating in nature, and last from two to 72 hours¹. Associated symptoms may include nausea, vomiting, and sensitivity to light, sound, or smell³.

Certain factors are found to play role in the triggering of migraine headache. Stress or psychological upset, specific food or drinks, fatigue, change in whether, not eating on time, smell, smoke, menses in women, lights and sounds are common provoking factors found in migraine headache^{4,5}. Avoidance of such factors is part of migraine management.

Migraine is found to be usually associated with other psychiatric conditions. The association appears to be strongest for depression and anxiety disorders⁶. The presence of psychiatric conditions is a risk factor for transformation of migraine into a chronic form⁷. Recognizing this co morbidity could therefore result in improved patient management.

This study is done with the aim to know the clinico-demographic profile and pattern of provoking factors and to see the presence of other psychiatric comorbidity in migraine patients.

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METHODS AND METHODOLOGY

This study was done at Nepalgunj medical college hospital, Nepalgunj. Duration of study was six months i.e. from 1st July 2017 to 31st December 2017. All the new cases fulfilling diagnostic criteria of migraine headache visiting to psychiatric

outpatient department were included in this study. The diagnosis of migraine was made based on criteria mentioned by the international classification of headache disorders (ICHD-II)⁸. Patients were included in this study only once free verbal informed consent was given. Patients were excluded from the study if they had: (a) headaches thought to be related to trauma or injuries; (b) complicated neurological problems, i.e. underlying brain or systemic illness related to their headaches; (c) recent onset of headaches, i.e. less than one month prior to the study. A semi structured proforma was used to record important demographic and clinical characteristics. Diagnosis of psychiatric co morbidity was made based on International classification of diseases (ICD-10) criteria.

RESULT

A total of 50 patients were enrolled in this study. The maximum number of subjects belonged to age group 30- 39 years in 19 (38%) and 20- 29 years in 16 (32%). The mean age of participants was 28.60 ± 10.388 years. There was significant predominance i.e. 44 (88%) of female participants. More than 2/3rd subjects were married. Highest number i.e. 17 (34%) of subjects were illiterate and only 12 (24%) had their education up to secondary level. More than half patients were housewives followed by student in 10 (20%). Family history of migraine was found in 20 (40%) of participants.

Tab 1: Distribution of subjects based on socio-demographic profile

Variables	Category	Frequency N (%)
Age group	<10 years	1 (2%)
	10- 19 years	7 (14%)
	20- 29 years	16 (32%)
	30 -39 years	19 (38%)
	40- 49 years	5 (10%)
	≥50 years	2 (4%)
Mean age with SD in years		28.60 ± 10.388
Gender	Male	6 (12%)
	Female	44 (88%)
Marital status	Married	36 (72%)
	Unmarried	14 (28%)
Literacy	Illiterate	17 (34%)
	Literate	6 (12%)
	Primary	7 (14%)
	Secondary	12 (24%)
	Inter and above	8 (16%)
Occupation	Housewife	27 (54%)
	Service	3 (6%)
	Student	10 (20%)
	Skilled worker	8 (16%)
	Unemployed	2 (4%)
Family history	Present	20 (40%)
	Absent	30 (60%)

Tab 2: Distribution of subjects based on clinical profile of migraine

Variables	Category	Frequency N (%)
Age of onset	<10 years	1 (2%)
	10- 19 years	20 (40%)
	20- 29 years	20 (40%)
	≥30 years	9 (18%)
Mean age of onset with SD in years		22.76 ± 7.899
Types	Migraine with aura	17 (34%)
	Migraine without aura	33 (66%)
Character	Throbbing headache (unilateral)	12 (24%)
	Throbbing Headache (bilateral)	28 (56%)
	Non throbbing headache (unilateral)	2 (4%)
	Non throbbing headache (bilateral)	8 (16%)
Frequency of headache	2- 3 per week	25 (50%)
	1 per week	4 (8%)
	2- 3 per month	14 (28%)
	1 per month	1 (2%)
	1 per 2 months	6 (12%)
Psychiatric co-morbidity	Anxiety disorder	16 (32%)
	Depression	8 (16%)
	Seizure disorder	2 (4%)
	No co-morbidity	24 (48%)

Age of onset was same in 10-19 years and 20- 29 years group i.e. 20 (40%) in each. The mean age of onset was 22.76 ± 7.899 years. The commonest type of migraine was migraine without aura in 2/3rd number of cases. Throbbing bilateral headache was the commonest presentation in 28 (56%) followed by throbbing unilateral headache in 12 (24%). Half number of participants reported frequency of headache 2-3 per week.

Psychiatric co-morbidity was found in 26 (52%) subjects among which the most common co-morbidity was anxiety disorder in 16 (32%) followed by depression in 8 (16%).

Presence of provoking factors was found in 38 (76%) subjects. Light, smoke, smell, noise and lack of adequate sleep were the common provoking factors found in 50%, 42%, 36%, 32% and 18% respectively. Most participants reported presence of more than one provoking factors.

Tab 3: Frequency of provoking factors in migraine patients

Variables	Frequencies N (%)
Fatigue	5 (10%)
Lack of adequate sleep	9 (18%)
Menstruation	1 (2%)
Specific food/drinks	4 (8%)
Not eating on time	4 (8%)
Smoke	21 (42%)
Smell	18 (36%)
Light	25 (50%)
Noise	16 (32%)
Provoking factor not reported	12 (24%)

DISCUSSION

In our study the mean age of subjects was 28.60 years and more than 2/3rd numbers of subjects were from 20 to 39 years age group. Similar observation was made by Gupta U et al. in their study in chronic migraine patients who found mean age of patient population was 30.27 years with 89% (38) of them belonged to age group of 15- 35 years⁹.

Out of a total of 50, 44 (88%) participants were female. Similar finding was noticed in an earlier study by Gupta et al⁹. Mitsikostas and Thomas also reported that 70% of their migraine sufferers were female and rest 30% patients were male¹⁰. Highest number i.e. 17 (34%) of subjects were illiterate and more than half patients were housewives followed by student in 10 (20%). The findings could be due to the reason that this study comprises higher number of female patients. Literacy rate of female in Nepal is only 34.9%¹¹.

In this study family history of migraine was found in 20 (40%) which indicates that migraine has a heritable tendency. Studies of twins indicate a 34% to 51% genetic influence of likelihood to develop migraine headaches¹².

Mean age of onset in this study is 22.76 years and in most of subjects onset was in second and third decade. Migraines most commonly start between 15 and 24 years of age and occur most frequently in those 35 to 45 years of age¹². The commonest type was found to be migraine without aura in 33 (66%) participants. This finding is similar to the study done by Seilberstein et al., who reported migraine with aura in 21.5% their headache cases and migraine without aura in 78.5% of their migraine cases¹³.

More than half of our study subjects had psychiatric co morbidity. Out of which anxiety disorder was most common in 16 (32%) followed by depression in 8 (16%). Studies in both clinical and community-based settings have demonstrated an association between migraine and a number of specific psychiatric disorders¹³. Higher psychiatric co morbidity was also reported by Gupta U et al⁹. The burden of migraine and the challenge in managing it are increased by the comorbid psychiatric conditions that occur in association with it¹⁴. Beatriz Shand et al in their study in primary headache patients reported depression in 26.3 % and anxiety in 20.8 %¹⁵.

Presence of provoking factors was found in 38 (76%) subjects. Light, smoke, smell, noise and lack of adequate sleep were the common provoking factors found in 50%, 42%, 36%, 32% and 18% of cases respectively. Similar findings were reported by Ehsan K et al. who found that stress or psychological upset were

the commonest triggering factors (80%), followed by physical activity (68%), change in weather (65.5%), relation to fasting (65%), smells such as smoke or odors (56.5%), menses in women (50%) in addition women using contraceptive pills also had more migraine attacks (10%), other factors such as lights (40%) which can also be an exaggerating factor for already present headaches⁴. All are important factors that can establish the diagnosis of migraine, and avoidance of such factors is part of migraine management.

CONCLUSION

Migraine predominantly affects females with common age of onset in second and third decade. In significant number of patients, family history of migraine headache is present. Migraine without aura is commonest type. Psychiatric co-morbidities are common in migraine patients. Anxiety disorder and depression are the commonest co-morbidities. Around 3/4th of migraine patients found to have some provoking factors. The common provoking factors are light, smoke, smell, noise and lack of adequate sleep. Avoidance of provoking factors and early detection and management of psychiatric co morbidities can result in better outcome.

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Prevalence of Hypertension in Hemorrhagic Stroke at NGMCTH, Kohalpur

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ABSTRACT

Aim : To study the prevalence of hypertension in hemorrhagic stroke in patients admitted in medical units of Nepalgunj Medical College Teaching Hospital (NGMCTH), Kohalpur.

Background : Hemorrhagic stroke has remained a serious disease despite recent advances in medical treatment. It is one of the most common emergencies encountered in clinical practice and predominantly affects elderly population leading to chronic disability and dependency. This study was designed to identify hypertension as a major cause of Intracerebral hemorrhage (ICH).

Material and methods : This is a cross sectional descriptive study conducted in the department of medicine of NGMCTH, Kohalpur between June 2017 and November 2017. A total of 51 patients were included in the study. History and clinical examinations were recorded. Plain CT scan head, ECG and chest x-ray PA view were done and the data were recorded and analysed.

Result : The age of patients ranged from 48 to 89 years with the mean age of 66.72 years. Among 51 patients, high BP at presentation along with ECG showing LVH was seen in 38 patients (74.5%) and chest x-ray PA view showing cardiomegaly was seen in 31 patients (60.8%). Most commonly involved ethnic group was Tharu (45.1%).

Conclusion : Hypertension is a major cause of ICH. So, early detection and regular treatment of hypertension with appropriate antihypertensive drugs and life style modification would prevent ICH.

Key words: Hemorrhagic stroke, hypertension, stroke

INTRODUCTION

Intracerebral hemorrhage accounts for 10% of all strokes and is associated with 50% fatality rate. Incidence rates are high in Asians and blacks. Hypertension, trauma, cerebral amyloid angiopathy cause the majority of these hemorrhages. Hypertensive intraparenchymal hemorrhage results from spontaneous rupture of small penetrating artery deep in brain. The most common sites are basal ganglia (especially putamen), thalamus, cerebellum and pons. Blood may dissect into the ventricular space, which increases morbidity and may cause hydrocephalus. Most develop over 30 – 90 minutes. After 1- 6 months it is resolved to slit-like orange cavity lined with glial scar and hemosiderin-laden macrophages.¹

Hemorrhagic stroke is one of the most important causes of severe disability. In NGMCTH, Kohalpur, Nepal, it comes among

the most common disease admitted in medical wards and also one of the commonest cause of hospital death.

Hypertension is a known cause for hemorrhagic stroke and by modifying this factor clinicians have been trying to decrease morbidity & mortality. The mortality rate has declined in many developed countries due to effective control of hypertension.² Studies about prevalence of hypertension in hemorrhagic stroke in Nepal are very few and it is not known whether hypertension is major cause or not. Hence this study has been taken up.

MATERIAL AND METHODS

This is a hospital based cross sectional study conducted in 51 patients who were admitted as hemorrhagic stroke in medical unit of NGMCTH, Kohalpur between June 2017 to November 2017. A detailed history, general examination and complete nervous system examination was done and hemorrhagic stroke was confirmed by plain Computerized Tomography (CT) scan of head. Hyperdense area within the cerebral substance was taken as CT criteria for the diagnosis of intracranial hemorrhage. Informed consent of the patient and permission from Institutional review Committee (IRC) of the hospital was also obtained. All the cases of Extradural, subdural, subarachnoid hemorrhage and traumatic intracranial hemorrhage were criteria for non-inclusion to the study.

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Blood pressure (BP) was measured by standard mercury sphygmomanometer; patients were labeled hypertensive if they fulfilled one of the following criteria:

- i. Past history of hypertension with or without regular treatment.
- ii. Systolic BP ≥ 140 mmHg or diastolic BP ≥ 90 mm Hg,³ along with Left Ventricular Hypertrophy (LVH) by Electrocardiography (ECG) or cardiomegaly by chest X-ray Posteroanterior (PA) view.
- iii. Hypertensive changes in fundoscopy.
 - Grade I – Arteriolar thickening, tortuosity and increased reflectiveness (silver wiring)
 - Grade II – Grade I plus constriction of veins at arterial crossings (arteriovenous nipping)
 - Grade III- Grade II plus evidence of retinal ischemia (flame shaped or blot haemorrhage and cotton wool exudates)
 - Grade IV – Grade III plus papilloedema.⁴

High BP at presentation most likely reflects altered hemodynamics due to intracerebral mass effect or acute changes in catecholamines. So considering them as hypertensive would give false positive result.

Thus for more accurate results ECG and chest x-ray PA findings were taken into account.

Sokolow-Lyon criteria were used to diagnose LVH in ECG.⁵ Cardiothoracic ratio $\geq 1:2$ were considered cardiomegaly on chest X-ray PA view.⁶

Data were analysed using standard statistical method including SPSS 17.0.

RESULT

A total of 51 patients with the diagnosis of hemorrhagic stroke were included in the study. Age ranged from 48 to 89 years and mean age was 66.70 years. Among 51 patients, 26 (51%) were male, 25 (49%) were female and M:F ratio was 1.04:1. Seven major ethnic groups were detected and majority of patients were Tharu (45.1%) followed by Brahmins (11.8%) as shown in table 1.

	N	%
Age (Year)		
< 50	3	5.9%
50 - 60	10	19.6%
60 - 70	19	37.3%
≥ 70	19	37.3%
Mean	66.7 $\pm$ 10.2	
Minimum	48	
Maximum	89	

Gender	Male	26	51.0%
	Female	25	49.0%
Ethnicity	Brahmin	6	11.8%
	Chhetri	5	9.8%
	Magar	4	7.8%
	Muslim	3	5.9%
	Newar	5	9.8%
	Others	5	9.8%
	Tharu	23	45.1%

Table 1: Demographic characteristics of study population (n=51)

Majority of the patients (43.1%) had basal ganglia hemorrhage followed by lobar hemorrhage (24%) as shown in figure 1.

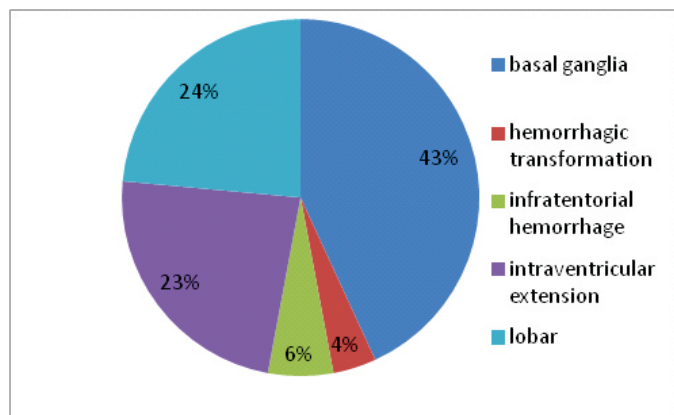


Figure:1 Anatomical distribution of hemorrhagic Stroke patients (n=51)

Out of 51 patients, 17 (33.3%) had past history of hypertension, 7 patients (13.7%) had no history of hypertension and 27 patients (52.9%) did not know whether they had hypertension or not in the past. Among this 17 patients, only 4 (23.5%) were on regular medication as well as periodic assessment of hypertension and 13 (76.5%) were taking medicine irregularly. Out of total 51 patients, hypertension at presentation was present in 42 (82.4%) patients, among them, 38 (74.5%) patients had LVH in ECG and 31 (60.8%) had cardiomegaly in chest X-ray PA view, 35 (68.6%) had hypertensive changes in fundoscopy, which suggest that 38 (74.5%) had chronic hypertension by ECG correlation and 31 (60.8%) had chronic hypertension by chest x-ray PA correlation and 35 had chronic hypertension by fundoscopy correlation, as shown in table 2. Out of 35 patients who had hypertensive changes on fundoscopy, 22 (62.86%) had grade I, 9 (25.7%) had grade II and 4 (11.43%) had grade III hypertensive retinopathy.

		N	%
History of hypertension	Yes	17	33.3%
	No	7	13.7%
	Don't Know	27	52.9%
Treatment of hypertension (n=17)	Regular	4	23.5%
	Irregular	13	76.5%
Blood pressure at presentation	Normal	9	17.6%
	HTN	42	82.4%
ECG	Normal	13	25.5%
	LVH	38	74.5%
Chest X-Ray (PA view)	Normal	20	39.2%
	Cardiomegaly	31	60.8%
Hypertensive changes in funduscopy	Yes	35	68.62%
Grade – I (n=35)		22	62.86 %
Grade – II (n=35)		9	25.71%
Grade – III (n=35)		4	11.43%

Table 2 : Clinical profile of hemorrhagic stroke patients (n=51)

Maximum systolic blood pressure (SBP) at presentation was 220 mmHg, minimum was 120 mmHg and mean SBP was 174 mmHg. Likewise, maximum diastolic blood pressure (DBP) at presentation was 140 mmHg, minimum was 80 mmHg and mean DBP was 103 mmHg, as shown in table 3.

Blood Pressure		Male (n=26)	Female (n=25)	Total (n=51)
Systolic BP	Mean±SD	173.8 ±24.1	174.2 ±27.8	174.01±25.7
	Minimum - Maximum	120 - 220	120 - 200	120 - 220
Diastolic BP	Mean±SD	104.61±15.2	101.8±16.1	103.2±15.6
	Minimum - Maximum	80 -140	80 -140	80 -140

Table 3: Blood pressure at presentation

DISCUSSION

Cerebrovascular disease is the third most common cause of death after coronary artery disease and cancer in western countries.⁷ The overall incidence of stroke increases with age in both sexes.¹

Present study included 51 patients. Incidence of hemorrhagic stroke was more in age group above 60 years and mean age was 66.70 years. Similar report was shown by Nechikkat S. et al⁸ in which most common age group was in 61-70 years and mean age was 67 years. Arrissen MJ. et al⁹ and Broderich J. et al¹⁰ in their study also found increasing age as a risk factor for ICH.

In this study, 51% were male and 49% were female showing slight male predominance. In the study done by Arrissen MJ et

al,⁹ also concluded that ICH was most common in male than female.

Regarding ethnicity, majority of patients were Tharu (45.2%) followed by Brahmins (11.8%). Such large dominance of Tharu population could be due to lack of hypertension awareness, high salt taking habits and demography of this area. Lee KR et al¹¹ in 1997 found hypertensive intracerebral hemorrhage more common among Blacks and Asians than Whites. The present data suggest that racial and ethnic factor might play some role in ICH occurrence since Tharus are definitely not of white race. In this study, hypertension at presentation along with LVH in ECG was found in 74.5%, cardiomegaly in chest X-ray PA view in 60.8% and hypertensive changes in funduscopy in 68.62%. This is comparable to the study done by Herekar A et al¹² which also showed hypertension in 71.4% of ICH. Similarly Brott T et al¹³ in 1986 found hypertension with LVH by ECG or cardiomegaly by chest x-ray in 56% of ICH patients.

Kumar S in recent study investigated possible etiology in 439 patients and found hypertension in about 80% of the patients.¹⁴ Similarly, Arissen MT et al,⁹ An SJ et al¹⁵ in 2017, R Muller et al¹⁶ in 1981 and Juvela S in¹⁷ 1995 found hypertension as a leading cause of ICH.

Past history of hypertension was present in 17 patients (33.3%), out of them 13 (76.5%) were on irregular treatment and developed ICH. So early detection and regular treatment of hypertension is mandatory to reduce the incidence of ICH.

CONCLUSION

The present study comprised of 51 patients out of which 51% were male and 49% were female, showing slight male predominance. Maximum incidence of ICH was seen in subjects above 60 years. Hypertension was present in 74.5% after correlating BP at presentation with LVH shown by ECG. This concludes that hypertension is the major cause of ICH. Therefore, early detection and regular treatment is warranted for the prevention of ICH. On the other hand, majority of patients developing ICH were Tharu (45.1%). The reason behind might be lack of awareness to hypertension, high salt taking habit in these community and demography of this area where 18% of population is of Tharu. In addition to this, racial and ethnic factor may play some role in ICH occurrence.

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Profile of Colonoscopy Findings: A single Centre Experience

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ABSTRACT

Background: About 30% of patients presenting to surgical outpatient department has lower gastrointestinal (LGI) symptoms. Colonoscopy is a low risk and at the same time investigation of choice in these patients which allows visualization of the entire colon and the terminal portion of ileum. This study was done to evaluate the role of colonoscopy.

Methods: This was an observational, hospital based study from February 2014 to March 2018, carried out at Nepalgunj Medical College and Teaching Hospital.

Results: 245 patients underwent colonoscopy, among them 62.85% were male and 37.14% were female with the M:F ratio being 1.6:1. The youngest patient undergoing colonoscopy was 21 and the eldest was 78 with the mean age being 53.6±12. The common indications were per rectal bleeding (49.38%), alteration in bowel habit (40.49%), and constipation (13.46%). In 85.71% patients entire large bowel could be visualized. In 21.22% no abnormality was detected. Haemorrhoids (27.34%) were the most common findings and then nonspecific inflammatory bowel diseases (17.55%), colorectal polyps (15.51%) and colorectal cancers (14.28%). Biopsy was done in 39.51% patients and the most common finding was nonspecific inflammatory bowel disease, 36.08% had adenocarcinomas and rest had ulcerative colitis, juvenile and hamartomatous polyps.

Conclusion: Colonoscopy is a safe and effective investigation in diagnosing as well as managing the patients with LGI symptoms.

Key words: Colonoscopy, bleeding per rectum, haemorrhoids, biopsy

INTRODUCTION

Lower gastrointestinal (LGI) diseases cause lot of morbidity and mortality. Colonoscopy plays a vital role in screening, diagnosis and treatment of these conditions. In Nepal, like in other developing countries, this facility is rarely available. Colonoscopy allows visualization of the entire large bowel and a part of the terminal ileum making the diagnosis easier and also provides added advantage of taking a specimen for biopsy. The indications of colonoscopy are LGI bleeding, alteration in bowel habit and suspicion of malignancy¹.

Fecal occult blood is a simple and quick test for the presence of blood in stool. A positive test is a strong indication for

colonoscopy². Detection of polyp is not an infrequent finding and polypectomy is a routine part of colonoscopy³. This study was carried out to evaluate the role of colonoscopy in patients presenting with LGI symptoms

MATERIALS AND METHODS

It was an observational, hospital based study from February 2014 to March 2018, carried out at Nepalgunj Medical College and Teaching Hospital, department of surgery. All patients who underwent colonoscopy were included. Patients below 18 years age and patients with severe cardiopulmonary disease were excluded. Informed consent was taken from the patients and ethical clearance was also taken from the ethical board. Bowel preparation was done with polyethylene glycol. Colonoscopy was done without sedation. Sedation was given only when needed. The procedure was performed using a fiberoptic video colonoscope (Fujinon).

RESULTS

245 patients underwent colonoscopy for various LGI symptoms during the study period. There were 154 (62.85%) males and 91 (37.14%) females with the male to female ratio (M:F) of 1.6:1. The age ranged from 21 to 78 with the mean age of 53.6 ±12. The most common indication was per rectal bleeding followed by recent alteration in bowel habit (Table I).

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189 (77.14%) patients underwent the procedure without sedation but in remaining 56 (22.85%) patients sedation was required. In 210 (85.71%) patients the entire large bowel up to the caecum was visualized. In 35 (14.28%) patients caecum couldnot be reached. This was mostly because of the constricting malignant growth in the caecum and the rectum and in few of the cases because of the poor bowel preparation.

Indications	n (%)
Per rectal bleeding	121 (49.38%)
Altered bowel habit	49 (40.49%)
Constipation	33 (13.46%)
Chronic diarrhoea	13 (5.30%)
Lower abdominal pain	13 (5.30%)
Anemia for evaluation	9 (3.67%)
Abdominal mass	7 (2.85%)

Table I: Indications for colonoscopy

Haemorrhoids were the most common findings (27.34%), followed by nonspecific proctocolitis and colitis (Figure 1)

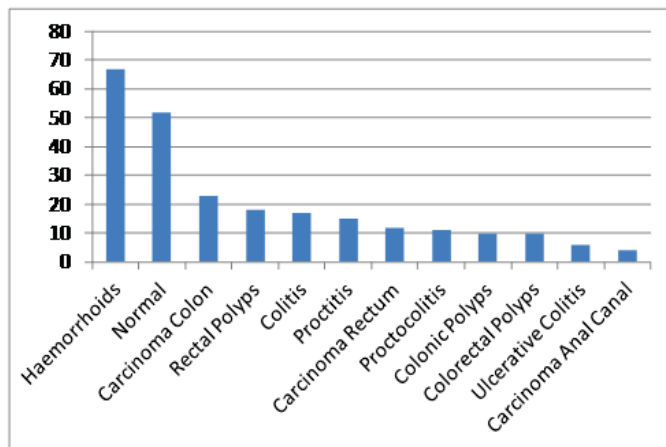


Figure 1: Colonoscopy findings

In 97 (39.51%) patients biopsy was done for histopathological examination. The findings of histopathological examinations are listed in Table 2. None of the patients had complication.

Histological findings	n (%)
Nonspecific inflammatory bowel disease	47 (48.45%)
Adenocarcinoma	35 (36.08%)
Ulcerative colitis	6 (6.18%)
Juvenile polyp	4 (4.12%)
Squamous cell carcinoma	3 (3.09%)
Hamartomatous polyps	2 (2.06%)

Table II: Histological findings

DISCUSSION

Colonoscopy is the investigation of choice in the diagnosis of the disease affecting the colon and rectum. The most common indication for colonoscopy was per rectal bleeding followed by alteration in bowel habit and constipation. There was a male dominance which is in consistency with other studies⁴. The mean age in this study was 53.6. The relatively younger age group may be explained by the commonest findings being haemorrhoids which occur commonly after the fifth decade of life⁵. The colonoscopy was normal in 52 (21.22%). The rate of normal findings were higher in the beginning when it was started and with time started decreasing which may be due to improvement in patients selection. Other similar studies also showed same data⁶.

The most common finding was haemorrhoids, followed by nonspecific inflammatory bowel disease, colorectal polyps and colorectal carcinomas. The prevalence of haemorrhoids was similar to other studies^{6, 7}. The second common finding was nonspecific inflammatory bowel disease. Many of them were of infective etiology and resolved with antibiotics, antiamoebic and antihelminthics.

The occurrence of colorectal polyps is generally thought to be lower in this part of the world and in this series the colorectal polyps were third common finding commonly found in younger patients. We found a prevalence of 15.51% which is in consistent with other studies⁸. All of them were less than five in numbers and none showed any morphologic or histologic characteristics of any syndromic colorectal diseases. The incidence of colorectal cancer in Nepal is uncertain. In our study it was found to be in 14.28% patients. Five in one thousand undergoing colonoscopy have serious complications, most common being the perforation⁹. There were no complications recorded in this study.

CONCLUSION

Colonoscopy is an important modality of investigation in patients with LGI symptoms. The diagnostic yield is significant with an added advantage of biopsy and therapeutic intervention like polypectomy, provided facilities and expertise are available.

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Atopic Dermatitis and its Severity Correlation With Absolute Eosinophil Counts

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ABSTRACT

Background : Atopic dermatitis is one of the common skin disease affecting children and adults. Atopic dermatitis is a common and difficult to manage allergic condition. Till date severity of atopic dermatitis is graded only by clinical findings, which has greater means of individual variation, so a laboratory value may uniform the grading and eosinophils are always thought to be associated with allergic conditions.

Objectives : To assess the severity of atopic dermatitis by peripheral blood eosinophil count and SCORAD index, and also to explore relationship between personal history of atopy, family history of atopy, severity of disease and absolute eosinophil count

Material and Method : This study is a hospital based Cross sectional descriptive study conducted in the Department of Dermatology, Venereology and Leprology of Nepalgunj Medical College Teaching Hospital, Kohalpur between March 2017 to February 2018. Total of 53 patients fulfilling the criteria of UK refinement of Hanifin and Rajka's criteria for atopic dermatitis presented to the OPD of dermatology department at Kohalpur were included in the study.

Result : A total of 53 patients were enrolled, mean age of the patients was 6.08 (SD 2.83) years and mean age of onset of disease was 2.95 (SD 1.57) years. Mean AEC was 537.17(SD 343.92)/mm³ and higher mean AEC was significantly (P<0.001) associated with greater severity of disease and similarly presence of personal history of respiratory atopy was also significantly (P<0.001) associated with higher mean AEC. Per patient AEC and severity of disease according to SCORAD index showed reasonable positive correlation (r=0.514 and P<0.001).

Conclusion: Severity of disease and presence of respiratory atopy are important factors determining peripheral blood eosinophilia in AD patients. Although larger studies are require to replicate these findings.

Key Words: Atopic dermatitis, SCORAD index

INTRODUCTION

Atopic dermatitis (AD) is an inflammatory, chronic or chronically relapsing, non-contagious and intensely pruritic skin disease often occurring in families with other atopic diseases (bronchial asthma, allergic rhino- conjunctivitis)¹. The clinical manifestations of atopic dermatitis vary with age; three stages can often be identified. In infancy, the first eczematous lesions usually emerge on the cheeks and the scalp. Scratching, which frequently starts a few weeks later, causes crusted

erosions. During childhood, lesions involve flexures, the nape, and the dorsal aspects of the limbs. In adolescence and adulthood, lichenified plaques affect the flexures, head, and neck. In each stage, itching that continues throughout the day and worsens at night causes sleep loss and substantially impairs the patient's quality of life². It is one of the common skin disease with a prevalence of 10% to 20% in children and 1% to 3% of adults³. AD is a paradigmatic skin disease that is the product of a complex interaction between various susceptibility genes, defects in skin barrier function, a specific immunologic response, and a clear interaction with infectious agents and the host environment⁴. Two hypotheses concerning the mechanism of atopic dermatitis have been proposed. One holds that the primary defect resides in an immunologic disturbance that causes immunoglobulin E (IgE) mediated sensitization, with epithelial-barrier dysfunction regarded as a consequence of the local inflammation. The other proposes that an intrinsic defect in the epithelial cells leads to the barrier dysfunction; the immunologic aspects are considered as an epiphenomenon². Management of disease consists of skin care, identification and elimination of flare factors, anti-inflammatory agents⁵. The role of eosinophils in AD is

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suggested by the presence of peripheral blood eosinophilia, increased level of serum and urinary eosinophilic granular proteins in AD patients and eosinophilic infiltrates in AD lesions. It is further supported by information that links AD to cytokines and chemokines associated with production, recruitment, and activation of eosinophils⁶.

In 1980s Hanifin and Rajka proposed list of characteristic feature (criteria) of AD to establish unity in the clinical concept of AD^{7,8}.

It is said that Charles Darwin who propounded the 'theory of evolution' suffered from atopic dermatitis and that the legendary dermatologist Hebra treated him⁹.

In 1994, the UK Working Party refined Hanifin & Rajka's criteria into a concise and validated set of survey-based diagnostic criteria useful for the purposes of epidemiologic studies¹⁰⁻¹².

SCORAD index is defined as sum of objective parameter and subjective parameter in which objective parameters includes extent of area involvement (A) and intensity of symptoms (erythema, oedema, population, excoriation, lichenification, oozing/crusting & dryness (B). The subjective parameters (C) include pruritus and sleeplessness. The extent of body surface area involvement is calculated by rules of nine, and the extent is graded (0-100 cm²). The intensity of each symptom is graded as (0-3). Subjective symptoms are graded as 10 cm visual analogue scale. According to the SCORAD index formula generated by European Task Force on Atopic Dermatitis (ETFAD) is $A/5 + 7B/2 + C$, where A= area (0-100), B= intensity of symptoms (0-18), C= subjective symptom (0-20)¹³.

Eosinophils are cells of the immune system that are most commonly known for their role in defense against parasites and, along with basophils and mast cells, as mediators of allergy and asthma. They are derived from CD34+ hematopoietic progenitor cells in the bone marrow and represent approximately 1–6% of white blood cells. They can persist in the circulation for 8–12 h and in tissue for 8–12 days in the absence of stimulation⁶. Under the physiologic conditions, the skin does not harbor eosinophils¹⁴, but in disease like AD, eosinophil can be found in lesional skin. Proliferation, immigration, and local activation of eosinophils are characteristic features of AD. T cell activation by antigen-presenting cells leads to production of Th2 cytokines, such as IL-4, IL-5, and IL-10, that support humoral immunity and eosinophil functions⁶. Eosinophilia (i.e., more than 500 eosinophils per microliter of blood) has been shown to be present in most patients with AD and correlate

with the disease activity¹⁵. Also, more recent studies suggested that peripheral blood eosinophilia could be used as a diagnostic tool in differentiating atopic AD from non-atopic AD¹⁶ and that AD patients with other symptoms of atopy and family history of atopy have increased blood eosinophilia.

Another potentially important role for eosinophils in AD is based on the study that showed Th2 cytokines can stimulate eosinophils to produce IL-12¹⁷. Therefore; eosinophils may promote a switch from a Th2-like immune response, in acute lesions, to a Th1-like immune response, in chronic lesions of AD¹⁸.

From all these evidences we can draw a fair inference that eosinophils and its granular proteins plays an important role in pathogenesis and activity of disease in atopic dermatitis patients.

MATERIALS & METHODS

This study is a hospital based Cross sectional descriptive study conducted in the Department of Dermatology Venereology & Leprology, Nepalgunj Medical College Teaching Hospital Kohalpur, between March 2017 to February 2018. Informed consent was taken from all the patients or parents of the patient (if age of the patient is less than 18 years) included in the study. Before initiating the study the proposal of the study was submitted to the Institutional Review Board. 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, investigation was performed, and the details were recorded. Altogether 53 patients were included in the study. The severity of atopic dermatitis was stratified as minimal, mild, moderate and severe as per the SCORAD index. Patients on steroid use were excluded from the study. The correlation between the severity of atopic dermatitis and absolute eosinophil count was estimated using the Karl Pearson's correlation coefficient. Similarly correlation of eosinophil count was done with other variables including personal and family history of atopy using SPSS 20.0 version and tables and graphs were made.

RESULTS

A total of 53 atopic dermatitis patients were included in the study. The age of the patients ranged from 1.5 to 13 years with the mean age of 6.08 ±2.83 years as shown in the figure 1 below. Among the 53 patients of atopic dermatitis, there were

40 (75.47%) males and 13(24.53%) females as shown in figure2. Age of the patient at the onset of the disease ranged from 9 months to 6 years with mean age 2.95 ± 1.57 years.

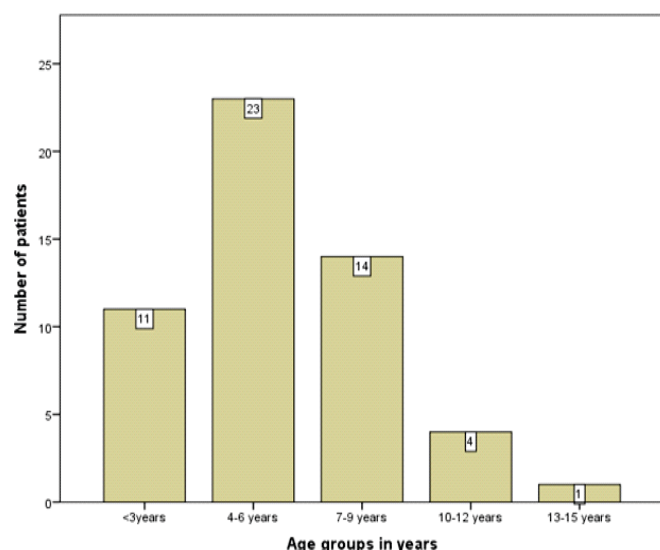


Figure 1

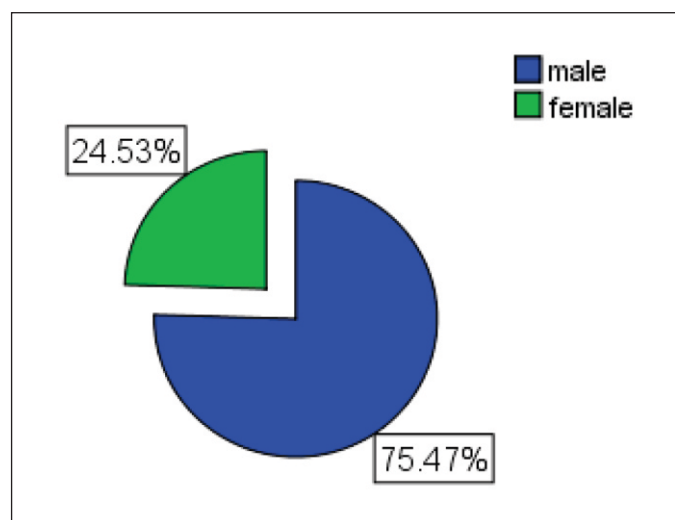


Figure 2

Patients with personal history of atopy

Among 53 patients, 31 patients (58.49%) had history of atopy. Among them 26 patients (49.05%) had allergic rhinitis and 5 cases (9.43%) were diagnosed cases of asthma. Remaining 22 patients (41.51%) did not have history of atopy as shown in fig 3

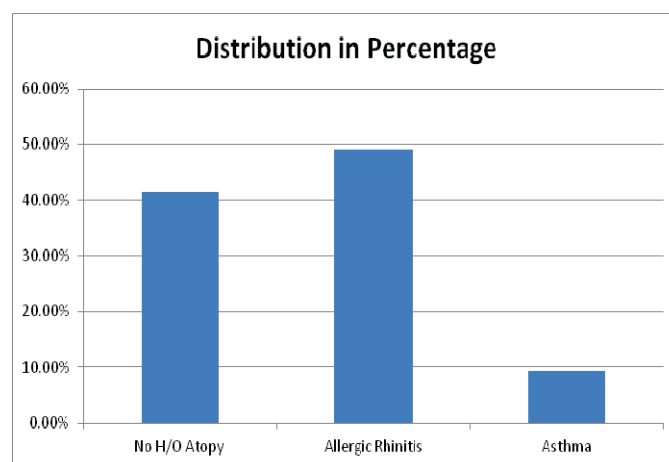


Figure 3

Patients with family history of atopy

In total of 53 patients 14 patients (26.41%) had family history of atopy and 39 patients(73.58%) did not have any family history of atopy. Among 14 patients with family history of atopy 9 patients (16.98%) had mother with history of atopy and 5 patients(9.43%) had sibling with history of atopy as shown in figure 4.

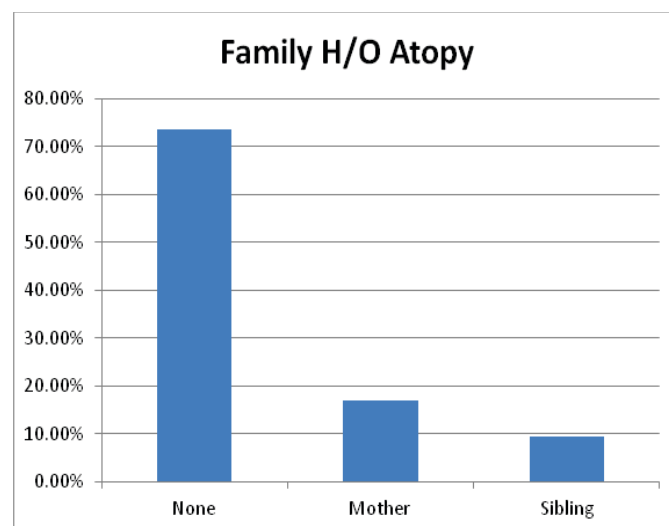


Figure 4

SCORAD index and SCORAD grading

SCORAD of the patients ranged from 9 to 58 with mean SCORAD value 25.11 ± 11.77 . Among them 32(60.4%) patients had mild (SCORAD <25), 18(34%) patients had moderate (SCORAD 25 to 50), 3(5.6%) patients had severe (SCORAD >50) SCORAD grading. (Figure 5)

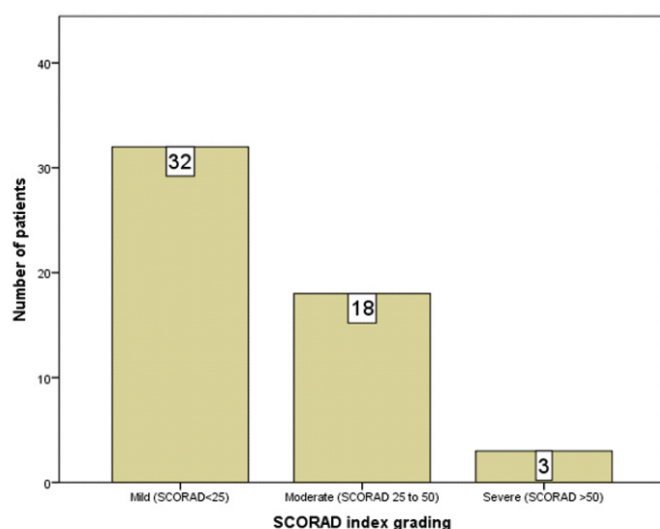


Figure 5: distribution of patients according to severity of disease based on SCORAD index

Absolute eosinophil counts (AEC) on peripheral blood smear

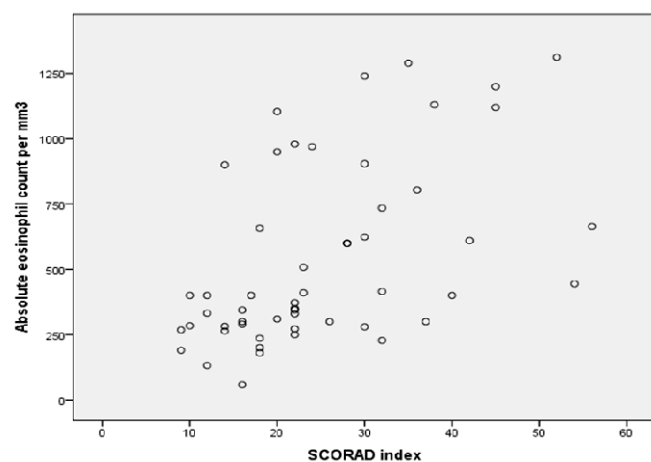
AEC on peripheral blood smear ranged from 58/mm³ to 1312/mm³ with mean eosinophil count 537.17±343.92/mm³. Percentage of eosinophil on peripheral blood ranged from 1% to 10% with mean percentage of 5.41±2.61%.

Correlation and comparison of severity of disease and AEC with different aspects of disease

Correlation of severity of disease (SCORAD index) with AEC. Correlation between severity of atopic dermatitis scored by SCORAD index and AEC showed reasonable positive correlation with Pearson correlation coefficient ($r = 0.514$) and P value 0.0000831.

Table1: Correlation of SCORAD index and AEC

	SCORAD index	AEC	P value
Pearson correlation	1	0.532	0.0000831



Comparison AEC according to severity of disease

Mean values of AEC of the patients were compared between the different severities of groups. Mean AEC values were higher in patients in severe category (807.00) as compared to those in milder categories. A subsequent analysis for statistical significance calculated by one way analysis of variance (ANOVA) showed the difference in mean values to be significant at a p-value of 0.004 (less than 0.05).

Table 2: Comparison of AEC according to severity of disease

Severity of disease	Mean value of AEC per mm ³	P value
Mild	414.67±271.22	
Moderate	710.00±361.95	0.004
Severe	807.00±450.84	
Total	537.17±343.92	

DISCUSSION

Atopic dermatitis is a common and difficult to manage allergic condition. Once thought to be the disease of developed countries with rapid urbanization the prevalence of disease is increasing in developing countries like Nepal. Not many studies are done in regard to atopic dermatitis in Nepal. Different studies have suggested different age of onset for the disease. A study done by Illi S *et al* showed a total of 45% of all cases of atopic dermatitis begin within the first 6 months of life, 60% begin during the first year, and 85% begin before 5 years of age¹⁹. In another study from India mean age of onset of AD was 4.55 years²⁰. In our study mean age of the patient at the onset of the disease was 2.95 (SD 1.75) years. In this study mean AEC on peripheral blood smear was 537.17 (SD 343.92)/mm³ and higher values were associated with greater severity of disease and personal history of respiratory atopy with P value < 0.05. Patients with personal history of atopy showed significant association with higher severity of disease as compared to patients without personal history of atopy. However severity of disease and AEC were not significantly different between patients with and without family history of atopy. Also AEC count and severity of disease showed reasonable positive correlation with Pearson correlation coefficient ($r = 0.514$) and P value < 0.001. Although many exceptions exist where severe cases showed a normal eosinophil level and less severe cases showed higher eosinophil level. Similarly Dhar S *et al*²⁰ found significant difference in eosinophil count between AD and control group, they also found significant positive correlation between severity of disease and AEC.

Another study done by Tsuda S *et al*²¹, evaluated the role of eosinophils in atopic dermatitis by correlating levels of serum eosinophil cationic protein (ECP), clinical activity, eosinophil count and IgE level found a positive correlation between the number of peripheral blood eosinophils and serum ECP levels in severe cases ($r=0.67$, $p < 0.05$). Similarly more recent study from Taiwan showed positive correlation between SCORAD index and total eosinophil count ($r=0.489$, $p<0.001$), serum IgE ($r=0.317$, $p=0.028$), IL-16 ($r = 0.321$, $p=0.026$) in acute exacerbation phase²². However, they did not mentioned role personal and family history of atopy in AEC, which also played a significant role in some of above mentioned studies and also in our study.

CONCLUSION

The study demonstrate that blood eosinophil levels correlate with disease severity in patients with AD, although many exceptions exist where severe cases show a normal eosinophil level and less severe disease has higher eosinophil level. By correlating blood eosinophil levels with a personal history of respiratory atopy, we found that patients with atopic dermatitis and a personal history of respiratory atopy showed significantly higher eosinophil levels than patients without personal history of respiratory atopy. Thus, it is evident that the capacity for blood eosinophil elevation differs not only between the severities of disease but also between patients with and without history of respiratory atopy.

In summary, we conclude that severity of disease and presence respiratory atopy is important factors determining peripheral blood eosinophilia in AD patients.

Limitations of the study:

There was no control group. Hence the AEC between AD patients and non-atopic dermatitis patients couldn't be compared.

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Pityriasis alba in a 7 year old boy
with atopic dermatitis



Keratosis pilaris in right arm in a child
with atopic dermatitis

Aerobic Microbiological Profile in Vaginal Discharge Syndrome

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ABSTRACT

Introduction : Vaginal discharge syndrome consists of abnormal vaginal discharge, vaginal itching, painful urination and painful sexual intercourse, among them abnormal vaginal discharge is one of the most common clinical symptoms for which most of the female seek care for management in gynaecology and obstetrics outpatient department. Abnormal vaginal discharge in the women of reproductive age can lead to subfertility, ectopic pregnancy, early rupture of membrane, chronic pelvic pain and increases susceptibility for HIV virus and oncogenic virus.

Objective : To identify aerobic microflora associated with vaginal discharge and find out most useful drugs for it.

Material and Methods : A Hospital based cross sectional study was carried out at Nepalgunj Medical College Teaching Hospital, Kohalpur in November 2016 to November 2017. Ninety- five women who were at reproductive age group with vaginal discharge and met inclusion criteria participated in the study. Samples were taken from posterior fornix of vagina with the help of cotton swab following the confirmation of vaginal discharge by per speculum examination, culture and sensitivity was done.

Result : The mean age of participants was 32.7±8.1. Out of 95 participant's samples, aerobic vaginal microfloras were grown in 18 (18.94%) participants and 77 (74.73%) samples was found to be sterile. E.coli and staphylococcus aureus (predominant aerobic vaginal flora) was grown in 7(38.88%). E.coli was sensitive with all available antibiotics in majority of samples showed sensitive to ciprofloxacin, ceftriaxone, tobramycin and meropenam i.e 6 (85.71%) each followed by cefixime and cefpodoxime 5(71.42%), least sensitive with doxycycline 4(57.14%).

Similarly, in majority of the samples Staphylococcus aureus was also found to be sensitive with doxycycline, ceftriaxone and meropenam 7(100%) each followed by tobramycin in 6(85.71%), ciprofloxacin and cefixime 2 (28.58%), least sensitive with cefpodoxime 1(14.29%). Meanwhile Ciprofloxacin and tobramycin 2(100%) found to be more effective for klebsiella pneumoniae and doxycycline, meropenam, cefixime and cefpodoxime was found to least effective 1(50%). Chloramphenicol was the only drug sensitive to streptococcus in total collected samples. However Acinetobacter was sensitive with ceftriaxone, ciprofloxacin and doxycycline 1(100%) each but resistant with rest of the antibiotics like meropenam, tobramycin, cefixime and cefpodoxime 1(100%). Most microorganisms were found to be sensitive with ceftriaxone, tobramycin and meropenam 14 (77.77%) and was followed by doxycycline 13 (72.22%) and ciprofloxacin in 11 (61.11%). Cefpodoxime 11(61.11%) and cefixime 10 (55.55%), they found poorly in sensitivity test.

Conclusion : Bacterial culture and its sensitivity in vaginal discharge should be done not only because of its troublesome symptoms but for its complications like subfertility, preterm delivery, ectopic pregnancy and it's increased susceptibility for HIV and oncogenic virus. E.coli and staphylococcus were the predominant bacteria found in present study and were followed by klebsiella pneumoniae, streptococcus and acinetobacter. In this study, Ceftriaxone(85.7%) and meropenam (100%) were found to be more effective for E.coli and staphylococcus aureus respectively, ciprofloxacin could be used as a choice of drugs for E.coli (sensitivity 85.7%). However for staphylococcus, doxycycline was a better option with 100% sensitivity.

Key word: aerobic culture of vaginal flora, vaginal discharge syndrome

INTRODUCTION

Vaginal discharge syndrome (VDS) is the most common cause for which the women seek care in gynaecology outpatient

department. Vaginal discharge culture was performed to find out the common microflora and its sensitivity to different antibiotics. Most of the study report trichomonas vaginalis, bacterial vaginosis, and candidiasis as the leading cause. However gonococcal and chlamydial infection are also found associated with VDS but to a lesser extent¹.

The vaginal discharge is the result of inflammation of vulva, vagina, cervix mostly due to infection but some time allergy to latex condoms or spermicidal lotions and hidden genital malignancy can cause it. Hence it is very important to exclude other cause and a culture and sensitivity is essential.

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METHODOLOGY

This cross sectional study was conducted at Nepalgunj Medical College and Teaching Hospital Kohalpur, in the Department of Obs/gyn. Sample size of 95 patients who came with vaginal discharge during the period from November 2016 to November 2017.

After taking consent with the patients, samples were taken from posterior fornix of vagina with the help of sterile cotton swab. Samples were collected in sterile container. Patients treated with antibiotic within 2 weeks, diagnosed case of immunosuppressive, diabetics, pregnancy and malignant condition were excluded from study. As there was no facility for the anaerobic culture here, only aerobic culture was done.

RESULT

A total no. of 95 patients was included in the study who met inclusion criteria. Mean age of participants was 32.7 ± 8.1 .

Table 1: Age distribution of study participants (n=95)

Age group (Years)	N	%
< 20	4	4.2
20-30	31	32.6
30-40	36	37.9
40-50	22	23.2
>=50	2	2.1
Total	95	100
Mean age $\pm$ SD	32.7 $\pm$ 8.1	
Age range	16 - 55	

Figure 1 Pie chart showing the percentage of aerobic bacterial growth from the samples that were collected.

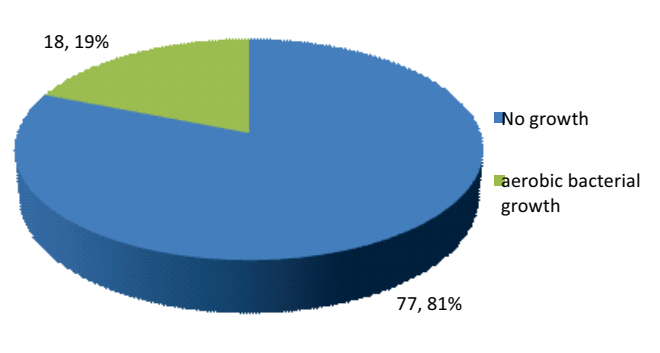


Table 2 Bacteria grew in culture media

Aerobic pathogen	Frequency	Percentages
Acinetobacter	1	5.56
E.coli	7	38.88
Klebsiella	2	11.12
Staphylococcus	7	38.88
Streptococcus	1	5.56
Total	18	100

Out of 18 sample that grew bacteria, E.coli and staphylococcus aureus predominated 7(38.88%) each followed by klebsiella 2(11.12%), acinetobacter and streptococcus 1(5.55%)

Table 3: E.coli tested with antibiotics and its sensitivity

Antibiotics	Sensitivity	Resistant	Total
Ceftriaxone	6(85.71%)	1(14.29%)	100%
Ciprofloxacin	6(85.71%)	1(14.29%)	100%
Doxycycline	4(57.14%)	3(42.86%)	100%
Meropenam	6(85.71%)	1(14.29%)	100%
Tobramycin	6(85.71%)	1(14.29%)	100%
Cefixime	5(71.42%)	2(28.58%)	100%
Cefpodoxime	5(71.42%)	2(28.58%)	100%

E.coli isolates were relatively more sensitive with ciprofloxacin, ceftriaxone, tobramycin and meropenam i.e in 6 (85.71%) each, while 5(71.42%) with cefixime and cefpodoxime and least sensitive with doxycycline 4(57.14%).

Table 4: Staphylococcus aureus and its sensitivity with antibiotics

Antibiotics	Sensitivity	Resistant	Total
Ceftriaxone	7(100%)	0(0%)	100%
Ciprofloxacin	2(28.58%)	5(71.42%)	100%
Doxycycline	7(100%)	0(0%)	100%
Meropenam	7(100%)	0(0%)	100%
Tobramycin	6(85.71%)	1(14.29%)	100%
Cefixime	2(28.58%)	5(71.42%)	100%
Cefpodoxime	1(14.29%)	6(85.71%)	100%

In table 4 shows that staphylococcus was also found to be sensitive with all antibiotics but more with doxycycline, ceftriaxone and meropenam 7(100%) followed tobramycin 6(85.71%), ciprofloxacin and cefixime 2 (28.58%) and least sensitive with cefpodoxime 1(14.29%).

Table 5: Antibiotics sensitivity for klebsiella pneumonia

Antibiotics	Sensitivity	Resistant	Total
Ceftriaxone	0(0%)	2(100%)	100%
Ciprofloxacin	2(100%)	0(0%)	100%
Doxycycline	1(50%)	1(50%)	100%
Meropenam	1(50%)	1(50%)	100%
Tobramycin	2(100%)	0(0%)	100%
Cefixime	1(50%)	1(50%)	100%
Cefpodoxime	1(50%)	1(50%)	100%

It shows that most of the antibiotic found to be sensitive to Klebsiella pneumonia except ceftriaxone. Most effective antibiotics for klebsiella pneumonia found to be ciprofloxacin and tobramycin 2(100%).

Table 6: Streptococcus and its sensitivity with antibiotics

Antibiotics	Sensitivity	Resistant	Total
Ceftriaxone	0(0%)	1(100%)	100%
Ciprofloxacin	0(0%)	1(100%)	100%
Doxycycline	0(0%)	1(100%)	100%
Meropenam	0(0%)	1(100%)	100%
Tobramycin	0(0%)	1(100%)	100%
Cefixime	0(0%)	1(100%)	100%
Cefpodoxime	0(0%)	1(100%)	100%
Chloramphenicol*	1(100%)	0(0%)	100%

*Retested for sensitivity due to resistance with all commonly used antibiotics. Above table shows majority of antibiotics were resistant to streptococcus except chloramphenicol.

Table 7: Acinetobacter and its sensitiveness with antibiotics

Antibiotics	Sensitivity	resistant	Total
Ceftriaxone	1(100%)	0(0%)	100%
Ciprofloxacin	1(100%)	0(0%)	100%
Doxycycline	1(100%)	0(0%)	100%
Meropenam	0(0%)	1(100%)	100%
Tobramycin	0(0%)	1(100%)	100%
Cefixime	0(0%)	1(100%)	100%
Cefpodoxime	0(0%)	1(100%)	100%

It shows that acinetobacter was sensitive with ceftriaxone, ciprofloxacin and doxycycline 1(100%) but resistant with other antibiotics like meropenam, tobramycin, cefixime and cefpodoxime 1(100%)

Table 8: Organism sensitivity with antibiotics

Antibiotics	Sensitivity	Resistant
Ceftriaxone	14	4
Ciprofloxacin	11	7
Doxycycline	13	5
Meropenam	14	4
Tobramycin	14	4
Cefixime	8	10
Cefpodoxime	7	11

Among the isolates maximum no. microorganism were sensitive with ceftriaxone, tobramycin and meropenam 14 (77.77%) having doxycycline 13 (72.22%), ciprofloxacin 11 (61.11%), in most, microorganism were resist with cefpodoxime 11(61.11%), followed by cefixime 10(55.5%) and respectively given in table 8.

Repeat cultures done after one week at the treatment, the drug was continued till culture was sterile.

DISCUSSION

Vaginal discharge syndrome has polyetiological factor which makes it difficult to treat. It leads to psychological problem and sequelae like subfertility, prelabour rupture of membrane and vaginal cuff infection in hysterectomized patients. This study aims to find out role of bacteria as a cause of vaginal discharge. The average age of the participants was 33 years $\pm$ 8.

This study showed an Aerobic Bacterial Vaginitis contributes 18.94%, which correlates with the study conducted by Fan and colleagues, who reported prevalence was 23.74%². Study of Sangeetha KT et. al. reported that the overall prevalence of aerobic flora was 20.8%³. Higher prevalence of aerobic vaginitis was observed by Ling C(80%) and by Razzak et. al. (95.45%)^{4,5} but Donders GG et. al, reported prevalence rate of 8.3% among the pregnant women⁶.

In this study, maximum no. of Aerobic Bacterial Vaginitis were due to E.coli and staphylococcus aureus contributing 7(38.88%) cases which was followed by Klebsiella 2(11.11), acinetobacter and streptococcus 1(5.55%). Pal K et. al,⁷ reported that E.coli (24.92%) and Klebsiella pneumoniae (23.50%) were the most common followed by S.aureus (16.52%). Mumtaz S et al., found S. aureus in (46.07%) followed by E.coli (13.7%)⁸. Tansarli et al. and Zarbo et al. also reported a high incidence of S.aureus(41.7%) and (27.9%) respectively^{9,10}. Donders GG also reported E.coli, Enterococci, Staphylococcus species as the common cause of bacterial vaginitis⁵.

Sangeetha KT et al^{reported} that enterococcus faecalis (32.26%) was the most prevalent organism isolated which was followed by E. coli (25.8%) and staphylococcus aureus (22.6%)³. Whereas the study conducted by Khan and Khan et al reported, Enterococcus faecalis (31%) as the most frequently isolated vaginal pathogen¹¹.

Zarbo G et. al., recommended amoxicillin with clavulenic acid, neomycin, cefotaxime and ofloxacin for staphylococcus aureus. For E.coli recommended antibiotics were Ciprofloxacin, Ampicillin, Cefalothin and Netilmicin¹⁰. We found doxycycline, ceftriaxone and meropenam (100%) as a choice of antibiotics for S. aureus followed by tobramycin (85.71%). E.coli was found sensitive with ciprofloxacin, ceftriaxone, tobramycin and meropenam in (85.71%).

Sangeetha KT et. al, reported 100% sensitivity of E.coli with meropenam and with gentamicin, amikacin and ciprofloxacin about (87.5%). Klebsiella pneumonia was found to be sensitive with amoxi-clav, amikacin, gentamycin, cefotaxime, cefepime, ciprofloxacin, azetreonam, cotrimoxazole and meropenam in 100%³. We found E.coli sensitive with ciprofloxacin, ceftriaxone, tobramycin and meropenam in about 6(85.71%) cases and Klebsiella was 100% sensitive to ciprofloxacin and tobramycin.

CONCLUSION

Bacterial culture and its sensitivity in vaginal discharge should be done not only because of its troublesome symptoms but for its complications like subfertility, preterm delivery, ectopic pregnancy and it's increased for susceptibility for HIV and oncogenic virus. E.coli and staphylococcus were the predominant bacteria found in present study followed by Klebsiella pneumonia, streptococcus and acinetobacter. E.coli and staphylococcus aureus were both sensitive with ceftriaxone and meropenam (85.7% and 100%). Hence, these two drugs could be used for vaginal discharge; however meropenam is more expensive and can be reserved for ceftriaxone resistant cases.

ACKNOWLEDGEMENT

I would like to extend my warm thanks to Prof. M. Shrivastava, Head of the Department OBST. & GYNAECOLOGY for her continuous supervision and support throughout the study.

CONFLICT OF INTEREST

There is no conflict of interest in present study.

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Comparison of Vestibular Function Between Right and Left Handed Normal Population

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ABSTRACT

Objective To identify the side of vestibular dominance in right handed & left handed people.

Method A total of 50 normal subjects, aged between 15 - 45 years were included as Left handers (n = 25) and Right handers (n = 25). Handedness was confirmed by the Annett Hand Preference Questionnaire. Bithermal caloric testing was done which was recorded by Electronystagmography (ENG). Maximum Slow Phase Velocity (MSPV) was taken as the parameter of choice. Directional Preponderance (DP) and Canal Paresis (CP) were calculated in each group.

Results Out of the 25 Left handed subjects, 8 had DP towards Left whereas 7 had DP towards the Right and the remaining 10 showed no DP to any side (normal) ($p < 0.001$). Out of the 25 Right handed subjects, 4 had DP towards Right and none had DP towards the Left, remaining 21 showed no DP to any side (normal) ($p < 0.001$). For CP, out of 25 Left handed subjects, 2 showed CP towards the Left and 1 towards the Right, the remaining 22 showed no CP (normal) at all. Similarly out of the 25 Right handed subjects, 2 showed CP towards the Left and 1 towards the Right, the remaining 22 showed no CP (normal) at all. Out of 25 Right handers, it was found that Right handers showed Right vestibular preference whereas vestibular preference was almost equally distributed to Left and Right side in Left handers.

Conclusion On considering DP, it was found that Right handers showed Right vestibular preference whereas vestibular preference was almost equally distributed to Left and Right side in Left handers ($p < 0.001$).

Key words: Bithermal caloric test, directional preponderance, electronystagmography, handedness, vestibular dominance

INTRODUCTION

The Vestibular system is the system of balance and equilibrium. It is a distinct sensory organ comprising of three semicircular canals, which are sensitive to angular accelerations, and two otoliths (utricle and saccule), which are sensitive to linear accelerations. Each semicircular canal is approximately at right angles to the other two¹.

The vestibular system's main function is to sense head movements, especially involuntary ones, and counter them with reflexive eye movements and postural adjustments that keep the visual world stable and keep us from falling². Handedness is the natural or biological preference for using one hand more than the other in performing special tasks

depending on dominant hemisphere. As handedness is biologically and genetically linked, so it has various effects on one's behavior and abilities. The reason is that right handers have genes that force their brains into a slightly more one sided structure but brains of left handers are more symmetric where the two sides are more equal which enhances person's abilities³.

As stated above, functional asymmetries occur in right-handers as compared to left-handers who show a more symmetrical organization resulting in less asymmetry in sensorimotor tasks performed with the left or right hand. Present study was done to establish difference in the dominance of vestibular responses in normal left and right handers respectively in our region.

MATERIALS AND METHODS

It was a descriptive observational study conducted in Nepalgunj Medical College Teaching hospital, Kohalpur from 1st December 2014 to 30th November 2015. Total sample size was 50 out of which 25 subjects in each two groups of left and right handed normal population were divided to compute the vestibular dominance. Subjects with in age group of 15-45yr without any complaints of vestibular disorder with normal functioning ears and eyes were included in this study. Subjects

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having CNS diseases, mixed handedness were excluded.

Handedness was assessed using the forced-choice hand preference questionnaire by Annett⁴ which is as follows: asking the participants to indicate the hand he/she usually uses to carry out 12 unimanual everyday actions like throwing, use of scissors, comb, toothbrush, knife, spoon, hammer, screwdriver, strike a matchstick and threading a needle, which yields a laterality quotient that ranges from -100 (totally left-handed) to +100 (totally right-handed). A cut-off score of ≤ -60 on this questionnaire was used to classify the individuals as left-handers and a score of $\geq +60$ as right-handers. Intermediate scores indicate mixed-handers. According to this criterion all participants were attributed as either dominantly left- or right-handed.³

Clinical Vestibular Function Test like Spontaneous nystagmus, Fistula test Romberg test, Gait, Past-pointing and Falling, Dix-Hallpike maneuver, Fukuda's writing test were done. Bi-thermal Caloric Test (Hallpike-Fitzgerald) using ENG was done. The electrodes were applied 1.5 cm lateral to outer canthus on both sides (to record horizontal eye movement), 1.5 cm above as well as below the eye on one side (to record vertical eye movement) and the neutral (ground) electrode on the glabella of forehead. Two polythene catheters [Feeding tube (size 6 Fr)] were introduced; one in each external auditory canal. The quantity of water used for caloric test was 50 cc taken in a 50 ml syringe over a time period of 40 seconds. Irrigation was done in the order 44° right, 44° left, 30° left, 30° right. The interval of at least 5 minutes was maintained between two successive irrigations. Recording was started immediately at the start of the irrigation and continued for two and half minutes to three minutes.

Subject was asked to move his/her eyes 20° to the left and right looking at the light bar with LEDs which was placed 1 meter away from the patient. The sensitivity of the machine was so adjusted that 10° ocular movement produced 10 mm deflection of the recording needle on the vertical axis and 10 mm on the horizontal axis was equal to 1 second time duration. Upward deviation was caused by looking to the right and looking upwards while downward deviation was caused by looking to the left side and looking downward. The data was then analyzed by the computer and MSPV was calculated by the same. The normal ranges for maximum slow phase velocity were kept as follows:

Right warm = 4 – 18° / second Right cold = 4 – 19° / second
Left warm = 5 – 20° / second Left cold = 5 – 21°/second

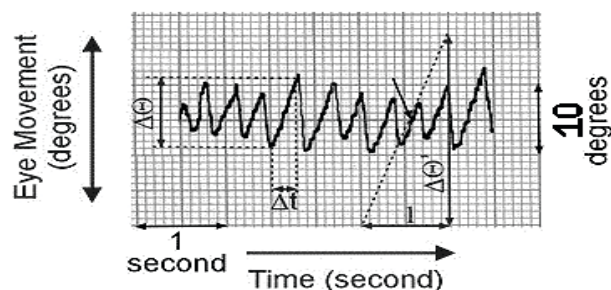


Figure 1: Graph showing calculation of SPV

Result was given as MSPV of Right warm, Right cold, Left warm, Left cold. Directional Preponderance and Canal Paresis was then calculated by using the formula below:

Directional Preponderance (DP)	Canal Paresis (CP)
$(RW+LC) - (RC+LW)$	$(RC+RW) - (LC+LW)$
----- $\times 100 (\%)$	----- $\times 100 (\%)$
$[RC + RW + LC + LW]$	$[RC + RW + LC + LW]$

The normal values for DP and CP were kept as follows:

Directional Preponderance	Canal Paresis
Right sided > 20	Right sided < - 20
Left sided < - 20	Left sided > 20
Normal + 20 to - 20	

RESULTS

The age of the subjects ranged from 15 years to 45 years of age with mean age of 27.6 years. Most of the subjects were within 26-30 years (42%). The next common age group was 21-25 years (24%). Out of 50 patients, 68%(34) were males and 32%(16) were females.

There were 25 Left handed and 25 Right handed subjects. Fukuda's writing test was carried out in both Right and Left handers each using both of their hands. However no abnormality was detected in any of the subjects.

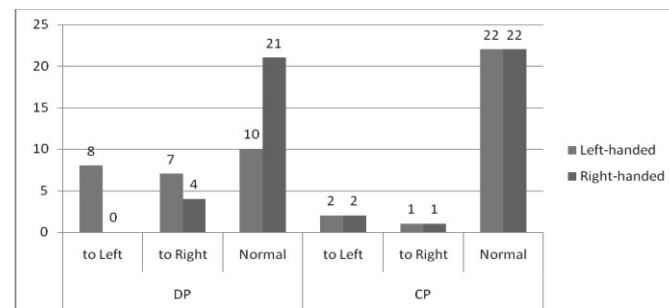


Figure2: Directional Preponderance and Canal Paresis of all subjects

Out of the 25 Left handed subjects, 8 had DP towards Left whereas 7 had DP towards the Right and the remaining 10 showed no DP to any side (normal). Out of the 25 Right handed subjects, 4 had DP towards Right and none had DP towards the Left, remaining 21 showed no DP to any side (normal).

For CP, out of 25 Left handed subjects, 2 showed CP towards the Left and 1 towards the Right, the remaining 22 showed no CP (normal) at all. Similarly out of the 25 Right handed subjects, 2 showed CP towards the Left and 1 towards the Right, the remaining 22 showed no CP (normal) at all.

While evaluating the relationship between DP and handedness, it was found to be at p value of < 0.001 , which is statistically highly significant. Then the relationship of DP between Left and Right handers was also tested which was found to be statistically significant as well with a p value of < 0.001 .

However the relationship between CP and handedness was also tested and was found to be at p value of 1.0. The relationship between CP and Right and Left handedness was also found to be at a p value of 1.0.

A correlation between DP and CP was tested which was found to be at p value of 0.001.

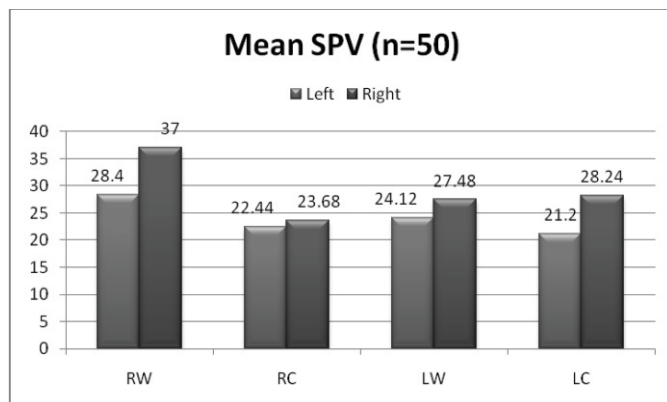


Figure3: Mean SPV of both Right and Left handed subjects

The above figure shows the mean SPV of both the Right and Left handed subjects in all the 4 caloric test parameters. It shows a mean of 28.4 in RW, 22.44 in RC, 24.12 in LW and 21.2 in LC in the Left handed subjects. On the other hand, it shows a mean of 37 in RW, 23.68 in RC, 27.48 in LW and 28.24 in LC in the Right handed subjects.

DISCUSSION

In present study, Directional Preponderance has been used to

determine the vestibular dominance in comparison to handedness. Out of 25 Left handed subjects, 8 (32%) showed DP towards Left and 7 (28%) showed DP towards Right and 10 were normal. This showed that in Left handers similar percentage of subjects demonstrated DP towards both Left and Right.

Likewise, out of 25 Right handed subjects 4 (16%) showed DP towards Right side whereas none showed DP towards Left side and 21 were normal.

The above data shows that there is a difference in DP between right and left handers ($p < 0.001$). In Right handers it only existed towards the Right side, whereas in Left handers, some demonstrated DP towards Left whereas others to the Right. Thus it demonstrated that Right handers showed Right vestibular preference whereas vestibular preference was almost equally distributed to Left and Right side in Left handers. In present study, CP was seen towards Left in 2 (8%) and towards Right in 1 (4%) in both right and left handed groups whereas 22 (88%) in each group were normal. The above data shows that there is no difference in CP between right and left handers ($p = 1.0$).

CONCLUSION

In the present study, 50 subjects were included out of which 25 were Left handers and 25 were Right handers (as confirmed by the Annett Hand Preference Questionnaire). Bithermal caloric testing was done which was recorded by ENG. MSPV was taken as the parameter of choice and DP and CP were calculated in each. On considering DP, it was found that Right handers showed Right vestibular preference whereas vestibular preference was almost equally distributed to Left and Right side in Left handers ($p < 0.001$).

However no difference in sensitivity between right and left handers was noted ($p = 1.0$).

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Prevalence of Depression and Use of Antidepressant in Basic Medical Sciences Students of Nepalgunj Medical College, Chisapani, Nepal

Dhami DB¹, Singh A², Shah GJ³

ABSTRACT

Introduction : According to WHO, depression would be the second-most prevalent condition worldwide by 2020. The prevalence of depression is increasing in medical colleges because of stressful, competitive environment, long hours of trainings and studying. It is important for medical educators or teacher to know the magnitude of depression in students and factors causing it. The present study was carried to assess the prevalence of depression, use of antidepressant and to find out their stressors among preclinical students of Nepalgunj Medical College, Chisapani, Nepal.

Aims and objective : To assess the prevalence of depression, use of antidepressant and to find out their most common stressor among preclinical students

Materials and methods : The descriptive cross sectional study was carried in preclinical students of Nepalgunj Medical College, Chisapani, Nepal. The data was collected with questionnaires which comprised of personal data (age, sex, year of study, religion and home country) and Zung Depression Inventory scale was used to rate the depression.

Results : Among 218 students, the prevalence of depression was 24.3%. Male students are highly depressed (16.5%) then female (7.8%). First year student are more depressed (26.5%) then second year (22.4%). The depression score of the preclinical medical student was 44.67 ± 5.68 (mean $\pm$ SD). Majority of the students (>50%) found on academic stress and 3.6% of the total students were on antidepressants

conclusion : As the prevalence of depression is high in medical students there is need for the counselling services to the students in the medical college to control this morbidity.

Key words: Zung Depression Inventory, Depression, stress inducing factors, Medical students

INTRODUCTION

Depression is highly common affective disorder. According to WHO, it would be the second-most prevalent condition worldwide by 2020¹. The prevalence of depression among medical students in public universities has been estimated to be 10.4% in Greece², 15.2% in USA³, 21.7% in Malaysia⁴, 24% in UK⁵, 29.1% in India⁶ and 43.8% in Pakistan⁷, whereas The prevalence of depression among private medical students has been estimated to be 19% in USA⁸, 49.1% in India⁹, and 60% in Pakistan¹⁰. In Europe, around 30% of medical students suffer from depression or anxiety¹¹. Similarly reported by Brazilian

studies, 20 to 50% of medical students were found to present with mood disorders^{12,13}. Medical schools are known to be stressful environments for students and hence medical students have been believed to experience greater incidences of depression and it affects almost one-third of medical students globally but treatment rates are relatively low¹⁴. In order to maintain a good academic result in a highly competitive environment students put them under a lot of stress which seriously affecting their academic performance and quality of life^{15,16}. Medical training is notoriously stressful and competitive, requiring long hours of studying, training and staying awake starting in medical school and has two to five times more likely to have depression than the general population¹⁷. There is a need for the counselling services to be made available to the students in the medical college to control this morbidity. It is important for medical educators or teacher to know the magnitude of depression in students and factors causing it, which not only affect their health and academic achievement but also has serious consequences like suicide¹⁸ so, there is need for the counselling services to be made available to the students in the medical college to control this morbidity. The present study was carried to assess the

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prevalence of depression, use of antidepressant and to find out their stressors among preclinical students of Nepalgunj Medical College, Chisapani, Nepal.

AIM AND OBJECTIVES

- To assess the prevalence of depression among preclinical students
- To find about most common stress inducing factor and to know the status of antidepressant use.

METHODS

The Study was a descriptive cross sectional study carried in 218 preclinical students of first year (batch-2017) and second year (batch-2016) at Nepalgunj Medical College, Chisapani, Nepal, in April 2018. Students were briefed about the purpose of the study and proforma were distributed among all after informed consent. The study was approved by the Institutional Ethical Committee. The questionnaires which comprised of personal data (age, sex, year of study, religion and home country), Zung Depression Inventory and stress inducing factors. The instrument used for collecting the data was a proforma containing Zung self-rating scale for depression¹⁹ with some additionally required information regarding the use of antidepressants

The Zung self-rating depression scale was developed by Zung WWK in 1965 for the assessment of perceived feelings of individuals regarding their emotional status. It consists of 20 items with scores ranging from 1-4 (per item). The total score is determined by adding all the scores, than 50 are considered normal while those ranging from 50-59, 60-69 and more than 70 are indicative of mild, moderate and severe depression respectively.

Stress inducing factors: After in-depth literature review and peer consultation, five most important stress inducing factors were selected. The students were asked to strike the factors they thought to be important from the following¹⁰

- Academic stress
- Home sickness
- Relationships
- Hectic lifestyle
- Future concerns

Data were entered into Microsoft excel and analyzed using SPSS statistical software.

RESULT

Total 218 students were included in the study, 102 from first year (batch-2017) and 116 from second year (batch-2016). Out of total students 69.7% were male and 30.2% were female students. Majority of the students were Nepalese 61.4% followed by Indian 38.5%. High percentage (81.8%) of student's parent were non-medical by occupation and only 18.8% parent were medical related. The mean age with standard deviation of the total students was 20.22 ± 1.18 and that of first year and second year students was 20.01 ± 1.19 and 20.31 ± 1.14 respectively (Table-1)

Parameters		First year	Second year	First+ Second year
		Frequency	Frequency	Frequency
		(Percentage)	(Percentage)	(Percentage)
Sex	Male	71(69.6%)	81(69.8%)	152(69.8%)
	Female	31(30.4%)	35(30.2%)	66(30.2%)
Nationality	Nepalese	62(60.8%)	72(62.1%)	134(61.5%)
	Indian	40(39.2%)	44(37.9%)	84(38.5%)
Parent occupation	Medical	26(25.5%)	15(12.9%)	41(18.8%)
	Non-medical	76(74.5%)	101(87.1%)	177(81.2%)
Age	Minimum	18	18	18
	Maximum	24	25	25
	Mean $\pm$ SD	20.01 ± 1.19	20.31 ± 1.14	20.22 ± 1.18

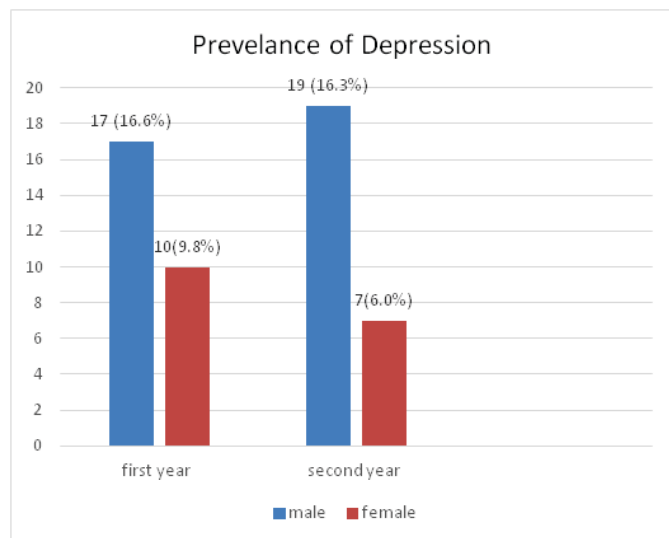
The depression score of the preclinical medical student was 44.67 ± 5.68 (mean $\pm$ SD). Highest depression score for first year was 58 and for second year was 65. (Table-2)

Year	Depression score		
	Minimum	Maximum	Mean $\pm$ SD
First	30	58	44.65 ± 5.69
Second	29	65	44.71 ± 5.70
First + Second	29	65	44.67 ± 5.68

Male students are highly depressed (16.5%) then female (7.8%). First year student are more depressed (26.5%) than second year (22.4%). The Prevalence of depression was 24.3%.

(Table-3)

Table-3 Prevalence of Depression			
Year	Male student	Female student	Total
First year (102)	17 (16.6%)	10(9.8%)	27(26.5%)
Second year (116)	19 (16.3%)	7(6.0%)	26(22.4%)
Total (218)	36 (16.5%)	17 (7.8%)	53(24.3%)



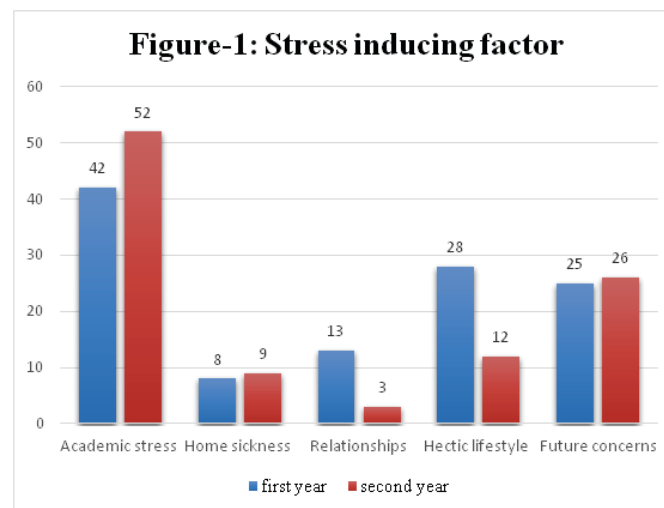
In the first year 27 students have mild depression, among them 17 male and 10 female. In the second year 25 students have mild depression among them 18 male and 7 female students. Only one student have moderate depression in second year. Nepalese student found to be depressed then Indian in both year.

(Table-4)

Table:4 Distribution of depressant student in first and second year according to sex and nationality						
Depression scale		Normal	Mild	Moderate	Severe	Total
First	Male	54	17	0	0	71
	Female	21	10	0	0	31
Total		75	27	0	0	102
Second	Male	62	18	1	0	81
	Female	28	7	0	0	35
Total		90	25	1	0	116
First	Nepalese	45	17	0	0	62
	Indian	30	10	0	0	40
Total		75	27	0	0	102
Second	Nepalese	57	14	1	0	72
	Indian	33	11	0	0	44
Total		90	25	1	0	116

Majority of the students found on academic stress followed by hectic life style and future concern but more than 50% of second year student were on academic stress then first year students while significant number of students hectic life style in first year

(Figure-1)



Only 3.6% of the total studentst were taking antidepressants.

Figure-2 Prevalence of use of antidepressant among preclinical students



DISCUSSION

The prevalence of depression in basic medical science students was 24.3% which is very similar with the study of Basnet B et al²⁰ (24.78%). This finding is also comparable with the results of similar study done in Malaysia (21.7%)⁴, in UK(24%)⁵ and in India (29.1%)⁶ but more in comparison to findings of studies from Manipal, Nepal (20%)²¹, in Greece (10.4%)² and in USA (15.2%)⁸ and less in comparison in Pakistan (43.8%)¹⁰.

In our study, the prevalence of depression was found to be more in the first year 26.5% than the second year 22.4%). This finding could be due to students' just entering medical school after high school. Similar studies reported that prevalence of depression to be found more in preclinical medical students

22,23,24

The present study male students are highly depressed (16.5%) then female (7.8%) whereas in study by Basnet B et al²⁰ 53.7% male and 46.3% female were depressed. This may be due to more male students got admission in medical field than female in Nepal. First year student are more depressed (26.5%) then second year (22.4%) which is very less with the Study of Basnet B et al²⁰ is 57% and 50% respectively. Among those with depression, a majority had mild and moderate degree of depression with mean score (44.67±5.68). The prevalence of severe and profound depression was 7.5% and 6.7%, respectively.

Majority of the students found on academic stress followed by hectic life style and future concern, Even studies from Pakistan and India reported academic stress as most troublesome stressors.^{23,24} This may reflect cultural similarities, working environments and similar background.

CONCLUSION

Depression along with academic stress is high in medical students. There is need for the counselling services to the students in the medical college to control this morbidity.

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Diagnostic Utility of Fine Needle Aspiration Cytology in Oral Cavity and Oropharyngeal Lesions

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ABSTRACT

Fine needle aspiration cytology is being commonly used for initial diagnoses of oral cavity and oropharyngeal lesions. The aim of this study was to assess the role of Fine Needle aspiration cytology in diagnosis of intraoral and oropharyngeal lesions and to compare with histopathological findings in those cases which underwent biopsy examination. This is a tertiary care center based retrospective study done over a period of two years. Out of total 660 fine needle aspiration cytology in two years; 133 cases were of oral and oropharyngeal region. 54 were male and 79 were of female. Frequently involved site was tongue (n=45). Predominant non neoplastic cases were of chronic inflammation (n=43) and neoplastic cases of squamous papilloma (n=15). Among neoplastic cases most common malignant cases were of squamous cell carcinoma (n=4). Sensitivity of the FNAC method was found to be 80% and specificity was identified as 100% comparing with gold standard histopathological examination. No significant complications were seen in patients undergoing these FNAs. It can be concluded that FNA is a simple and rapid diagnostic test that can be useful for preliminary assessment of oral and oropharyngeal lesion.

Key words: *Fine needle aspiration, oral cavity, oropharynx*

INTRODUCTION

Due to wide variation of oral and oropharyngeal lesions, correct diagnosis helps for proper management¹. Fine needle aspiration cytology (FNAC) is used for assessment of detectable superficial and deep lesions. Oral and oropharyngeal lesions may arise from surface mucosa, minor salivary glands, mesenchymal tissue, and lymphoid structures. A diversity of lesions including non neoplastic commonly presenting as inflammatory or cystic and neoplastic as benign or malignant neoplasms can occur within the oral cavity and oropharynx which requires a proper diagnosis for further management². Advantage of aspiration in oral cavity and oropharynx are easy follow up of previously diagnosed cases and preoperative diagnosis of lesion, helping clinicians and patient to discuss and plan better for further management³. Disadvantage reported for FNAC procedure in oral and oropharyngeal region is due to space inadequacy for performing fine needle aspiration⁴.

Although oral cavity, floor of mouth, tongue, palate, tonsils and posterior pharyngeal wall can be needled under visual

inspection, there was only rare study done to evaluate the role of FNAC in intraoral and oropharyngeal lesions to evaluate diagnostic utility over the country with variable outcomes⁵.

The present study was undertaken to evaluate the significance as well as diagnostic value of FNAC in oral cavity and oropharyngeal lesions.

MATERIALS AND METHODS

This is a tertiary care centre based descriptive study done over a period of two years from 13th April 2016 (1st Baisakh 2073 BS) to 13th April 2018 AD (30th Chaitra 2074 BS) at Jeevan Raksha Hitech Diagnostic centre. Sample size was calculated according to this formula:

$$\frac{z^2 \times p(1-p)}{e^2} \\ 1 + \left(\frac{z^2 \times p(1-p)}{e^2 N} \right)$$

All patients who underwent aspiration from oral cavity and oropharynx were included in this study. Aspiration was done as an outpatient procedure in supine posture. Deeply located lesions in oral cavity, oropharynx and posterior tongue were visualized with head lamps. Tongue depressor and sterile gauze was used for better assessment of lesions. Local anesthesia as lignocaine spray was used to avoid gag reflex in oropharyngeal lesions. FNAC was done through transoral route. Aspiration was done with 22–23 G needle attached to five ml syringe. Two to three passes of needle were made per case. Hemostasis

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after FNAC procedure was achieved by tight packing with sterile gauze in the mouth and swallowing. The smears were air dried for Giemsa stain and wet fixed in 95% alcohol for Rapid Pap stain. Special stains like Ziehl Neelsen stain and periodic-acid-Schiff (PAS) were done wherever required. The cytological diagnoses were assessed and compared with the histopathological diagnoses in those cases that underwent excision followed by histopathological examination. Sensitivity and specificity of the FNAC method was identified comparing with gold standard histopathological examination.

RESULTS

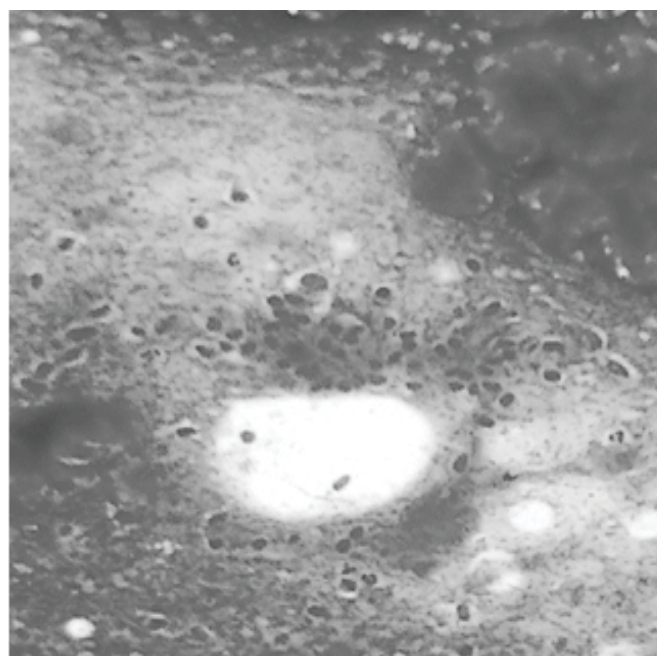
Out of total 660 fine needle aspiration cytology in two years; 133 cases were of oral and oropharyngeal region. 7 cases were of oropharyngeal region and all were from tonsil. Among 133 cases; 54 were male and 79 were of female. Male to female ratio was of 1:1.5. Age of the patient ranged from one year to seventy six years with mean age of 34.6. Maximum numbers of patient were in the age group of 31 to 40 (39 patients) (Table I). Most commonly involved site was the tongue (n=45), followed by buccal mucosa (n=36), mucosal surface of lips (n=13), palate (n=12), floor of mouth (n=11), retromolar trigone (n=9) and tonsil (n=7) (Table II). FNAC results show highest cases of chronic inflammation (n=43) (Table III). Among diagnosed cases; predominant non neoplastic cases were of chronic inflammation (n=43) and neoplastic cases of squamous papilloma (n=15) (Table IV). One of the neoplastic cases was diagnosed as pleomorphic adenoma from palate region (Figure 1). Among neoplastic cases most common malignant cases were of squamous cell carcinoma (n=4). 2 cases of squamous cell carcinoma were located in buccal mucosa; two cases each were in tongue and mucosal surface of lower lip region respectively (Figure 2). One case of low grade mucoepidermoid carcinoma was located in palate. Among five cases which underwent histopathological examination, four cases were diagnosed as squamous papilloma and also final diagnosis was squamous papilloma in histopathology. One case diagnosed as Lichenoid changes in cytology was found to be Lichen Planus in histopathology.

AGE GROUP (in years)	NUMBER OF CASES
0 – 10	10
11-20	17
21 – 30	29
31 – 40	39
41 – 50	15
51 – 60	11
61 – 70	10
71 – 80	2
Table I: Distribution of cases according to age	

SITE OF LESIONS	NUMBER OF CASES (%)
Lip (mucosa)	13 (9.7%)
Palate	12 (9%)
Tongue	45 (33.9)
Tonsil	07 (5.3)
Floor of mouth	11 (8.3)
Buccal mucosa	36 (27.1%)
Retromolar trigone	09 (6.7)
Table II: Distribution of cases according to site of lesions	

FNAC DIAGNOSIS	NUMBER OF CASES (%)
Hemangioma	06 (4.5)
Chronic Inflammation	43 (32.3)
Acute inflammation	14 (10.5)
Squamous papilloma	12 (9)
Sialocyst / mucus retention cyst	20 (15)
Benign polypoidal lesion	08 (6)
Squamous cell carcinoma	04 (3)
Mucoepidermoid carcinoma (low grade)	01 (0.8)
Leukoplakia	06 (4.5)
Spindle cell lesion – fibroma / irritation fibroma	05 (3.8)
Lichenoid changes	04 (3)
Chronic sialadenitis (minor salivary gland)	02 (1.5)
Pleomorphic adenoma	01 (0.8)
Chronic tonsillitis (follicular tonsillitis)	07 (5.3)
Table III: Distribution of cases with FNAC diagnosis	

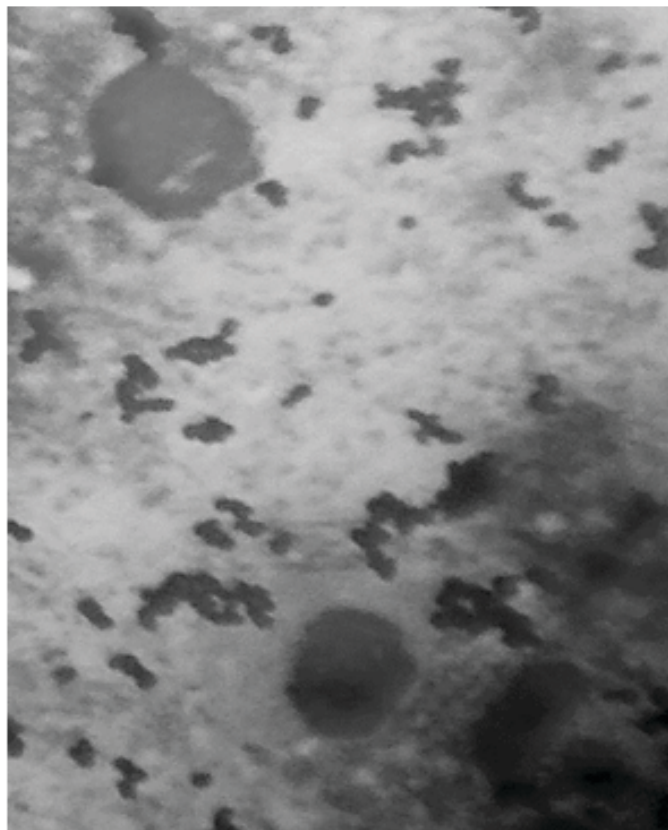
Figure 1: FNAC of palate region: Pleomorphic adenoma. (Giemsa stain X 1000)



Non neoplastic cases (number of cases)	Neoplastic cases (number of cases)
Chronic inflammation (43)	Squamous papilloma (12)
Sialocyst / Mucus retention cyst(20)	Benign polypoidal lesion (08)
Acute inflammation (14)	Hemangioma (06)
Chronic tonsillitis / follicular tonsillitis (07)	Leukoplakia (06)
Lichenoid changes (04)	
Chronic sialadenitis (2)	Pleomorphic adenoma (01)
	Squamous cell carcinoma (04)
	low grade Mucoepidermoid carcinoma(01)
Total number of case = 90	Total number of cases = 43

Table IV: Comparison of non neoplastic and neoplastic cases

Figure 2: FNAC of Mucosal surface of lower lip region: Atypical squamous cells (Giemsa stain X 1000)



Five cases were subsequently excised and submitted for histopathology examination. Comparing FNAC findings with gold standard histopathological observation sensitivity and specificity was found to be 80 and 100% respectively (Table V).

Test	Disease Present	Disease absent	Total
Positive	True Positive (a=4)	False positive (c=0)	a+c = 4
Negative	False Negative (b=0)	True negative (d=1)	b+d = 1
Total	a+b = 4	C+d = 1	Total = 5

Table V: Calculation of sensitivity and specificity of FNAC

Prevalence of disease = T disease / Total X 100 = 4/5 X 100 = 80

Sensitivity = a/a+c X 100 = 4/5 X 100 = 80

Specificity = d/d+b X 100 = 1/1 X 100 = 100

DISCUSSION

Age of presentation in this study was broad ranging from 1 year to 76 years. Similar wide range of age group of 14 month to 86 years was found by Singh D et al⁵. Present study shows female predominance in oral cavity and oropharyngeal lesion and similar findings were observed by Modi D et al⁶. Most common age group in this study was of 31 to 40 years and similar findings was also noted by Sakarwal N et al⁷. This survey showed common lesion over tongue and corresponding data were observed by Bal MS et al⁸. Inflammation was the most common presentation in non neoplastic lesion and similar observation was identified by Khan N et al⁹. Frequent malignant lesion in this study is found to be squamous cell carcinoma and similar findings were observed by various studies^{4,10} (Table VI).

Studies	Most common malignant lesion
Singh D et al. ⁹	Squamous cell carcinoma (28%)
Saleh HA et al. ⁴	Squamous cell carcinoma (22.2%)
Gillani M et al. ¹⁰	Squamous cell carcinoma (60%)
Present study	Squamous cell carcinoma (3%)

Table VI: Comparison of malignant lesions identified in present study with various studies

CONCLUSION

As sensitivity and specificity are high for oral and oropharyngeal aspiration cytology, so it is concluded that FNAC can be used as routine diagnostic tool for oral and oropharyngeal lesions.

LIMITATION

Adequate space for aspiration is only limitation in oral cavity and oropharyngeal cytology examination.

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Trend of Caesarean Section in Bheri Zonal Hospital

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ABSTRACT

Introduction: Caesarean Section (CS) rates are a major public health concern and cause worldwide debates according to latest data from 150 countries. Currently 18.6% of all births occur by CS, ranging from 6 to 27.2% in the least and most developed regions. This study was done to find out incidence and outcome of CS and geographical variation of women coming for the service in this Zonal Hospital.

Methods: A retrospective review of case files of 771 women who had CS from 16th April 2017 to 15th April 2018 were analyzed for demographic profile like age, parity, geographical location. Similarly, gestational age, various indications of CS, incidence, parity, maternal and fetal outcome and duration of hospital stay were recorded.

Results: Out of 5083 deliveries, 771 (15.17%) had CS. Most of the CS was done for Cephalopelvic disproportion (CPD) which was 175 (22.70%) and previous CS, 140 (18.15%). Majority of CS which was 328 (42.54%), in age group 20-24 years. In relation to parity nulliparous were 463 (60.05%). Maternal morbidity was 31 (4.02%) and maternal mortality was one after CS. Apgar score of the baby between 0-3 was 3.24%. Three babies were expired within 24 hours due to severe birth asphyxia. The patients from Banke district were 408 (52.92%).

Conclusion: Study showed CS rate, 15.7% which is in upper limit of WHO recommendation and 60.50% were nulliparous had CS and most common indication of CS was CPD and fetal distress. There was no CTG used in routine practice.

Keywords: *Caesarean Section, Geographical distribution, Maternal and Fetal outcome*

INTRODUCTION

Caesarean Section (CS) rates are a major public health concern and cause worldwide debates.¹ According to latest data from 150 countries. Currently 18.6% of all births occur by CS, ranging from 6 to 27.2% in the least and most developed regions.² Good maternal and prenatal outcome can be ensured through essential obstetric and new born care provided by skilled attendants during pregnancy and child birth. In many resource poor settings, access to skilled care and crucial interventions is limited caesarean delivery is a matter for the availability and use of obstetric service in the situations.³ Caesarean section is one of the commonly performed surgical procedure in obstetric and is certainly one of the oldest operation in surgery. The objective of caesarean section in the ancient world was mainly postmortem delivery of dead or alive fetus.⁴ Rate of CS have risen around the world.⁵ CS rates differ substantially in

different parts of the world ranging from approximately 1% in some African countries (South Sudan and Niger) to 56% in some American countries (Brazil and Dominican Republic).⁶ Based on the WHO systematic review, increase in caesarean section rate up to 10%-15% at the population level are associated with decreases in maternal, neonatal and infant mortality.⁷ Low CS rate might indicate poor access to CS, where obstetric complications occur while high rate increases the risk of maternal and neonatal morbidity.⁶ Caesarean section rate in different hospital of Nepal varies between 10%-30%.⁸ Rate is probably higher in private institutions. Although CS is becoming increasingly safe, normal vaginal delivery is still considered safe.⁹ Better diagnosis and early referral due to increased health care coverage have increased the CS in Tertiary Care Hospitals in India,² it is similar in Nepal. An increase in number of CS conducted for non medical indication is a important contribution to the increased rise in CS rates. It is estimated that one-third of the 18.3 million annually performed worldwide are conducted for non medical indications and have described as "unnecessary".⁹ UN recommended minimum CS rate 5%-15%.¹⁰

Private hospitals have high CS rates than general hospital. This is probably due to mother choice regarding mode of delivery or for not taking risks.⁷ Some of the hospitals in Kathmandu valley

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shows up to 50.9%⁴, which unacceptably high. CS rates were highest among urban mothers, first births, births to women with higher education and births to women from the richest quantile of household wealth.¹¹

METHODS

This study was done in department of Obstetrics and Gynae, Bheri Zonal Hospital, Nepalgunj. It is a tertiary care hospital in mid-western Nepal. It was retrospective study from 16th April 2017 to 15th April 2018, after taking ethical approval from hospital authority. A total of 771 women of CS were taken excluding uterine rupture. The case files of the patients were obtained from record section. Patient's age, address, parity, antenatal status, incidences, indication, fetal outcome of CS were analyzed. The data was introduced into the Excel sheet in the computer and analyzed accordingly.

RESULTS

There were 5083 delivery during study period among them 771 had caesarean section that is 15.17% cases. Seventy six (9.86%) were adolescent. Most of age group 20-25 years was 328 (42.54%). Most of them were Primi 463 (60.05%). The most common indication was CPD 175 (22.70%) followed by previous CS 140 (18.15%). Most of the patients were from Banke 408 (52.92%) district followed by Bardiya 218 (28.27%). Post operative complications were 74 (9.60%) as shown in table 3, however for PPH 2 patients had subtotal hysterectomy and 2 had Blynch Suture. There was a one maternal mortality following 10 hours of CS due to pulmonary embolism. Most of the baby 92% had good Apgar score. Three babies were expired within 24 hours. Most of the patients (90.09%) were discharged within 6-10 days.

Table 1: Demographic Characteristics of women (n=771)

Age in years	Number	%
<=19	76	(9.86)
20-24	328	(42.54)
25-29	222	(28.79)
30-34	106	(13.75)
>=35	39	(5.06)

P ₀	463	(60.05)
P ₁	213	(27.63)
P ₂	59	(7.65)
P ₃	22	(2.85)
P ₄	8	(1.04)
P ₅	4	(0.52)
P ₆	2	(0.26)

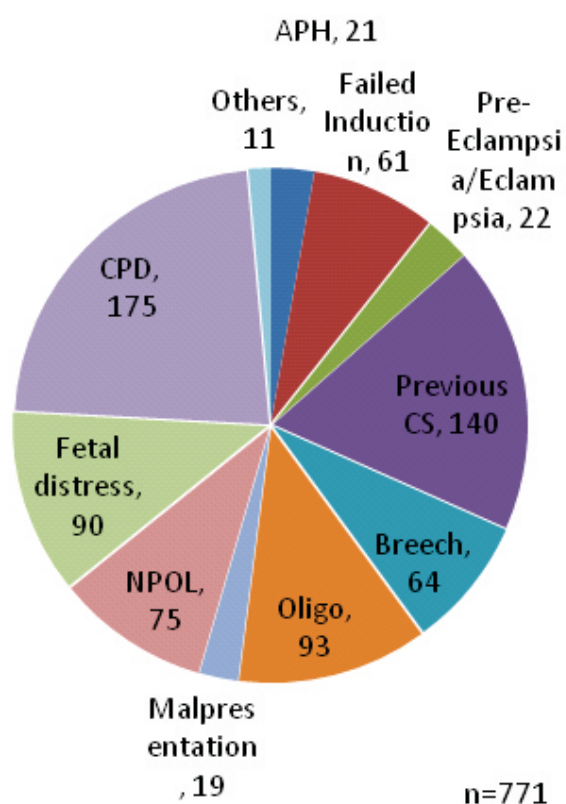


Figure 1: Indication of Caesarean Section

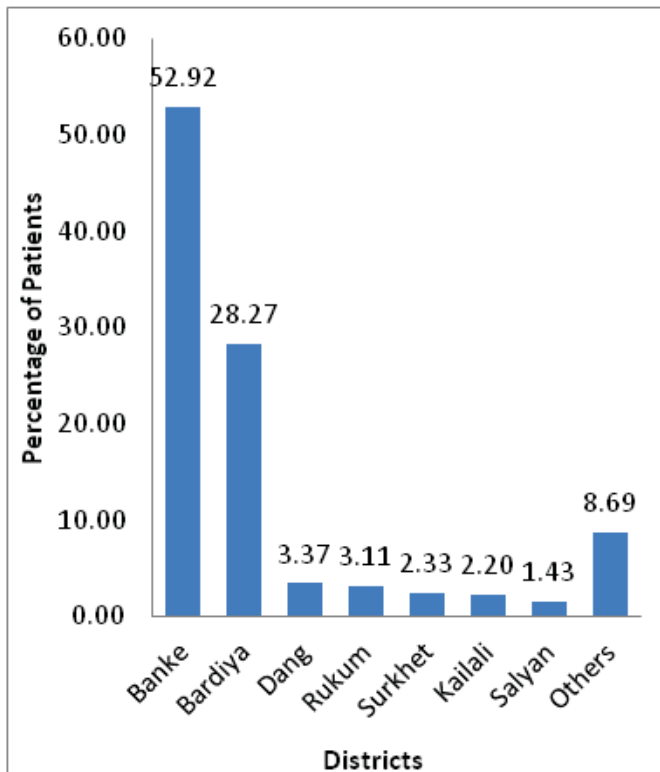


Figure2:Geographical presentation of patients

Table 3: Post operative morbidity of patients

Pyrexia	20
Infection	30
PPH	15
Mastitis	9

Majority of the neonates (92.09%) at 5 min had good Apgar score

Table 4: APGAR score of neonates (n=771)

APGAR score	1 min	%	5 min	%
0-3	52	6.74	25	3.24
4-6	407	52.79	36	4.67
7-10	312	40.47	710	92.09

Table 5: Period of stay at hospital

Day	No. of Patients
<=5	191
6-10	549
11-15	24
16-20	6
>=20	1

DISCUSSION

This study showed a caesarean section incidence rate was 15.12%. Similar study was done by Mittal Shiva et al.⁸ and Pradhan P et al.⁶ showed much higher incidence 28.93% and 50.9% respectively. In our study, incidence of CS was near to WHO recommendation (10%-15%). It may be due to most of the patients came in late labour and almost no demand CS, all decisions were taken by the health persons. Due to implementation of safe motherhood programme attendant population were from low and middle class who were in favour of trial of labour.

In our study, 76 (9.86%) adolescent had CS which is similar to 9.1% as reported by Jashmin et al.¹³ which may be due to similarity in patients profile like low socio economic condition and early marriage. Primi Parous were 328 (60.05%) which is unacceptably high in comparison to study 31.2%¹⁹ and 41.5%²¹. The challenges to keep CS rates low while maintaining safe outcomes for the mother and infant, this requires continuous auditing of CS.²⁰ Most of the women underwent CS were in age group 20 to 24 were 328 (42.54%) which was higher in comparison to Began T et al. study report 32.8%. This may be due to small group of population was in our study. Most common indication of CS was CPD 175 (22.70%) which is less in comparison to Singh D et al¹⁵ 42.21%, it may be due to most of the patients decided in active phase of labour and who gave history of prolonged labour and also due to referral cases. Second most common indication was previous CS which was 18.15% which is comparable with S Subedi report (21.25%).¹³ This high rate may be due to avoidance of trial of labour, increased risk of various complications including uterine rupture and labour complication of emergency CS, perinatal morbidity and mortality and also due to fear of litigation, low resource of person for continuous vigilance of patients.^{14, 22} Recent clinical audit done by RCOG in London, the young women leaving in more deprived area had higher rate of attempted VBAC (Vagina Birth after Caesarean section), 63.4% who attempted VBAC had successful vaginal birth¹⁵, another study in US success rate of VBAC was 57.1%.¹⁹ It indicates that once CS doesn't indicate repeat CS.

Third most common indication was Fetal Distress (12%), as comparison to other hospital of Nepal (40.2%)⁶, (13.87%)¹⁴. CS for Breech was 8.3%, it may be due to Primigravida who had completed 38 weeks of pregnancy were not waited for labour unless patients came in active phase of labour with adequate pelvis comparable to other study 10%¹³, 6.8%¹⁵. There was 9.60% morbidity as shown in Table 3 our study comparison to 7.2%⁶ in other study. There was a one mortality due to

pulmonary embolism, she was a case of gravida 5 para 4 at 38 week of pregnancy of age 35 years with APH (abruptio placenta), though it is common in high socio economic country. She was a high risk group for thrombo embolism aged 35 years, para >3, emergency CS delivery during labour.¹⁴ One of the study in Turkey shows maternal mortality due to embolism comprised 3.10% (third most common cause) following CS. Three babies were expired within 24 hours; they had low birth weight and severe birth asphyxia and one still birth. All these babies were born after emergency CS. As Shah A et al.⁵ study also shows high emergency CS rate were associated with increased fresh still birth, neonatal deaths and severe neonatal morbidity. Most of the patients were from Banke (52.92%) and second was Bardiya (28.27%) due to the lack of proper functioning of CONC hospital in Bardiya though they have comparable population, Banke 4,91,313 and Bardiya 4,26,576.²²

CONCLUSION

Study shows incidence of CS was near to higher side of WHO recommendation (10-15 years), nulliparous were 60.05%, which is very high most common indication was CPD (22.70%) followed by previous CS ((18.15%). Proper functioning of CONC site with ICU and NICU facility is also necessary for Bardiya district.

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Incidental Findings in CT scan in Pediatric Populations with Head Injury

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ABSTRACT

Objective: To investigate the incidental findings in computed tomography scans performed for mild head injury in pediatric patients at Nepalgunj Medical College and Teaching Hospital, Kohalpur, Banke, Nepal.

Materials and methods: It is a cross sectional hospital based study performed on two hundred and eighteen patients of age < 18 years presenting with mild head injury with no known neurological problem, recent surgery, and time of scanning < 24 hrs of sustaining injury were included in the study between Dec 2016 and June 2017.

Results: Among the 218 patients, 134 were males and 84 females, age ranged from 3 months to 18 years. 196 out of 218 patients (89.9%) had incidental findings in CT scan images with greater than 2 incidental findings present in 54 patients. Sinus opacification was the most common incidental finding noted in 86 cases (43.9 %) followed by calcified granuloma in 27 cases (13.8 %). Incidental findings unrelated to trauma which required further investigation was present in 5 cases.

Conclusion: Incidental findings are being increasingly encountered in computed tomography scan performed for mild head injury in pediatric age group with sinus opacification as the most common finding. Recognition of these findings and communication with the treating physician is helpful in the overall management of such cases.

Keywords: *Computed tomography; sinus; granuloma; head injury; radiation*

INTRODUCTION

Computed tomography is the first line of investigation in evaluation of patients sustaining head injury. Due to ongoing advances in the resolution of recent scanners, significant incidental findings are commonly encountered which are not related to the trauma. Recognition of these incidental findings and communication to the treating physician is detrimental as it may affect the overall management of traumatic cases¹. In this study, we studied the incidental findings noted in computed tomography performed in pediatric patient who have presented with mild head injury.

MATERIALS AND METHODS

A total of 248 pediatric patients who had undergone a computed tomography scan for mild brain injury during the

period Dec 2016 to June 2017 at Nepalgunj Medical College Teaching Hospital, Kohalpur, Nepal were included in the study. Pediatric non-contrast head CT studies were performed using a CT scanner (Revolution EVO; GE Healthcare, Waukesha, WI, USA). All patients with age less than 18 years were included in the study. Patients with known neurological problem, recent surgeries, time of scanning > 24 hrs of sustaining injury, physiological intracranial calcifications, and motion artifact were excluded from the study. All images were interpreted by a single radiologist with experience in body imaging. All data were collected and statistical analysis was done in SPSS 16.0 (Chicago, Illinois).

RESULTS

Of 248 patients, only a total of 218 patients fulfilled the inclusion criteria for our study. Among the 218 patients, there were 134 males and 84 females with male: female ratio being 1.6: 1. Age of the patient ranged from 1 year to 18 years with mean age of 10.78 ± 5.15 years SD.

Among the 218 patients, 196 patients (89.9%) had incidental findings on CT scan images while 22 patients had either normal or intracranial injuries. Single incidental finding was noted in 142 CT scan images while 54 patients (27.6%) had 2 or more incidental findings as tabulated in Table 1.

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Table: 1

Sinus opacification was the most common incidental findings noted in 86 cases followed by calcified granuloma in 27 cases. The incidental findings noted in CT scan and their relative frequency are tabulated in Table 2.

CT findings noted in CT scans done in pediatric mild brain injury		
	Number of cases	Frequency
Normal	6 cases	2.8%
Intracranial injuries including skull fractures	16 cases	7.3 %
Incidental findings	196 cases	89.9%
Single	142 cases	
2 or >2	54 cases	
Total	218 cases	

Table: 2

Frequency of incidental findings noted in CT scan			
	Incidental findings	Number of cases	Frequency
1	Sinus opacification	86	43.9%
2	Calcified granulomas	27	13.8%
3	Nasal septal deviation	23	11.7%
4	Adenoid hypertrophy	17	8.7%
5	Falx calcification	16	8.2%
6	Benign enlargement of subarachnoid space (BESS)	4	2.0%
7	Mega cisterna magna	7	3.6%
8	Concha bullosa	14	7.1%
9	Closed lip schizencephaly	1	0.5%
10	Glioma	2	1.0%
11	Meningioma	1	0.5%
12	Cavernoma and AVMs	2	1.0%
More than one incidental findings were noted in some cases.			

DISCUSSION

Computed tomography is the foremost modality of choice in investigating pediatric patients having sustained mild traumatic brain injury. Recent advances in the technology have resulted in better resolution of images with more diagnostic significance¹. However, it should be noted that use of computed tomography has exponentially increased in recent times with thus a necessity to segregate cases deemed necessary with a note to potential risk of radiation. Recent scanners have resulted in better diagnostic capabilities with minute details thus improving overall management of cases. A significant number of incidental findings have however been noted not relevant to the head injury. Recognition of these incidental findings and communication with the treating physician is necessary for proper management of such cases²⁻⁴. Although various studies have been done evaluating CT and MRI images in adult mild traumatic pediatric injury, very few

studies have been done on incidental findings on computed tomography scan performed for head injury in pediatric population. Incidental findings were noted in 89.9 % cases in our study which was higher than most other studies where sinusitis and mastoid infection were excluded as incidental study. In our study, sinus opacification was the most common incidental finding noted which is in keeping with previous studies^{1,3}. In our study, sinus opacification was noted in 43.9 % of the total cases whereas similar study done previously had 83.9 % of the cases³. Presence of sinus opacification in sinus other than the frontal sinus is commonly encountered and thus a clinical correlation is warranted in treating patients as suggested by various studies thus avoiding unnecessary antibiotic administration^{3,4,5}.

Calcified granuloma was the second most common incidental findings noted which is significantly higher than the other previous studies. This difference could be related to the endemecity of granulomatous disease in this part of the world^{6,7}.

Incidental findings requiring further investigation unrelated to the trauma were noted in only five cases which were in keeping with previous studies⁶. Study have demonstrated that clinically important traumatic brain injuries (ciTBI) in children having undergone CT examination occurred in only 0.9 % cases with only 0.1% required neurosurgery. Our study also demonstrates the very low yield of clinically significant traumatic brain injuries in CT performed in pediatric head injury thus obviating the need. However, thorough and detailed clinical examination with early recognition and diagnosis of ciTBI is detrimental for a timely management of these cases^{3,8}.

CONCLUSION

Incidental findings are common in computed tomography scans performed for mild brain injury in pediatric patient with sinus opacification constituting most of the cases. Recognition of incidental findings and timely communication with concerned treating physicians is pivotal in management of such cases.

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Attitudes of Undergraduate Medical Students towards the Persons with Mental Illness in a Medical College of Western Region of Nepal

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ABSTRACT

Background: The universality of harmful beliefs and subsequent negative attitude towards the persons with mental illness among medical students are the main obstacles facing the mentally ill people that further prevents them from seeking help and care for their mental health problems. Mental health education plays a significant role in changing medical students' attitude towards persons with mental illness.

Aim: The aim of this study was to assess undergraduate medical students' attitude towards persons with mental illness and to compare their attitudes before and after mental health education.

Materials and methods: A longitudinal prospective study was carried on final year MBBS students (N=68) from June, 2017 to November, 2017. Pretest- posttest design was adopted using Attitude Scale for Mental Illness (ASMI) before and after theory classes and clinical posting for mental health education.

Results: Findings of present study revealed that these students were less stigmatized (6.44+1.93). Domain of restrictiveness improved (9.44+2.94 from 10.54+3.09) and benevolence increased significantly ($t=2.440$; $P=0.017^*$) after mental health education and training. Overall attitude of the study population was found to have unhealthy attitude towards persons with mental illness since the mean scores on separatism, stereotyping, restrictiveness and pessimistic prediction subscales were elevated on ASMI.

Conclusion: In conclusion, mental health education was found to be effective in changing the attitude of restrictiveness i.e., decreasing an uncertain view on the rights of people with mental illness and increasing kindness and sympathetic view to some extent among undergraduate medical students towards the persons with mental illness.

Key words: Attitude, medical students, mental health, mental illness

INTRODUCTION

An attitude denotes an adjustment of the individual towards some selected person, a group, or an institution. In forming an attitude towards some aspect of the environment an individual shows a readiness to respond¹.

Mental illness is an important public health issue worldwide; people with mental illness frequently encounter stigma, prejudice, and discrimination not only by the public, but also by the health care providers^{2,3}. According to World Health Organization, it was estimated that there are more than 450 million people in the world suffering from some kind of mental illness and constitutes 14% of the global burden of disease⁴.

Studies about population, attitude towards mentally ill show that people are afraid of mentally ill patients, would not employ them, would not marry them, would not establish any relationships with them, and mentally ill patients are considered as violent⁵. Stigmatization of mentally ill patients has negative effects in their rehabilitation. In this regard, the attitude towards mentally ill patients, especially the attitude of health professionals, which might play a major role as a model to public attitudes, could be a major factor in defining the quality of the future life of persons with mental illness.

Unfortunately, the universality of harmful beliefs and subsequent negative attitudes toward mentally ill is not in doubt even among medical students. Stigma and discrimination are the main obstacles facing the mentally ill people today and it is the shame and fear of this discrimination that prevents the persons with mental illness from seeking help and care for their disorders. Undoubtedly, mental health education plays a significant role in changing the attitude of students towards the persons with mental illness.

Previous studies indicated unfavorable attitude among medical students towards people with mental illness^{6,7}. Such negative

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attitude may be detrimental not only to the patient care but also to the society's attitude towards mental illness if they are present in the health professionals. Studies looking into the impact of education or information on attitude of individuals towards mental illness and mentally ill people have shown that education may have positive impact on the prejudice⁸. Health care professionals can no longer ignore mental health, as it plays an increasingly important role in the care of all patients. Further the doctors' negative attitude towards mental illness may compromise the quality of life and self esteem of patients consulting the physicians⁹. Few cross sectional studies assessed the impact of psychiatric exposure in changing the medical students' attitude towards psychiatry and mental illness in Nepal^{10, 11}. There are almost no studies done to assess the difference in attitude among medical students towards people with mental illness after mental health education of the same batch.

This study was aimed to assess medical students' attitude and to see the impact of mental health education and training on their attitude towards the persons with mental illness. The obtained information would be an aid to focus on education and other strategies to change the medical students' attitude towards the people with mental illness.

MATERIALS AND METHODS

A longitudinal study was conducted in the Clinical Psychology unit of Department of Psychiatry, Nepalgunj Medical College, Teaching Hospital, Kohalpur, Nepal. Pretest- posttest design was adopted. The study was started after ethical approval from the Institutional Review Committee of this College. Duration of the study was from June, 2017 to November, 2017. Study population consisted of total 68 students from final year MBBS. Participants were selected as per inclusion and exclusion criteria. They were assessed with Personal Data Sheet and Attitude Scale for Mental Illness (ASMI) after obtaining informed written consent to participate in the study.

MEASURES

Informed Written Consent Form

It was used to obtain the students' consent to participate in the study. This was prepared considering the ethics of research.

Personal Data Sheet

Personal Data Sheet was prepared for the study to obtain information of participants' demographic characteristics. It consisted of variables such as roll no., age, sex, residence, marital status, and history of contact with people having mental illness.

Attitude Scale for Mental Illness (ASMI)

This scale was used to assess the students' attitude towards the patients of mental illness. The ASMI was a valid and reliable (Cronbach's Alpha 0.86), self-report measure of attitudes. A modified version of the questionnaire, Opinions about Mental Illness in the Chinese Community in English version was used to collect the data¹². The ASMI section has 34 items and measures the general attitude to mental illness. This was a 5-point Likert scale rated participants' responses from totally disagree (1) to totally agree (5). The lower scores indicate positive attitude towards persons with mental illness. It consists of six domains of attitude: separatism, stereotyping, restrictiveness, benevolence (reverse coded), pessimistic prediction and stigmatization.

PROCEDURE

Total 94 out of 150 students of MBBS final year were taken for study before the lectures on Psychiatry and Clinical Psychology and 77 participants after the completion of their clinical posting in the department of psychiatry where they were exposed to the assessment and treatment (psychopharmacological and psychosocial) of the patients with mental illness. Each student was explained in brief about the purpose and procedure of the study. Their informed written consent was obtained. They were assured about the confidentiality of the responses given by them on the scale. Then Personal Data Sheet and Attitude Scale for Mental Illness were administered. The participating students were approached in lecture theatre for baseline assessment. Pre-assessment was done in a single session at a time and for post assessment, data collection was done during posting in the clinical psychology unit after completion of their training in groups. Total 68 students responded completely on the research tools.

Ethical Consideration

Ethical issues was given due importance. Informed written consent of the students was taken to participate in the study. The obtained results were kept confidential. The students not willing to participate in the study were given freedom to withdraw from the study at any part of the procedure.

Statistical Analysis

The data were analyzed using Statistical Packages in Social Sciences (SPSS) for windows IBM Ver. 19.0. The descriptive statistics and *t*-test were used for analysis of the obtained data. Statistical significance was assumed at $P < 0.05$.

RESULTS

From all the 150 students of final year MBBS, total 95 students participated in the baseline assessment. 18 students dropped out from the study in post-assessment and the data of 9 participants excluded because of incomplete response. The study sample consisted of total 68 students who participated in both the pre and post assessment. The mean age of students was 21.71 ± 1.34 years. Majority of students were males ($N=40$, 58.8%) and females were 28 (41.20%). More number of students (41, 60.30%) were from urban area and 27 (39.70%) were from rural background. Majority of students (52, 76.50%) did not have prior history of contact with the persons having mental illness. 16 (23.50%) students had prior history of contact with the people of mental illness. [Table I]

Table I

Socio-demographic characteristics of the study sample ($N=68$):
Number and percentage of different demographic variables:

Age (in years)	Mean	SD
	22.71	1.34
Number	Percentage	Gender
Male	40	58.80
Female	28	41.20
Residence		
Urban	41	60.30
Rural	27	39.70
History of contact		
Present	16	23.50
Absent	52	76.50

Table II illustrates the mean scores, SDs and 't' values of the participants on the different domains of attitude before and after the mental health education. The study population was having negative attitude towards the persons with mental illness since the mean scores on subscales of separatism (25.38 ± 4.62), stereotyping (11.62 ± 2.83), restrictiveness (10.54 ± 3.09) and pessimistic prediction (12.47 ± 3.35) were above cut-off point. Mean score on stigmatization (6.31 ± 2.14) was below cut-off score which revealed that the students were less stigmatized persons with mental illness. The mean score above cut-off point on benevolence scale (29.94 ± 3.93) suggested that the students had kindness and sympathetic view towards the persons with mental illness. No significant difference was found between the students' attitude towards persons with mental illness on separatism ($t=0.558$; $p=0.578$), stereotyping ($t=1.224$; $p=0.225$), restrictiveness ($t=1.697$; $p=0.094$), pessimistic prediction ($t=1.643$; $p=0.105$), and

stigmatization ($t=0.474$; $p=0.637$) scales before and after the mental health education. Decrement in the post test mean score (9.84 ± 2.94 from 10.54 ± 3.09) up to below cut-off point on restrictiveness indicating that the uncertain view on the rights of people with mental illness decreased after education. Significant difference between mean scores on benevolence ($t=2.440$; $p=0.017$) indicated that students' kindness and sympathetic view increased after exposure to the persons with mental illness and their management. No significant change was observed in overall attitude ($t=1.102$; $p=0.274$) of the students after mental health education.

Table II

Table II: Mean scores and SDs of medical students ($N=68$) compared between pre and post test on the different domains of Attitude Scale of Mental Illness (ASMI)

Domains	Pre-assessment Mean (SD)	Post-assessment Mean (SD)	t	P
Separatism	25.38 (4.62)	25.04 (4.40)	0.558	0.578
Stereotyping	11.62 (2.83)	11.10 (2.93)	1.224	0.225
Restrictiveness	10.54 (3.09)	9.84 (2.94)	1.697	0.094
Benevolence	29.94 (3.93)	31.00 (3.97)	2.440	0.017*
Pessimistic Prediction	12.47 (3.35)	11.81 (3.46)	1.643	0.105
Stigmatization	6.44 (1.93)	6.31 (2.14)	0.474	0.637
Over all attitude	96.53 (9.33)	95.10 (10.62)	1.102	0.274

SD: Standard Deviation; *Significance at $P < 0.05$

DISCUSSION

This was a longitudinal study to determine the nature and extent of medical students' attitude and to assess the impact of mental health education in changing their attitude towards persons with mental illness.

High scores were found in both the negative and positive domains of attitude except on stigmatization scale as discussed below. However higher scores on negative domains indicated an overall unhealthy attitude of medical students towards the persons with mental illness.

Separatism

High score on this subscale indicated these students' negative attitude when it came to accepting the autonomy and independence of the persons with mental illness and considering them as part of the larger unaffected community.

Stereotyping

The students' high score on this subscale depicted respondents' maintenance of social distance towards persons with mental illness. As in most societies, stereotypes about mental illness, such as influence of evil spirits, religious afflictions, and deviation from societal norms, were rated high by these students.

Restrictiveness

High scores indicated that the students were having an uncertain view on the rights of people with mental illness indicating that people with mental illness cannot enjoy personal or social life events, such as marriage, working, having children or family.

Benevolence

Higher benevolence score showed that the students were having kindness and sympathetic view towards the persons having mental illness.

Pessimistic Prediction

High score on this subscale revealed that the concept of partial recovery and rehabilitation of mentally ill people was lacking among these students.

Stigmatization

The below cut off score on this subscale indicated that the students were having less discriminatory behavior towards people mental illness in oppose to that mentally ill people are deeply discredited by his/her society and gets rejected as a result of the same.

Findings of present study revealed that the undergraduate medical students had kindness and sympathetic view about people with mental illness and they were less stigmatized towards them. Studies done in Nepal also concluded that the medical students and interns had positive or neutral attitude towards mental illness and psychiatry^{10, 11}. However, the students had negative attitude towards the persons with mental illness on the domains of separatism, stereotyping, restrictiveness and pessimistic prediction. These findings were consistent with a study from India in which undergraduate medical students were found to have multiple lacunae in their knowledge towards mental illness, persons with mental illness, treatment and education in mental health⁶. High level of ignorance, prejudice and discrimination towards patients with mental illness had been confirmed among health professionals in different studies¹³⁻¹⁵. Few other studies also reported unfavorable attitude towards people with mental illness^{16,17}. No significant difference was observed in separatism, stereotyping, restrictiveness and pessimistic prediction among the participants after mental health education in present study. This result was supported by a study from India, in which the findings revealed no significant difference in the domains of separatism, stereotyping, restrictiveness and pessimistic prediction between the students' those undergone psychiatry course and those had not¹⁸.

However improvement was seen in restrictiveness attitude indicating that the students' uncertain view on the rights of persons with mental illness was decreased after training. A study from Malaysia concluded that final year students had more favorable attitude towards mentally ill people as compared to first year medical students¹⁴. In a cross sectional study on impact of psychiatric curriculum on attitude of interns and medical students towards mentally ill, significant differences were found between interns' and students' attitude. Overall interns were found to have more favorable attitude as compared to the students from different professional years towards mentally ill people¹⁹. This study showed increment in the domain of benevolence towards persons with mental illness after mental health education. The students became more sympathetic and kind towards mentally ill people. Findings from previous studies also supported that of our study^{20,21}.

Finding of this study was also supported by previous studies that revealed more unfavorable opinion about treatment and rehabilitation of people with mental illness among medical students²². In a recent study from Iran demonstrated medical students intolerant attitude towards having close relationships, did not accept to be willing to work with people having mental illness²³.

Findings of this study revealed that with exposure to lectures and clinical posting, there was an increase in the understanding and awareness of the condition of mental illness. Role of education had been cited as integral to reduce stigma towards people with mental illness²⁴. Research had demonstrated positive effects of completing undergraduate psychiatric training and of specific education program on attitude of medical students²⁵.

Study from Nigeria concluded that stigmatizing attitudes towards people with mental illness seem to be most strongly affected by clinical training. Psychiatric education and especially clinical experience result in more progressive attitudes towards people with mental illness²⁶.

Clinical rotation in psychiatry found to be an important factor influencing medical student's attitudes towards people with mental illness²⁷. Several other studies also showing significant positive changes in students' attitude after 4-week and 8-week clinical training in psychiatry, preparing doctors to be more responsive towards psychological dimension of physical illness^{28,29}.

It is possible to say that social intercourse and more work experience with psychiatric patients have made a change in how final year students feel about the patients. Feeling indifferent and having less fear can be considered as a positive change in the evaluation of patients from the point of view of doctor-patient relationship.

CONCLUSION

Findings of this study revealed that medical students' attitude in the domain of restrictiveness towards the persons with mental illness was improved after mental health education. However, significant difference was found only in benevolence domain after education. Study population was found to have less stigmatized attitude towards people with mental illness. Rest of the findings indicated that medical students' attitude of discrimination, maintenance of social distance, lack of concept of partial recovery and rehabilitation of patients with mental illness did not change even after mental health education and training. Findings of this study suggested that adequate modifications to existing medical curriculum would help in improving undergraduate medical students' attitude towards persons with mental illness. This study had few limitations as well. Students' batch was assessed only in MBBS final year that made difficult to generalize the findings. It would be beneficial to follow up the cohort prospectively and assess the change in attitude over time.

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Burden of Anemia: A profile of a tertiary care hospital

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ABSTRACT

Introduction : Globally, anemia is the burning health problem with significant disability associated with it. Iron deficiency anemia (IDA) is the commonest cause of anemia more so in developing and underdeveloped part of world. Normocytic anemia is the common finding following microcytic hypochromic and macrocytic in peripheral blood film study. To understand more about the type of anemia among anemic patients in our setting this study was carried out.

Objectives : This study aims to see the prevalence and aetiology of anemia among Nepal army personnel and their families in a Kathmandu based tertiary level hospital.

Methods : This cross-sectional study was conducted over a six months period through June 30th to December 31st 2017 among 342 anemic patients presented to hematology clinic of Shree Birendra Hospital in Kathmandu with the help of data collection tool. Etiology of anemia was worked out. The study was conducted after approval from local IRC. Collected data were entered in SPSS version 22 and analyzed.

Result : Mean hemoglobin value was 8.45 ± 1.61 gm/dL and the mean age of the patient was 52.04 ± 18.32 years. Among the patients of anemia, generalized weakness was the commonest (159, 46.5%) presenting complaint followed by per vaginal bleeding and upper gastrointestinal bleeding. Moderately severe anemia was the commonest (159, 46.5%) laboratory finding. In peripheral blood film study, microcytic hypochromic picture was the commonest finding (169, 49.4%) favoring commonest cause of anemia as iron deficiency followed by anemia of chronic disease. 70 % of the participants were female.

Conclusion: The study identified nonspecific complaints like generalized weakness as the predominant presenting complaints of anemia which is commonly neglected. Further, noninvasive tests like peripheral blood film are an important diagnostic tool which can guide us to the possible aetiology of anemia. This study showed iron deficiency anemia and anemia of chronic disease as important differential diagnosis of anemia in our context.

This was a small scale study conducted to access the prevalence of anemia among Nepal army personnel and their families. Hence a larger multicentric study is needed to make it more applicable.

Key-words: Anemia, microcytic hypochromic, peripheral blood film

INTRODUCTION

Anemia is considered the most prevalent nutritional deficiency globally, affecting about a quarter of the world population, especially children and women of reproductive age^{1,2}. According to WHO, iron deficiency is thought to be the most common cause of anaemia globally, although other conditions,

such as folate, vitamin B12 and vitamin A deficiencies, chronic inflammation, parasitic infections, and inherited disorders can all cause anemia.

Iron deficiency refers to the reduction of iron stores that precedes overt iron deficiency anemia³. Iron deficiency anemia (IDA) is the commonest nutritional deficiency and is major cause of anemia worldwide⁴⁻⁸. More so in developing and underdeveloped world^{3,4}. Though IDA has several etiological factors; inadequate intake, impaired absorption or transport, physiologic losses, or chronic blood loss secondary to disease are its causative factors⁴⁻⁸. Even in older age group it is equally common with more than 20% by 85 years. With advanced age group etiology of anemia shift towards anemia of chronic disease than iron deficiency in young⁹. A study done in adolescent group in Terai region of Nepal also had a similar outcome where Iron Deficiency Anemia was the most common

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cause¹⁰. In elderly population, prevalence of anemia may even exceed 70% with normocytic picture being the dominant type with microcytic hypochromic and macrocytic being other type in peripheral film which can be improved with definitive management¹¹. Likewise, another hospital based study done in elderly population at Kashmir also had female predominance with most prevalent age group being 60-69 years and the commonest etiology to be normocytic anemia, which is comparable to our study¹². There are few studies done in Nepal on anemia. One study from eastern Nepal shows high burden of IDA accounting 65.6% in adolescent population. Similarly, in reproductive age group female, its prevalence is 20% while in young breastfeeding infant it is more than double¹³. To fill the gap of understanding about the type of anemia among anemic patients in our context this study was carried out.

METHODS AND MATERIALS

Selection and Description of Participants

This cross-sectional study was conducted among all consecutive anemic patients presented to a hematology clinic of at Shree Birendra Hospital, Kathmandu over a period of six months from June 30th to December 31st 2017. With the help of semi-structured questionnaire demographic variables, presenting complaints, baseline laboratory parameters were evaluated. Etiologies of anemia were clinched with the help of laboratory parameters on top of clinical profile. Among the cases evaluated, peripheral blood film was studied in all cases and specific tests were performed as per the need of the cases. The study proposal was approved by ethical review committee (IRC) of Nepalese army institute of health sciences (NAIHS) prior of conducting the study. Informed verbal consent was taken while enrolling the individual in the study.

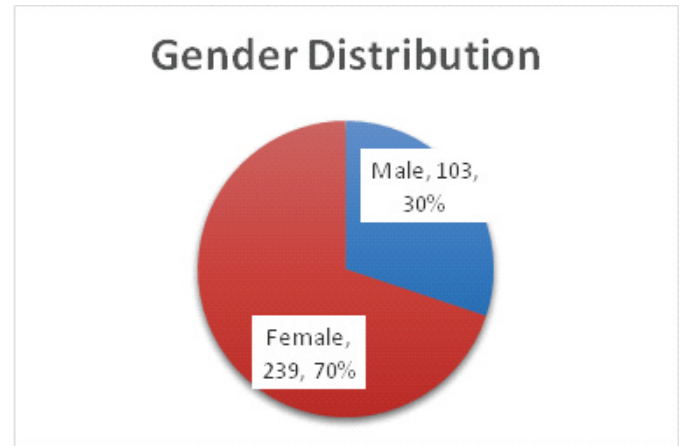
Statistics

The collected were entered in SPSS version 22 and analyzed. Chi-square test was used to see association between important determinant of anemia with the help of p value based on 95% confidence interval and 5% standard error.

RESULT

Total 342 cases were enrolled in this study. Mean age of the participants was 52.04±18.32 years, with minimum being 2 years and maximum being 103 years. Mean hemoglobin value was 8.45±1.61 gm/dl. There were 70% females while rest were males. (Figure 1.)

Figure 1. Gender distribution



Among the patients enrolled, generalized weakness was the commonest (159, 46.5%) presenting complaint followed by per vaginal bleeding, upper gastrointestinal bleeding. While other complaints included shortness of breath, body swelling, paleness, per rectal bleeding, myalgia, malar rashes and other modality of bleeding like acute traumatic blood loss and hemoptysis in descending order. (Table 1.)

Table 1. Presenting complaints

Presenting complaints	Frequency	Percent
Weakness	159	46.5
PV Bleeding	45	13.2
UGI bleeding	41	12.0
SOB	28	8.2
Body swelling	19	5.6
Paleness	11	3.2
Myalgia	7	2.0
Malar Rashes	7	2.0
Other cause of Blood Loss	25	7.3
Total	342	100.0

Moderately severe anemia was the commonest (159, 46.5%) laboratory finding among anemic patients followed severe, mild and life threatening in the descending order (Table 2.).

Table 2. Severity of Anemia according to WHO anaemia categories (haemoglobin cut-offs in g/dl).

Anemia Severity	Frequency	Percent
Mild Anemia (above 10g/dL)	66	19.3
Moderate Anemia (8-10 g/dL)	159	46.5
Severe Anemia (6.5-8 g/dL)	77	22.5
Life threatening (less than 6.5 g/dL)	40	11.7
Total	342	100.0

In the peripheral blood film study, microcytic hypochromic type was the commonest finding followed by MHA with Anisopoikilocytosis and Polychromasia. Normocytic normochromic picture was the second commonest finding which included anemia of chronic disease.

Table 3. PBF finding

PBF	Frequency	Percentage
MHA with Low Mentzer index	10	2.9
MHA	169	49.4
MHA with PC and AP	35	10.2
MHA with AP	24	7.0
Sickle cells	2	0.6
Normocytic Normochromic	56	16.4
Macrocytic Anemia	16	4.7
Pancytopenia	15	4.4
Blast Cells	9	2.6
Fragments of RBCS	2	0.6
Spherocytes	3	0.9
TG TV	1	0.3
Total	342	100.0

MHA-Microcytic hypochromic anemia TG-Toxic granulation
 PC-Polychromasia TV-Toxic vacuolation
 AP-Anisopoikilocytosis

Table 5. Relation of gender, etiology, total count and platelets with severity of anemia

Variables		Anemia Severity				Total	p-value
		Mild Anemia (above 10)	Moderate Anemia (8-10)	Severe Anemia (6.5-8)	Life-threatening (<6.5)		
Gender	Male	15	45	24	19	103	.052
	Female	51	114	53	21	239	
Etiology of anemia	IDA	31	91	43	14	179	.000
	Malignancies, both hematological and non hematological	5	18	9	14	46	
	Hemolytic Anemia	8	7	9	0	24	
	Anemia of Chronic diseases	13	34	16	5	68	
	Other causes	9	9	0	7	25	
TC	<4000	10	32	15	11	68	.000
	Normal (4-11000)	52	118	59	18	247	
	>11000	4	9	3	11	27	
Platelets	<150000	18	49	21	16	104	.003
	Normal (150-450000)	47	109	51	19	226	
	>450000	1	1	5	5	12	

DISCUSSION

Nonspecific symptoms like weakness, fatigue, are one of the commonest modes of presentation of anemia which can also be

seen in conditions other than anemia causing diagnostic difficulties to the clinicians. In our study, generalized weakness was the most common complaint with a frequency 159, 46.5%. Iron deficiency was the leading cause of anemia (179, 52.3%). The other detected etiologies in descending orders were anemia of chronic disease (68, 19.8%), malignancies, including both hematological and non hematological (46, 13.4%). Whereas, a study done by Chernetsky et al., revealed chronic diseases (65%) as a leading cause of anemia, followed by idiopathic etiologies (15.9%), chronic liver disease (13.2%), and nutritional deficiency (iron, vitamin B12, folate) (4%)¹⁴.

Similarly, another study done by Joosten et al., also showed the commonest etiologic factors for anemia in elderly population to be chronic disease anemia (34%), followed by idiopathic anemia (17%), iron deficiency anemia (15%), post hemorrhagic anemia (7.3%), vitamin B12 and folate deficiency anemia (5.6%), chronic leukemia or lymphoma (5.1%) and myelodysplastic syndrome and acute leukemia (5.6%)¹⁵.

Low dietary intake of iron and loss due to parasitic infections are the main cause of iron deficiency anemia in our context¹⁶. Several pro- and anti-inflammatory cytokines and hormones produce the suppression of erythropoiesis in chronic disease. Alterations in the metabolism of iron via the molecule hepcidin and ferritin are largely responsible for the consequent anaemia¹⁷.

The peripheral blood smear may be considered as an important and simple diagnostic tool, even in the era of genetic and molecular diagnostic techniques. In our study, 169, 49.4% of patients had microcytic hypochromic anemia favoring iron deficiency anemia as the aetiology of anemia which was confirmed with iron profile test and other possible causes of microcytic hypochromic anemia were also ruled out.

A study done by Kumar A et al concluded that manual parameters like microcytosis, macrocytosis and hypochromia expressed as a percentage, have shown significant correlation, with their corresponding automated parameters¹⁸.

CONCLUSION

The most common aetiology of anemia in patients enrolled was iron deficiency, followed by anemia of chronic disease and malignancy, both hematological and non hematological. The most commonly encountered complaints on presentation in general were subjective non specific ones such as weakness, fatigue and lassitude whereas in females it was per vaginal

bleeding. Most of the patients belonged to moderate anemia group. Severity of anemia was not related with total leukocyte counts and platelet counts. This was a small study conducted among army personnel and their family at a tertiary level of Army Hospital, further big scale study might be needed to may it more applicable.

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Broken Femoral Intramedullary Locking Nails with Nonunion A difficult combination!

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ABSTRACT

Background: The diaphyseal fracture of femur is universally treated with intramedullary interlocking nails. Non-union with properly done interlocking nail is not very common. When broken nail and non-union coexist, it becomes a real challenge. We reviewed our isolated femoral shaft fractures treated with antegrade interlocking nails that presented with broken nails, bolts and non-union. We discuss our simple technique of retrieval of broken nail units, their management and results with revision nailing.

Materials and methods: We reviewed our cases of femoral intramedullary locking nails operated from 2012 November to 2017 November and observed that, out of 197 cases; Eight cases of broken nails were managed in our center Nepalgunj medical college Nepalgunj. Patients were operated in lateral position under combined spinal epidural anaesthesia. We removed the broken nail segment with our simple yet less destructive technique and revised with bigger nails.

Results: Out of 197 cases of fracture shaft femur treated with IM nail, 8 cases were found to have broken nails. Seven cases were associated with non-union of femur. In one case, the femur united in spite of broken nail. In all the cases broken nail were removed in a similar manner and was struggle free. Exchange nailing was done in seven cases and only one case was augmented with bone graft from ipsilateral iliac crest. Union was achieved in all seven cases.

Conclusion: IMIL nail is the well-established, minimally invasive osteosynthesis for long bones fracture. Nonunion and broken implant when coexist the management becomes difficult.

Keywords: Broken nail; Broken nail with nonunion; Femoral fracture; IMILN; nonunion; revision nail.

INTRODUCTION

Retrieval of broken intramedullary locking nail is a real challenge. Proper planning and preparation minimizes the surgical time and complications as well. The fatigued nails may break during removal, so one should be prepared to deal with a broken nail in each case of a nail removal¹. The use of hooks, pliers, arthroscopic clamps, impacted guide wires, basket forceps and biopsy forceps are described for their removal²⁻⁸. In worst situations, non-union has been dealt with plate and external fixator ignoring a retained piece of nail as such⁹. Broken implant is usually associated with poor stabilization, delayed union and non-union^{10,11}. The design of the nail itself contributes maximum stress concentration at its proximal and distal ends making them prone to get fractured at these sites¹⁰. Unusually, the fracture may not heal before fatigue failure of the implant occurs due to cyclical loadings and nail breaks at

the fracture site¹². This happens when weight bearing is permitted before features of clinico-radiological healing. We reviewed our cases of femoral intramedullary locking nails managed in our center. We discuss our management with broken femoral intra medullary interlocking (IMIL) nails and their outcomes. We also discuss our simple technique of retrieval of broken segment of intramedullary nail that we utilized in all our cases.

MATERIALS AND METHODS

This retrospective study was conducted in our tertiary care hospital at Nepalgunj Medical College, Nepalgunj. We reviewed our cases of femoral intramedullary locking nails operated from 2012 November to 2017 November and observed that, out of 197 cases; Eight cases of broken nails were managed in our center Nepalgunj medical college Nepalgunj. Closed fracture femurs those were managed with antegrade intramedullary interlocking nail were included in this study. The nails we used are local made stainless steel IMIL nail. Open and segmental fractures were excluded from the study. Cases of multiple fractures were also excluded from the study. Out of 197 isolated femur fractures stabilized with intramedullary locking nails, 8 femurs presented with broken implant. Broken nail removal and secondary procedures were carried out in 7 patients.

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All patients were operated under combined spinal epidural Anaesthesia (CSEA). Patients were kept in lateral position with the affected side up. Previous skin incisions were utilized to remove proximal and distal locking bolts. The proximal portion of nail was approached from the previous skin incision proximal to tip of greater trochanter. An attempt was made to negotiate straight-tipped guide wire (used for humerus nailing) from the proximal end of nail including the distal broken end. If distal broken fragment was displaced and guide wire negotiation was unsuccessful proximal broken nail piece was removed with the help of nail extractor with back slap hammer attached to it. After the removal of proximal broken piece of nail, the straight tipped guide wire was negotiated under Image Intensifier inside the broken distal nail. The knee was flexed to 60 degree and the guide wire was advanced with the help of T-handle attached to it. Once the exit point was noted under Image Intensifier from the intercondylar notch close to anterior cortex it was made to come out from stab incision displacing the patella manually [Fig. 1a, b].

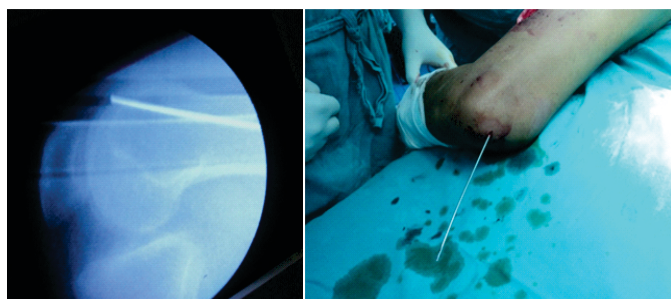


Fig. 1a, b: Guide wire being delivered close to the Anterior cortex. Flexion displaces patella downward.

The deeper dissection was done up to femoral cortex with the help of artery forceps. A hollow mill was mounted over the guide wire and the distal femoral cortex was drilled. The straight tipped guide wire was bent completely so as to form a bulb at the tip. It was then withdrawn slowly with pliers till the bulb crosses the distal femur and reached close to the tip of nail [Fig 2a, b].

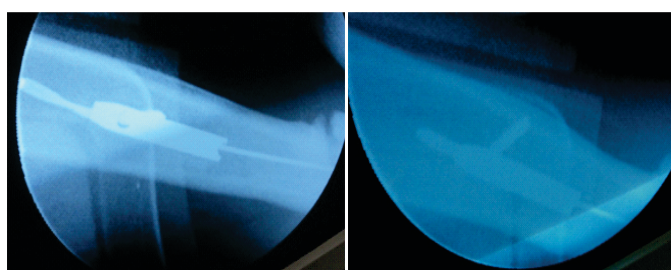


Fig. 2a, b: Bent guide wire being engaged inside the hollow of nail

A hollow with back slap hammer was mounted over guide wire and stabilized with T-handle with chuck. Gentle but repeated

back slap facilitates the migration of broken nail, which was visualized under image and removed [Fig. 3, 4].

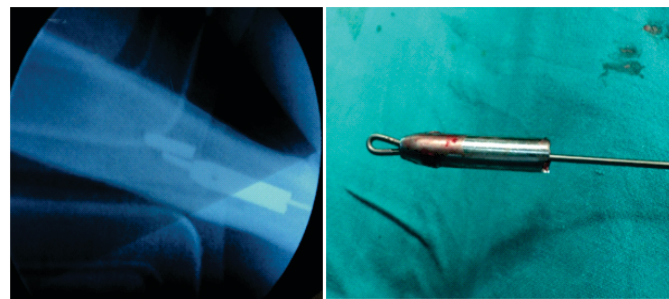


Fig. 3: Nail piece being delivered. Broken locking bolt fall inside medullary canal which was retrieved from the same locking hole enlarging its diameter under image guidance with the help of artery forceps.

Fig 4: Removed nail piece. Note the complete bend and bulb of guide wire and the tip inside nail

When exchange nailing was planned serial reaming up to 2-3 mm more of the previous canal size was done and 2 mm more the size of previous nail was inserted. Both the proximal and distal holes were locked and nail was stabilized. In one of our cases, the fracture site was grafted from the ipsilateral iliac crest. However, the fibrous tissue was not disturbed much in this case.

RESULTS

We reviewed Radiographs of 197 cases of isolated fracture femur treated with IMIL nail. Out of which only 8 cases were found to have broken nail. Seven cases were associated with non-union of femur. In one case, the femur had united in spite of broken nail, where nail was broken proximal to the fracture site [Fig. 5].



Fig. 5: Early weight bearing and nail failure. Fracture united despite nail failure.

In one case both nail and locking bolt were broken [Fig 6, 7a, b, c,].



Fig. 6: Post operative AP and Lateral X-ray of thigh showing short, small diameter nail with single proximal and distal locking bolts in a comminuted mid shaft femur.

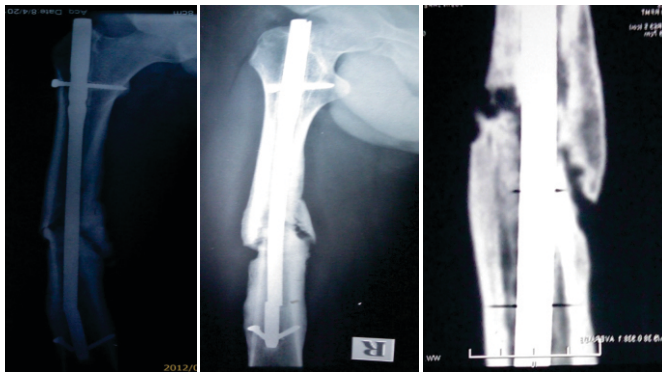


Fig. 7a, b: AP and lateral X-ray of same patient (Fig 6) showing broken nail distal to non union site with broken bolt.

Fig. 7c: Non union evident in CT scan.

Two nails broke at the fracture site and resulted in non-union. In rest of the four cases nail broke distal to fracture site. In all the cases broken nail was removed in a similar manner and was struggle free. The remaining broken intramedullary screw was approached enlarging the screw entry hole and holding it with artery forceps under image guidance. Exchange nailing was done in 7 cases and only one case was augmented with graft form ipsilateral iliac crest [Fig 8].

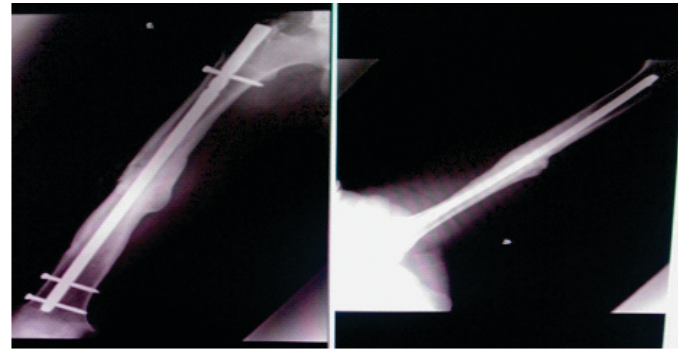


Figure 8: AP and lateral X-ray of same patient (Fig 6) after revision nail and bone grafting helped solid union. Proximal static locking bolt was removed to dynamize the nail after 2 months.

Union was achieved in all 7 cases. Table 1 summarizes the results of all cases.

Case No	Fracture site in femur	Nail failure site	Presentation	Surgery	Probable reason of nail failure	Union time (weeks)
1	Proximal 3 rd	Proximal to # site	United fracture with nail failure	Nail removal	Early weight bearing	
2	Distal 3 rd	Distal to # site	Non union with nail failure	Exchange nail	Early weight bearing	20
3	Mid shaft comminuted	Distal to # site	Non union with nail failure	Exchange nail + BG	Short small diameter nail	24
4	Distal 3 rd	Distal to # site	Non union with nail failure	Exchange nail	Small diameter nail	16
5	Distal 3 rd	Distal to # site	Non union with nail failure	Exchange nail	Small diameter nail	24
6	Mid shaft	# site	Non union with nail failure	Exchange nail	Short nail	28
7	Proximal 3 rd	# site	Non union with nail failure	Exchange nail	Fall	20
8	Distal 3 rd	Distal to # site	Non union with nail failure	Exchange nail	Small nail, single distal locking bolt outside hole (failed distal locking)	28

Table 1

DISCUSSION

Intramedullary interlocking nail for femoral shaft fracture offers many advantages. Small incision distant to the zone of injury, undisturbed fracture hematoma, bone grafts from reaming, and physiological load transmission down the mechanical axis of bone make it universal for diaphyseal fractures of long bones. Nail failures have been reported in 0.5 - 3.3% of cases with stainless reamed nail in literature ¹³. Retrieval of the distal fragment of a broken nail without destructive surgery can be a challenge. Many surgical techniques have been described for the retrieval. We share our experience with broken femoral nails and their management.

Distal locking holes are the weakest points that are expected to fail because of stress concentration caused by the hole effect and slot effect. Nicking the area by drill bit around the distal

holes during locking further weakens the nail strength. Nail breakage can also occur when weight bearing begins before the fracture regains 50% of its original stiffness¹⁴. Protected weight bearing till clear radiographic union avoids loading the nail beyond its limit of endurance¹⁰. The smaller diameter nails of inadequate length may cause failure because of increased concentration of stress at the locking holes. The screw hole area of these small nails can occupy up to 50% of the diameter (normally 30%)¹⁴. The comminuted and unstable fracture patterns may incur additional stress on the locked nails.

Another reason for nail breakage is the biomechanical properties of nail. Affordability is the determining factor for the standard of nails in developing countries. Such locally available nails may not withstand the cyclical loading stress imposed by walking if they are permitted to bear weight with caution. Since we use locally made low cost implants the ratio of nail breakage goes higher than the standard nail.

Various techniques have been described for the extraction of distal fragment of broken tibial and femoral nails, including the use of hooks, long forceps, cerclage wires, multiple guidewires, hand removers and push-out techniques²⁻⁸. Similar technique may not work in all and needs individualization. Standard broken nail retrieval sets are available from the different manufactures like Synthes and Zimmer but these sets are not available in our set up. So we are left with customized and improvised techniques. We tried to remove the distal broken nail with ball tipped guide wire. For which, the smooth tip guide wire was inserted from piriform fossa and taken out from the intercondylar notch close to anterior cortex under image. Skin and deeper tissue was dissected till the cortex and hollow mill was used to make a hole larger in the distal femur. From the same tract ball tipped guide wire was inserted and delivered from piriform fossa. We encountered an unusual complication with this technique that ball of the ball tipped guide wire detached from the guide wire and entered inside knee joint [Fig. 9a, b].

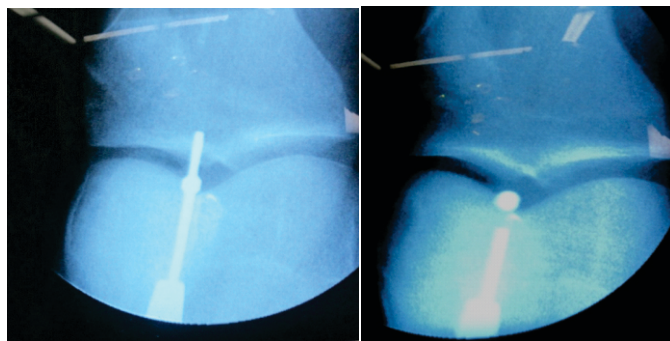


Fig. 9a, b: Retrograde ball tipped guide wire inserted to deliver broken nail segment. The ball slipped from the guide wire and entered inside joint.

So we improvised our technique. We then passed a smaller size guide wire that is used for humerus nail. The guide wire was passed from the piriform fossa and entered inside the nail under image guidance. Guide wire was attached with T handle and with rotatory movement taken out from knee flexing the knee joint. The straight tipped guide wire was bent completely so that it forms a bulb at the tip. It was then withdrawn slowly with a plier till the bulb crosses the distal femur and reaches close to the tip of nail. A hollow with back slap hammer was mounted over guide wire and stabilized with T-handle with chuck. Gentle but repeated back slap facilitates the migration of broken nail, which was visualized under image. After the success of the index case we were following the same technique in all the case. We retrieved all the distal broken nail fragments in the similar way. We suggest passing the guide wire without removing the proximal nail fragment in case of complete but undisplaced broken nails. Whereas, in case of displaced broken nail removal of proximal fragment and negotiation of guide wire inside the distal segment of nail under image is helpful. Only the bent at the tip of guide wire distally also serves the purpose, but with repeated blow the bent tip may straighten and give away. So a complete bent with bulb at tip prevents such problems.

Additional bone grafting is not usually required as suggested by previous authors. We grafted only one case where the nonunion was of prolonged duration. Otherwise, bone grafting was not required for satisfactory healing in our series too.

Ours is a simple, reproducible and successful technique to deal with the broken femoral nails. Only disadvantage is a caution to take out the guide wire from intercondylar notch nearer to the anterior cortex. Otherwise, cruciates and meniscus are at risk to get injured. The guide wire therefore should be monitored under image. The flexion of the knee and manipulation of patella would prevent the injury to patella as well.

CONCLUSION

If the principles of nailing are followed properly, nail breakage can be prevented. Distal third fractures are prone to nail breakage. Increasing the “fracture –locking hole” distance, delayed weight bearing; dynamisation and protected weight bearing may prevent nail breakage. Early intervention of deformed nail would prevent the time taking and destructive procedures. Our technique is simple and easily reproducible to

deal with cases where standard broken nail extraction sets are not available.

Conflict of interest statement: No conflict exists.

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Seroprevalence of Human Immunodeficiency Virus, Hepatitis B Virus and Hepatitis C Virus in Nepalgunj Medical College, Nepal

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ABSTRACT

Introduction: Human immune deficiency viruses (HIV), Hepatitis B viruses (HBV) and Hepatitis C viruses (HCV) are the three most common chronic viral pathogens known. The viruses have common routes of transmission (such as blood and blood products, sharing needles to inject drugs and sexual activities) and similar risk factors.

Aim and objective: The aim of study was to determine the seroprevalence of HIV, HBV and HCV in Kohalpur Teaching Hospital, Nepalgunj Medical College.

Materials and methods: This is a descriptive hospital based study. The study was conducted at Nepalgunj Medical College, KTH, Banke. In this study, 2865 were tested for HIV, 2849 were tested for HBV and 2950 were tested for HCV from 12-01-2017 to 06-07-2017.

Results: In case of HIV, 1781 (62.16%) were male and 1064 (37.84%) were female. The study revealed that in HIV reactive case was found to be 0.14% where 0.16% (3) were males and 0.09% (1) were females. In case of HBV, 1743 (61.18%) were males and 1106 (38.82%) were females. The prevalence of HBV reactive was found to be 1.65% where 1.2% (34) in male and 0.45% (13) in female. In case of HCV, 1200 (40.67%) were male and 1750 (59.33%) were female. The prevalence of HCV reactive was found to be 0.03% (1) which was only in female.

Conclusion: We found that the prevalence of HIV was more predominant in males 0.16% (3). The HBV was more prevalent followed by HIV and HCV and the prevalence of HBV in male was more 1.2% (34) as compared to females 0.45% (13).

Key words: HIV, HBV, HCV, Seroprevalence

INTRODUCTION

Human immune deficiency viruses (HIV), Hepatitis B viruses (HBV) and Hepatitis C viruses (HCV) are the three most common chronic viral pathogens known. Despite their biological differences and natural history of chronic infection, the viruses have common routes of transmission (such as blood and blood products, sharing needles to inject drugs and sexual activities) and similar risk factors¹.

The HIV is the etiologic agent of AIDS. AIDS was first recognized clinically in 1981, although the first known case of AIDS has been traced to 1959. HIV exists as two major viral species; HIV-1 and HIV-2. HIV-1 was initially discovered in 1983 and HIV-2 in

1986. These two viruses belong to the retrovirus group and are slow viruses².

HIV/AIDS has had a great impact on society, both as an illness and as a source of discrimination. The disease also has large economic impacts. There are many misconceptions about HIV/AIDS such as the belief that it can be transmitted by casual non-sexual contact. There is no cure or vaccine available as on date, however, antiretroviral treatment can slow the course of the disease and may lead to a near-normal life expectancy. Treatment is recommended as soon as the diagnosis is made. Without treatment, the average survival time after infection may be around 10 years³.

As of 2016, approximately 36.7 million people are living with HIV globally. In 2016, approximately half are men and half are women. There were about 1.0 million deaths from AIDS in 2016⁴.

Hepatitis B virus (HBV) is a member of the hepadnavirus family. HBs Ag (also known as the Australia antigen) is the surface antigen of the hepatitis B virus (HBV). It indicates current hepatitis B infection. This is because it was first isolated by the American research physician and Nobel Prize winner Baruch S.

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Blumberg in the serum of an Australian Aboriginal person. It was discovered to be part of the virus that caused serum hepatitis by virologist Alfred Prince in 1968³. The term Hepatitis B was adopted by the World Health Organization (WHO) in 1973².

The infection can be diagnosed 30 to 60 days after exposure. Diagnosis is typically by testing the blood for parts of the virus and for antibodies against the virus. It is one of six known hepatitis viruses i.e. A, B, C, D, E and G³. Recent estimates of the number of people chronically infected with HBV have ranged from 240 million to 350 million, with more than two billion humans globally ever having been infected⁵.

Hepatitis C Virus (HCV) was identified in 1989 as the main etiological agent of non-A, non-B hepatitis (NANBH) accounting for greater than 90% of post-transfusion hepatitis cases. Hepatitis C Virus (HCV) is a flavivirus which belongs to Flaviviridae family. It is now the commonest cause of post-transfusion hepatitis in the various developed countries.

Hepatitis C is an infection that mostly affects the liver. Often, a person with Hepatitis C does not have any symptoms. However, chronic infection can scar the liver. Many years of infection may cause cirrhosis. Sometimes, people with cirrhosis also have liver failure or liver cancer. They can also have very swollen veins of the oesophagus and stomach. Scientists began studying the Hepatitis C virus in the 1970s, and in 1989 they proved that the virus exists. As far as scientists know, this virus does not cause disease in any animals other than humans. The medications that are normally used to treat Hepatitis C are called peg interferon and ribavirin. Between 50-80% of people who are treated (5 to 8 out of every 10) are cured. However, if a person's Hepatitis C has progressed (or gotten worse) so much that the person has cirrhosis or liver cancer, the person might need a liver transplant. This makes it possible for the person to survive, but the Hepatitis C virus usually comes back after the transplant. There is no vaccine that works to prevent people from getting Hepatitis C³.

Total global HCV prevalence is estimated at 2.5% (177.5 million of HCV infected adults), ranging from 2.9% in Africa and 1.3% in Americas, with a global viraemic rate of 67% (118.9 million of HCV RNA positive cases), varying from 64.4% in Asia to 74.8% in Australia⁶.

MATERIALS AND METHODS

This was a descriptive hospital based study, 2865 were tested for HIV, 2849 were tested for HBV and 2950 were tested for

HCV, attending to Nepalgunj Medical College, KTH, Nepal, were investigated for HBV, HCV and HIV from 12-01-2017 to 06-07-2017. The prevalence of HBV, HCV and HIV in the male was compared with that in the female.

HIV test

Tri Dot test is manufactured and marketed by DIAGNOSTIC ENTERPRISES, (de@diagnosticenterprises.com).

Based on flow through technology, HIV TRI-DOT test is a visual, rapid, sensitive and accurate immunoassay for the differential detection of HIV-1 and HIV-2 antibodies (IgG) in Human Serum or Plasma using HIV-1 and HIV-2 Antigens immobilized on an immunofiltration membrane. The test is a screening test for anti-HIV-1 and anti-HIV-2 and is for in vitro diagnostic use only. HIV TRI-DOT has been developed and designed using gp41, C-terminus of gp120 and gp36 representing the immunodominant regions of HIV-1 & HIV-2 envelope gene structure respectively.

The test is named for the three dots that appear to give the result: one pink dot is a control dot, showing the test is functioning properly; one dot shows the presence of HIV-1 antibodies and one dot shows the presence of HIV-2 antibodies.

HBV

Virucheck is manufactured by Orchid Biomedical System, 88/89, Phase II C, Verna Industrial Estate, Verna Goa-403722, India.

It one step test for HBsAg is a rapid, quantitative, two side sandwich immunoassay for detection of Hepatitis B surface antigen, a marker for Hepatitis B infections, in serum/plasma specimen.

Virucheck one step test for HBsAg utilizes the principle of IMMUNOCHROMATOGRAPHY, a unique two site immunoassay on a membrane. As the test sample flows through the membrane assembly of the test device, the colored polyclonal anti-HBsAg-colloidal gold conjugate complexes with the HBsAg in the sample. This complex moves further on the membrane to the test region where it is immobilized by a monoclonal anti-HBsAg antiserum coated on the membrane leading to formation of a pink-purple colored band which confirms a positive test result. Absence of this colored band in the test region indicates a negative test result. The unreacted conjugate and unbound complex if anyone further on the membrane and are subsequently immobilized by

the anti-rabbit antiserum coated on the membrane at the control region, forming a pink-purple band. This control band serves to validate the test results.

HCV

Tri Dot test is manufactured and marketed by DIAGNOSTIC ENTERPRISES, (de@diagnosticenterprises.com).

The 4th generation HCV TRI-DOT is a rapid, visual, sensitive and qualitative in vitro diagnostic test for the detection of antibodies to Hepatitis C virus in human serum or plasma.

The 4th generation HCV TRI-DOT has been developed and designed with increased sensitivity for core and NS3 antibodies using a unique combination of modified HCV antigens. They are for the putative core (structural), protease/helicase NS3 (non-structural), NS4 (non-structural) and replicase NS5 (non-structural) regions of the virus in the form of two test dots "T₁" & "T₂" to provide a highly sensitive and specific diagnostic test. The test is named for the three dots that appear to give the result: one pink dot is a control dot, either pink dot on each "T₁" & "T₂" or both regions indicate that the specimen is reactive for antibodies to HCV.

RESULTS

Our study has aimed to determine the seroprevalence of HIV, HBV and HCV. In the present study, 2865 patients were tested for HIV, 2849 patients were tested for HBV and 2950 patients were tested for HCV, attending to Nepalgunj Medical College, KTH, and Nepal.

Among 2865 patients who were tested for HIV, 1781 (62.16%) were male and 1084 (37.84%) were female. The prevalence of HIV reactive was found to be 0.14% (4) where 0.16% (3) in male and 0.09% (1) in female. Out of 2849 were tested for HBV, 1743 (61.18%) were male and 1106 (38.82%) were female. The prevalence of HBV reactive was found to be 1.65% (47) where 1.2% (34) in male and 0.45% (13) in female.

Similarly, out of 2950 were tested for HCV, 1200 (40.67%) were male and 1750 (59.33%) were female. The prevalence of HCV reactive was found to be 0.03% (1) which was only in female.

HIV			HBV			HCV		
Male	Female	Total	Male	Female	Total	Male	Female	Total
1781	1084	2865	1743	1106	2849	1200	1750	2950
62.16%	37.84%		61.18%	38.82%		40.67%	59.33%	

Table I: Total number of subjects with respect to gender

Table II: Distribution HIV, HBV and HCV with respect to gender

	Gender	Reactive	Non-reactive	Total
HIV	Male	3	1778	1781
	Female	1	1083	1084
Total (%)		4 (0.14%)	2861 (99.86%)	2865
HBV	Male	34	1709	1743
	Female	13	1093	1106
Total (%)		47 (1.65%)	2802 (98.35%)	2849
HCV	Male	0	1200	1200
	Female	1	1749	1750
Total (%)		1 (0.03%)	2949 (99.97%)	2950

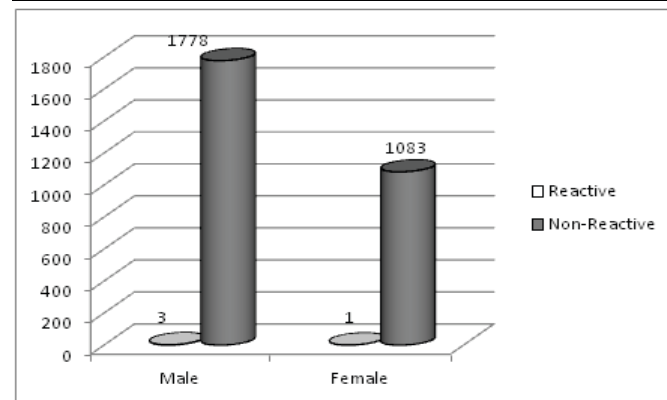


Figure 1: Showing graphic analysis of reactive and non-reactive with respect to gender in HIV

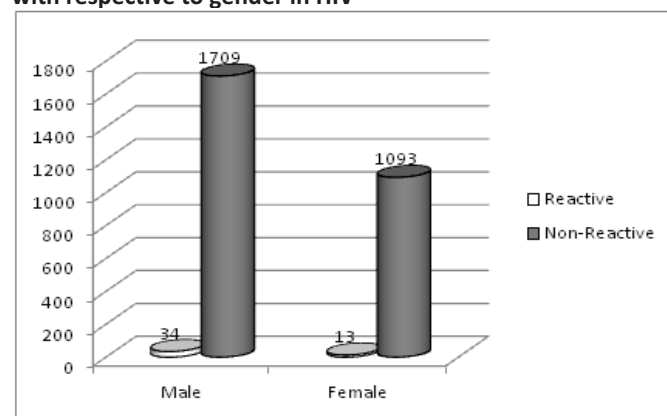


Figure 2: Showing graphic analysis of reactive and non-reactive with respect to gender in HBV

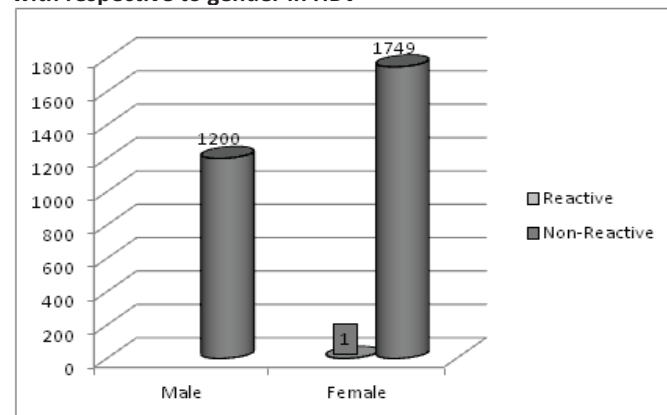


Figure 3: Showing graphic analysis of reactive and non-reactive with respect to gender in HCV

DISCUSSION

The study conducted in Western Region of Nepal the seroprevalence of HIV, HBV and HCV showed the prevalence of 0.5% in HIV, 1.1% in HBV and 0.3% in HCV⁷. In another study done in Eastern Region of Nepal, the prevalence of HIV, HBV and HCV and their co-infection during primary investigation and before ART showed 2.7% in HIV, 1.4% in HBV and 0.4% in HCV.

Karki S et al conducted a study, in which the seroprevalence of HIV was 0.19%⁹. Another study revealed that the seroprevalence of HIV was 0.33%¹⁰. The study of seroprevalence of HBV in two different places of Eastern part of Nepal showed that 0.52% and 0.64% respectively¹¹. Another study of seroprevalence of HBV was 4.19%¹².

A study done in Nepal showed the prevalence of HBV and HCV were 2.1% and 0.33% respectively¹³. Another study of the seroprevalence of HCV was 0.66%¹⁴. In Our study, the prevalence of HIV was 0.13%, HBV was 1.65% and HCV was 0.03% among 1865, 2849 and 2950 patients attending the hospital, which are not very different from the previous studies done in different parts of Nepal. The prevalence was higher in HBV followed by HIV and HCV. The prevalence in male was seen higher in HIV and HBV but the prevalence was higher in female seen in HCV.

CONCLUSION

The seroprevalence of HIV was 0.14% in 2864, HBV was 1.65% in 2849 and HCV was 0.03% in 2950. HBV was more prevalent followed by HIV and HCV in the Mid-Western part of Nepal who visited in Nepalgunj Medical College, Kohalpur Teaching Hospital. Higher prevalence was seen in males than in females in HIV and HBV. In HCV, reactive cases were seen only in one female not in male.

HIV/AIDS is the burning crisis worldwide. However, the approach for the management of the issue is dissimilar in different countries. In low prevalence countries like Nepal, the Government of Nepal could deliver the different prevention activities. The disease management and prevention is necessary. Since HIV, HBV and HCV infections have high mortality; population at risk should be screened to know the burden of infections nationwide to make the plans and policies for disease prevention.

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Self-medication Practice Among Undergraduate Medical Students in Nepalgunj Medical College, Chisapani

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ABSTRACT

Introduction: Self-medication forms an essential part of the self-care. Since medical students are being exposed to the knowledge of diseases and drugs, would assume a special significance to assess the self-medication practice among them.

Methods: This was a cross-sectional study conducted from March to April 2018 in 200 preclinical medical students of Nepalgunj Medical College (NGMC), Chisapani. A structured questionnaire was used for data collection and the students who took self-medication within last two months were included.

Result: Out of 200 students, 123 (61.5%) were found practicing self-medication. Majority of students (47.97%) were taking Non-steroidal Anti-inflammatory Drugs (NSAIDs) for fever (18.70%), headache (17.89%) and abdominal pain (13.01%). 21.14% of students were consuming paracetamol for these health ailments. 44.72% of students reported that they were practicing self-medication because of the mild nature of illness.

Conclusion: Students are widely practicing self-medication, particularly NSAIDs group of drugs. In this situation, awareness about the pros and cons of self-medication should be must in the medical students.

Key words: Self-medication, medical students, NSAIDs, NGMC

INTRODUCTION

Most illness are treated by self-medication, yet very little is known about the appropriateness of self-medication¹. It involves the use of medicine by the people who want to treat self-recognized symptoms by themselves². Thus, Self-medication forms an essential part of self-care which also includes; non-drug self-treatment, social support in illness and first aid in everyday life³. Moreover, it is widely practiced among undergraduate medical students. In this situation, we should educate the students about advantages and disadvantages of self-medication⁴. Responsible self-medication can help prevent and treat diseases and other minor ailments especially when resources are limited⁵ otherwise self-medication if not based on authentic medical information can lead to irrational use of drugs, wastage of resources, increased resistance of pathogens and can lead to serious health hazards such as adverse drug

reaction and prolonged morbidity⁶. Present study was to explore the different dimensions on self-medication being practiced among undergraduate medical students. This study broadens the awareness level regarding the rational use of drugs by medical students.

MATERIALS AND METHODS

This cross sectional study was carried out among the undergraduate preclinical medical students (Batch 2016/2017) of Nepalgunj Medical College, Chisapani from March to April 2018. A total number of 200 medical students were included, out of which 123 students were found to be practicing self-medication.

All the data were collected after obtaining an informed consent and all the data were kept confidential. A pre designed, structured questionnaire were used to collect the data on demographic information (age, sex, year/ batch of MBBS) and clinical information (drug/drug group being taken as self-medication, symptoms or indication for which it is being taken and reasons behind the self-medication). Data were analyzed and presented as counts and percentages using SPSS 25 and expressed in table and bar charts.

RESULTS

Out of 200 students, 123 (61.5%) were found practicing self-medication within last two month i.e. the month of March/

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April. Mean age of students was 20.05 ± 0.99 years. Table I shows the distribution of self-medication practice among male and female students. Among them, 71 (57.7%) were males and 52 (42.3%) were females. Graph I shows majority of students were practicing self-medication for fever (18.70%) followed by headache (17.89%), cough & common cold (16.26%), abdominal pain (13.01%), allergies (11.38%), diarrhea (8.94%), heartburn/peptic ulcer (8.94%) and for other ill-health conditions (4.88%). Graph II and graph III depicts that NSAIDs (47.97%); particularly paracetamol (21.14%), mefenamic acid (8.13%), ibuprofen (7.32%) and diclofenac (7.32%) were the most frequently used drug as self-medication. Results in graph IV showed that 44.72% of students were practicing self-medication assuming that the nature of illness was mild. It was followed by 24.39% of students practicing it to save time, 23.58% thought it would be cost effective and 7.32% took these drugs in urgency.

Table I: Distribution of self-medication practice

Gender	Self-medication	No self-medication	Total students number
Male	71	41	112
Female	52	36	88
Total	123	77	200

Figure 1: Diseases for which self-medication is practiced

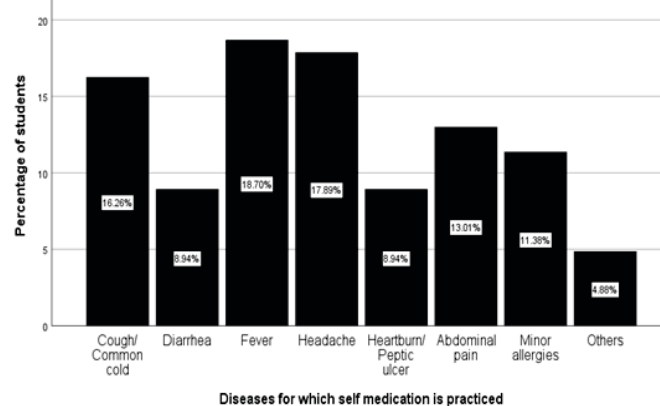


Figure 2: Drug group taken as self-medication

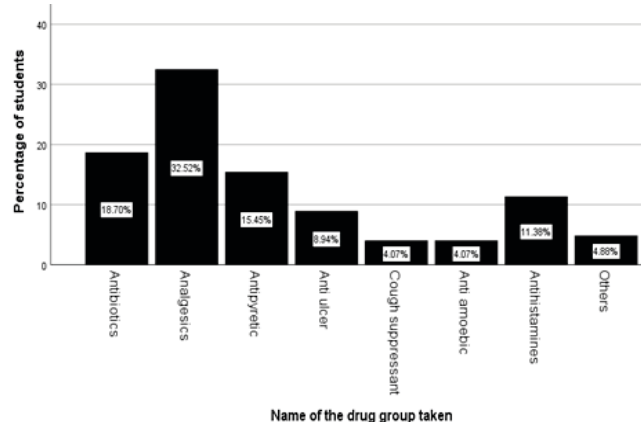


Figure 3: Drug taken as self-medication

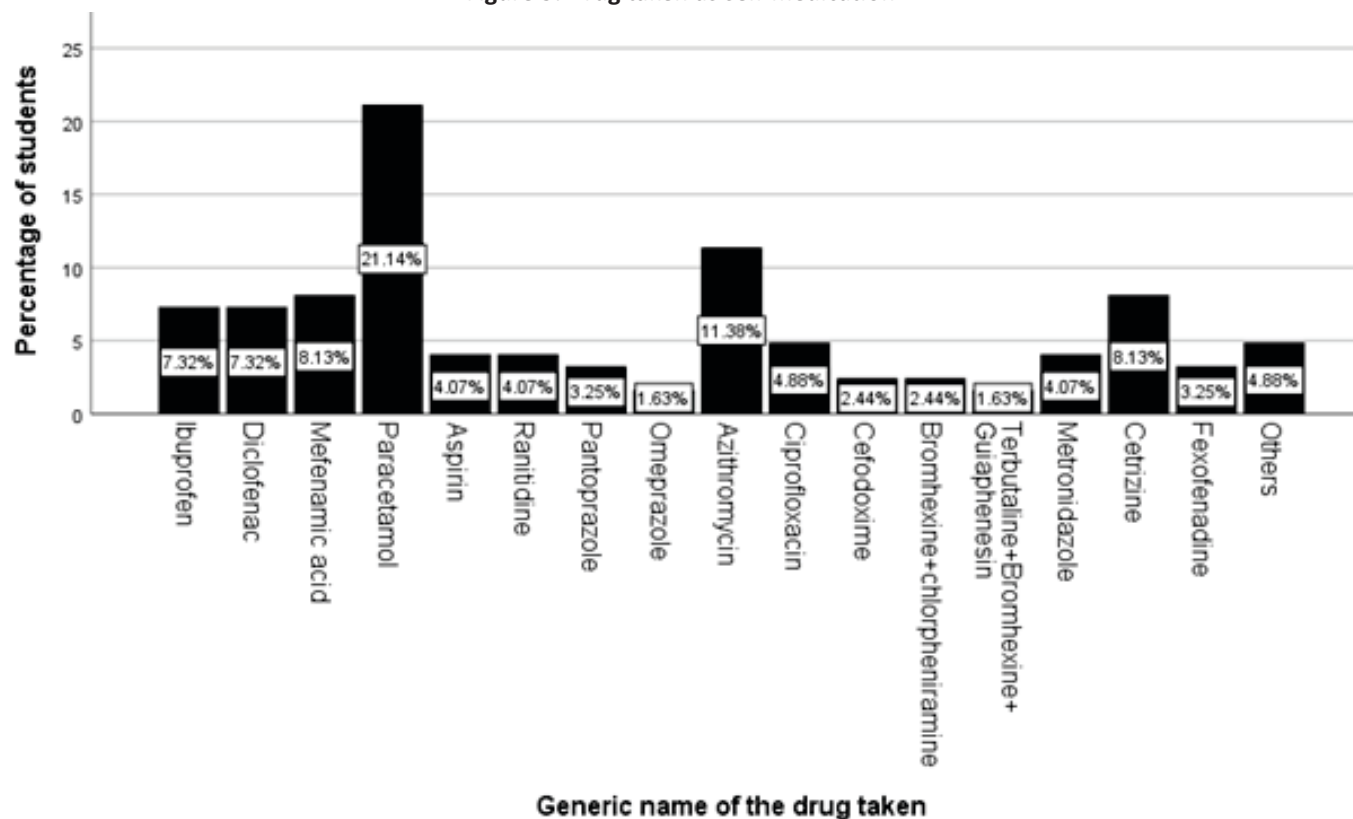
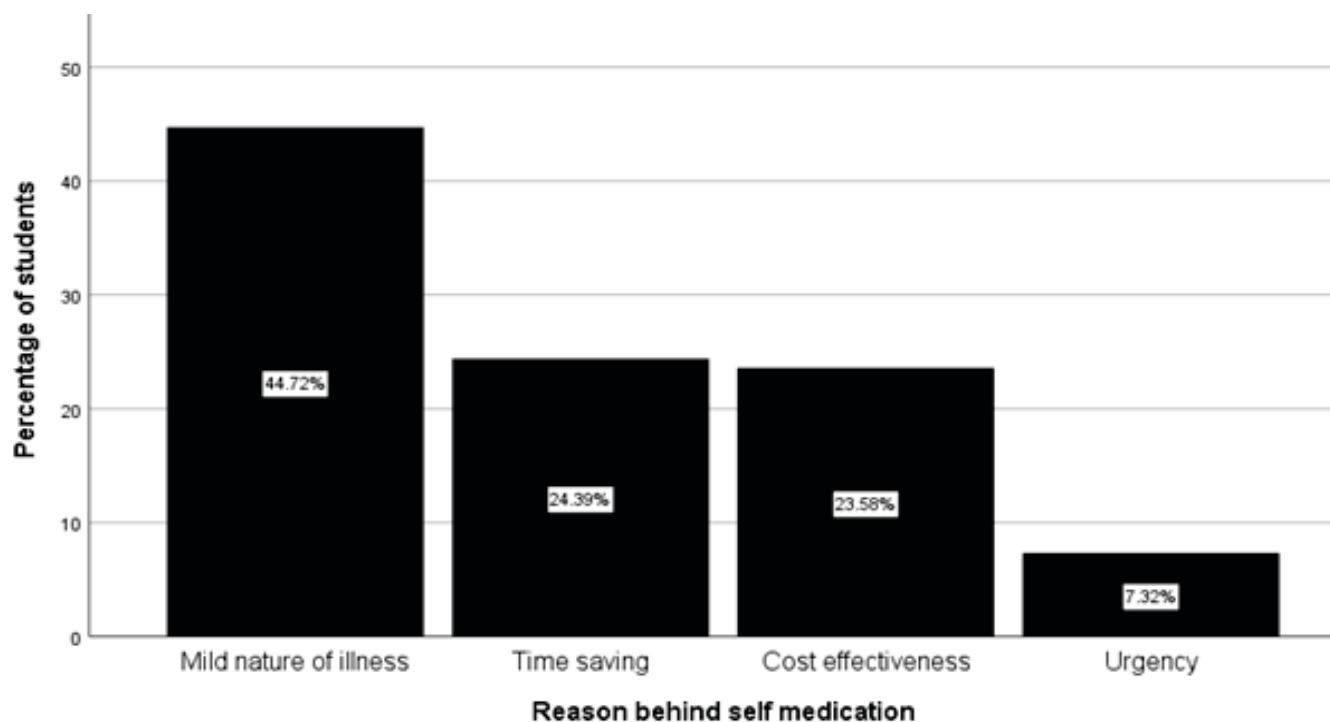


Figure 4: Reason behind self-medication



DISCUSSION

In this study, the prevalence of self-medication among undergraduate medical students was 61.5%. Patil et al⁴ conducted a study in Karnataka, India where the prevalence of self-medication among undergraduate medical students was 88.18%. Similarly, the prevalence was 57.05% in West Bengal⁶ and 78.6% in Mangalore⁷.

Present study confirms that most common indication for self-medication was fever (18.70%) followed by headache (17.89%), cough & common cold (16.26%), abdominal pain (13.01%), allergies (11.38%), diarrhea (8.94%), heartburn/peptic ulcer (8.94%) and for other conditions (4.88%). which is different from the study by Patil et al⁴ and Banerjee et al⁶ where they concluded that cough and cold were the most common indication for self-medication. However, a study conducted in Ethiopia⁸ reported most common illnesses were fever and headache (24.8%) followed by cough and common cold (23.9%).

Non-steroidal Anti-inflammatory drugs (NSAIDs) 47.97%; Paracetamol (21.14%) and other NSAIDs (26.83%) were most frequently used by students in our study which was concomitant to the study by Shankar P et al² in Pokhara valley; Paracetamol and other Non-Steroidal Anti Inflammatory Drugs (NSAIDs) were used by 43.1% and 23.1% respectively. A study conducted in Karachi⁹ and Bahrain¹⁰ also reported analgesics to

be the most commonly used drug group i.e. 88.3% and 81.3% respectively. 18.70% were on self-medication with antibiotics in our study while 31.09% were using antibiotics in a study done in West Bengal⁶ and 39.3% in Coastal South India⁷. Similarly, Kumar N et al⁷ studies concluded that antipyretics were the most common class of drugs which were self-medicated by the majority of the participants (74.8%), followed by Antitussives (68.2%) and Analgesics (65.8%). Present study also reveals that 44.72% of students practiced self-medication because they felt that the nature of illness is mild which is similar to a study of West Bengal (47.19%)⁶. Hallas J et al¹¹ in a study reported that the self-medication was largely characterized by poor medication, uncontrolled use, polypharmacy, treatment of epigastric pain with aspirin and the patient's unawareness of potential adverse reactions. In our present study, the chances of epigastric pain, even peptic ulcer with the use of NSAIDs and irrational use of antibiotics which might lead to drug resistance were totally overlooked by the students.

CONCLUSION

Self-medication is widely practiced among undergraduate medical students. A relatively responsible picture of self-medication among medical students has emerges. However, some of them have overlooked the short term and long term adverse effects of drug. So, knowledge of appropriate self-medication is a must for our medical students.

LIMITATIONS

Larger sample size targeting many medical colleges and general population can provide more valuable data reflecting the self-medication practice all over Nepal. Furthermore, self-medication of antibiotics can be a valuable study as the rational use of antibiotics is particularly important due to increasing drug resistance.

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Substance Abuse Among Medical Students – A Survey in a Medical College in Nepal

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ABSTRACT

Introduction

Substance use among medical students could impact on the conduct, safety and efficiency of future doctors. Despite serious medico legal, ethical and political ramifications, there is paucity of published article on the subject, especially from Nepal.

Objective : We aimed to explore the patterns of substance abuse among a sample of Medical students from Nepalgunj Medical College.

Materials and Methods : A cross-sectional survey of medical students from Nepalgunj Medical College was done using a brief questionnaire schedule to identify current and lifetime use of tobacco, alcohol, cannabis and abuse of other drugs. An operational definition of substance abuse was made, 28 % of students fell within that criterion.

Results : Male substance abusers 81% exceeded female abusers 19%. Substances most commonly abused were alcohol 60%, minor tranquilizers 48%, and tobacco 35%, and only 11% abused cannabis. While most students were multidrug users, there was a low frequency of daily drug use. A general lifetime (occasional use) prevalence of substance use of 56% was found. Drugs consumed on a daily basis were alcohol 2% and tobacco 6%. The prevalence of drug use was highest among the fourth and final year students.

Conclusion : The majority of students were occasional abusers; there was no evidence of physical dependence. This study provides a snapshot of the problem of substance use among medical students of Nepal. Further research is needed to study nationwide patterns of substance use among medical students, and to identify important determinants and reinforce preventive measures. Strategies need to be developed for supporting students with a substance use problem.

Key Words : Medical students, drug abuse, tobacco use, cannabis, substance abuse

INTRODUCTION

Medical students, as future doctors, hold a unique place in society and earn privileges and responsibilities different from those of other students. Different standards of professional behavior are hence expected from them¹. Substance use by medical students poses risks and can also have serious consequences on their effectiveness and fitness to practice as tomorrow's doctors². It is believed that substance use among physician starts early in their careers and the importance of studying the lifestyles of medical students to detect substance abuse is well recognized³. There is a paucity of systematic data from the Indian subcontinent related to substance use among medical students. Rates of substance use reported by different studies vary globally⁴⁻⁷. We aimed to revisit this issue using a

survey to explore the patterns of substance use among a sample of medical students and generate ideas for further research in this area. Man has long used substances that alter consciousness for the production of pleasure and euphoria, or for the reduction of pain, anxiety, and distress⁶.

Since, ancient time Nepalese culture has adopted drinking to a point of oblivion and ecstasy in ceremonies. The probable adverse effects of these psychoactive substances have caused international concern over many years and international legislations have been enacted at various times to control their circulation and use. Various studies have reported an increasing trend in the prevalence of substance abuse, particularly among the youth, and its seriousness as a public health hazard⁷⁻¹⁰. A greater cause for concern is the finding of a similarity between urban and rural trends in drug use¹¹. In a recent study, 22% of clinical medical students in Nepalgunj Medical College either did not disapprove or only disapproved slightly of the nonmedical use of listed psychoactive drugs. Abuse of drugs among physicians has been estimated to be about 30 to 100 times the rate in the general population. In spite of this, no study has been done in Nepal to assess the true position with regard to physicians, or to estimate the time in their career when they are likely to have acquired the habit.

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MATERIALS AND METHODS

Our study was a cross-sectional survey on medical students from Nepalgunj Medical College. Study started from 18 June 2016 and continues till 27 November 2016, overall taking around five months for completion of study. We designed a questionnaire to gather brief demographic data including age, sex, and year of study and pattern of substance use in a multiple-choice format. Substances included were tobacco (smoked and chewable), alcohol, cannabis, heroin, non-prescription benzodiazepines and non-prescription opioids. Respondents were asked to classify each substance used during the past few months, past 12 months, lifetime use or never used. The names of respondents or their medical schools were not noted to maintain anonymity and encourage participation. To keep the questionnaire short, the quantity of substance consumed was not included. Medical students from each year were briefed about the study in groups and given instructions on filling the questionnaire. Those who agreed to participate were then given questionnaires. The participants were asked to complete it on the spot; collection was carried out by a ballot box technique. As participation in the survey was voluntary, consent was implied if a participant returned a completed questionnaire. Only complete entries were included in the final dataset, which was analyzed using SPSS version-18.

Lifetime and past month prevalence rates of the use of substances by individuals were calculated as a percentage of total respondents who admitted ever using the substance or in the past month, respectively. Multivariable logistic regression analysis was performed to determine the factors associated with illicit substance (cannabis or heroin) used in the past 12 months. All matriculated undergraduate medical students of NGMC during academic session of 2016 AD formed the population of this study. There were all together 855 students in 5 classes. Each class of students filled out the questionnaires during a class hour, after explanations and assurances of confidentiality. Items on the questionnaire were a modified version of those used to study drug abuse among American high school students. The first part of the questionnaire sought basic demographic information, while the second part included questions regarding drug use during lifetime, frequency of use of each drug listed, reasons for use, and the subject's chances of future use. Substances included were alcohol, cannabis, stimulants, sedatives (including barbiturate and non-barbiturate hypnotics), minor tranquilizers, opium, synthetic narcotics, cocaine, hallucinogens, inhalants (volatile agents), and tobacco (including cigarettes and snuff). Data obtained were pooled and analyzed. For this study, drug abuse was

defined as "the taking a drug at a frequency of at least once a month without medical prescription".

RESULTS

Table I: Distribution Of Subjects According To sex

	Male No. %	Female No. %
Abuser (n= 389)	227 (53.4%)	162(59.3%)
Non Abuser (n= 309)	198(28%)	111(16%)

$$\chi^2=2.46; df= 1$$

*Age range, 18 to 28, mean age = 28 years, Sd= 2.26

This was followed by minor tranquilizers 48%, with tobacco in its various forms, but mostly as cigarettes, ranking third 35%. Sedatives and cannabis were abused by nearly an equal number of students. There was no report of abuse of opium, cocaine, hallucinogens, and volatile agents (inhalants) in this study. Only six male and two female reported using stimulants (Table III).

Table II: Prevalence of substance abused, all drugs

Frequency	Number	Percentage
Once in a life time	69	10
Once or twice in a year	125	18
Once or more in a month	195	28
Never abused	309	44

Out of the 855 matriculated students, completed responses were obtained from 698 (89.6%) of students.

Table III: Type of Drug Abused

Type of Drug	Male No. %	Female No. %	All Students No. %
Alcohol	179, 46%	54, 14%	233, 60%
Tobacco	117, 30%	19, 5%	136, 35%
Tranquilizer	117, 30%	69, 18%	186, (48%)
Sedatives	39, 10%	19, 5%	58, (15%)
Cannabis	46, 12%	12, 3%	58, (15%)
Others	--	--	--

Prevalence of Substance

Three hundred and eighty nine students had taken drugs at some time in their lives without a medical prescription (Table I). This gives a prevalence rate for the "occasional user" of 55% for all substances used. Two hundred five 28% Students were recognized as real abusers as they used drugs once or more each month.

Sex Distribution

As shown in Table II, more men 32% than women 23% were

involved in drug abuse; however, sex difference between abusers and non-abusers did not attain statistical significance.

Prevalence by type of Drug Abused

The substance most commonly abused by this sample was alcohol, which was consumed by 60% of students. This was followed by minor tranquilizers 48%, with tobacco in its various forms, but mostly as cigarettes, ranking third 35%. Sedatives and cannabis were abused by nearly an equal number of students. There was no report of abuse of opium, cocaine, hallucinogens, and volatile agents (inhalants) in this study. (Table III).

Frequency of Use of Drugs Most Commonly Abused

There was a paucity of daily use of most of the drugs abused. 68% of abusers of alcohol got involved in drinking it once a month. 23% used it two to three times each month, while 7% drank alcohol once or twice a week. Out of 98 students who abused minor tranquilizers, the majority 80% took them two to three times a month, while about 5% took once or twice a week. Only one female student reported of having cannabis. Frequency of use of the other drugs listed is shown in Table IV.

Table IV: Frequency of use of Drugs most commonly abused

Drug Abused	No. of Students	Once a month	Two or three times a month	Once or twice a week	Almost Daily
Alcohol	233	158, 68%	53, 23%	16, 7%	4, 2%
Tobacco	136	77, 57%	34, 25%	17, 13%	8, 6%
Tranquilizer	186	148, 80%	28, 15%	9, 5%	
Sedatives	58	44, 77%	8, 15%	5, 8%	
Cannabis	58	43, 74%	15, 26%		
Others	-	-			

Prevalence of Single and Polydrug Use by Year of Study

Approximately 28% of all the students were single-drug users while the remaining 82% were polydrug users. Single-drug abuse was highest among first and second year and followed by fourth year students and least among third and final year students. On the other hand, polydrug abuse was highest among the third and final year students. The observed prevalence of drug abuse in third years was very high and followed by final year of study (Table V).

Table V: Prevalence of Single and Polydrug Use by Each Year

Year of Study	Single Drug user	Poly Drug user	Total Drug user
1st Year	32%	64%	18%
2 nd Year	28%	72%	19%
3 rd Year	18%	87%	50%
4th Year	27%	75%	37%
Final Year	10%	91%	41%
All Students	28%	82%	32%

*Percentage of Total Class Population

DISCUSSION

Widespread ignorance of the probable ill effects of certain drugs and legal prohibitions against the illegal use of such drugs constitute an obstacle to any epidemiological study of drug abuse in Nepal. The consequent reluctance on the part of abusers to cooperate in such studies for fear of prosecution or stigmatization appears understandable, though misguided. Nevertheless, it is necessary to have an idea about the nature and size of the problem if meaningful and effective preventive measures are contemplated¹². The lifetime prevalence of substance abuse in this study was 55 percent, with a higher frequency among men than women. The figure in our study was found to be higher than the study conducted in Glasgow University for undergraduate medical students that are 13 and 16 percent were found respectively. Similarly, in another study conducted by Sethi and Manchanda in India, 12 comparable to 49 percent were obtained. Also, 14 considerably lower than 72 percent for another medical school in India¹³.

Differences in methodology, sociocultural characteristics of the various samples studied, and the different numbers of drugs included contributed to the observed differences⁶. An interesting finding is the absence of reported cases of abuse of opium, cocaine, and hallucinogenic and volatile substances. This tendency to avoid the "harder" drugs is probably because of stringent enforcement of legal sanctions, thus making it more difficult for the would-be abuser, particularly within the confines of a university campus, to get at such drugs. The most commonly abused substances were alcohol, minor tranquilizers, tobacco, and sedatives in that order. The rate of abuse of all forms of alcohol is 60 percent and reflects the easy availability of that commodity in this country, where there are no serious restrictive laws against its use (except for underage persons). With the present increase in the number of breweries producing alcoholic beverages, this figure could be higher in the future—a situation that calls for urgent public education and effective preventive as well as remedial measures¹⁴. The prevalence of true drug abuse (according to the operational definition of this study) was 28 percent.

Among the respondent 82 percent of the students were polydrug users. This gives cause for concern, as adverse consequences may arise from one drug potentiating the effect of another. About 50 percent of those abusing alcohol also smoked cigarettes. The higher prevalence rate of polydrug use in the three most senior classes reflects the amount of stress impinging on the student as a result of increasing academic

work and the pressure of clinical postings, which often exclude the student from the usual social interactions with the outside world. It becomes important, therefore, that the student should be made aware of the dangers ahead and be helped to curb the habit before he or she becomes a qualified medical doctor and drugs become more readily available¹³. The majority of students in this study were occasional abusers. The study involved only students who were present at lectures on the daytime when questionnaires were distributed. Considering the anonymity, absentees could not be contacted thereafter. More intensive work needs to be done to assess the real extent to which this substance is abused in society. Cognizant of the importance of drugs in the health care system of any community and the fact that the types of substance used tend to change with time¹⁵⁻¹⁷.

The present study was intended to give an insight into the prevalence and pattern of substance abuse among medical undergraduates at one institution. Although the majority is occasional users, the overall picture is disturbing enough, particularly as it shows an upward trend in prevalence among the senior classes. However, a cause for cheer is the fact that only 8(4%) students gave a hint of their desire to continue taking drugs, and those were in relation to alcohol, tranquilizers, so the picture is not entirely one of unmitigated gloom. The latter years of medical education are perhaps an auspicious moment to introduce any remedial measures necessary to control or modify the students' substance abusing behavior before they graduate as doctors with more money for alcohol and greater access to drugs. The inclusion of alcohol and tobacco has no doubt increased the prevalence of the occasional user category. The socio-medical consequences of abuse of these substances and the fact that alcohol and tobacco are very important agents of social interaction make their inclusion in such a study necessary. While the results of this study appear informative, there is a greater and urgent need to intensify research on the epidemiology of drug abuse in various communities in Nepal, particularly at this time of fluctuating socioeconomic fortunes.

CONCLUSION

Medical students, as tomorrow's doctors, hold a unique place in society and earn privileges and responsibilities different from those of other students. We aimed to explore the patterns of substance use among a sample of medical students from Nepalgunj Medical College. The prevalence of drug use was highest among the fourth and final year students. The majority of students were occasional abusers; there was no evidence of physical dependence. This study provides a snapshot of the

problem of substance use among medical students of Nepal. Further research is needed to study nationwide patterns of substance use among medical students, and to identify important determinants and reinforce protective factors. Strategies need to be developed for supporting students with a substance use problem.

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Degloving Injury: Different Ways of Management

Nakarmi KK¹, Shrestha SP²

ABSTRACT

Degloving injury involves shearing of the skin from the underlying tissue due to differential gliding in response to the tangential force applied to the surface of the body leading to disruption of all the blood vessels connected to skin. The flap of degloved skin has precarious blood supply making it almost impossible for the flap to survive. We describe two cases of degloving of thigh managed differently in different settings.

Keywords: *degloving; excision; split skin graft*

INTRODUCTION

Degloving injuries occur when there is sufficient tangential force to a body surface to disrupt the structures connecting skin and subcutaneous tissues to the superficial fascia. There may also be associated injuries to the underlying soft tissues, bone, nerves and vessels. It involves the young males, and most are related to road traffic accident constituting upto 4% of all the trauma related admissions. Treatment guidelines are not clear¹. The injury may be so severe that the limb is non-viable and requires amputation. It has been classified into three group based on whether only skin, underlying soft tissue or bone is involved in the injury process². Different modalities of treatment are described. It includes excision and secondary skin grafting with split or full thickness skin grafts. Immediate split skin grafting by graft derived from the degloved skin flap or other parts of the body is also done if patient is in stable condition. Other methods include treatment with cryopreserved split-thickness skin grafts harvested from degloved flap, artificial dermal replacement and vacuum-assisted closure³. Dermal regeneration template (Integra) has been used in association with a sensate neurovascular fasciocutaneous pedicled flap salvaged from the non-viable lower leg to reconstruct the defect⁴. Aggressive debridement aided by fluorescein vital dye staining followed by primary or delayed wound closure guided by local and systemic conditions is advocated by some⁵. Early plastic surgery evaluation and

management of these patients have been associated with lesser number of surgeries and shorter hospital stay⁶. Clinical evaluation aided by use of fluorescein dye to assess the flap viability will guide whether skin can be harvested from the flap which can be stored for later use if general condition does not allow immediate grafting⁷. Use of the degloved flap after defatting along with negative pressure wound therapy has also been described⁸.

Cases

Case 1

Eighteen year old girl was run over by a car. She had degloving of whole circumference of the upper half of right thigh. She was initially managed in a private hospital outside Kathmandu. The wound was irrigated and flap was sutured in place before sending the patient to Kirtipur Hospital. When she came to us, the skin flap was already black and necrosed (Figure 1). It was excised completely. Wound was dressed daily for few days. Split skin graft was applied to cover the wound afterwards. She got discharged from the hospital in three weeks time after full recovery.



Figure 1: Necrosed skin several days after degloving

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Case 2

Twenty nine year old man fell off the scooter he was riding. He landed on his right thigh and ripped off most of the thigh skin (Figure 2). He presented to Madhyapur Hospital immediately after the accident. He did not have any other injury except diastasis of the symphysis pubis. He was taken to operation theater within few hours. His wound was thoroughly washed. Split skin graft was harvested from the degloved skin before excising it and applied to the defect in the same setting. Pubic diastasis was fixed after two weeks. He fully recovered and went home in one month's time (Figure 3).

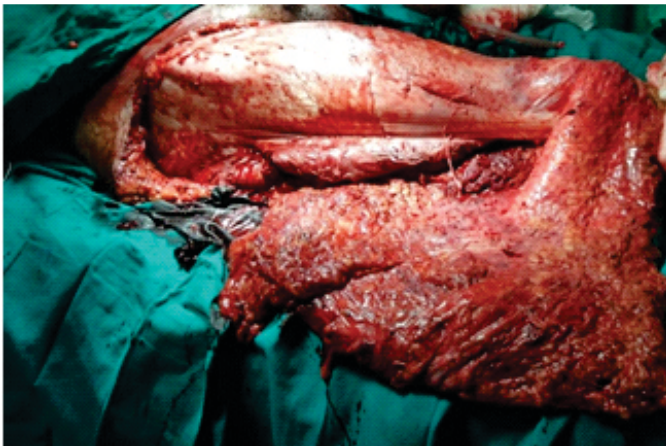


Figure 2: Degloved flap turned inside out



Figure 3: Grafted area after two weeks

DISCUSSION

There is no clear guideline for the treatment of degloving injury¹. Management depends on the local as well as general conditions of the patient. Immediate reconstruction can be considered if the patient is in stable condition. Otherwise skin graft can be harvested from the flap and stored for later use when the patient becomes stable⁷. The first case in our series needed skin harvesting from the other thigh because the flap had already necrosed. However, it was possible to use the skin graft from the flap in the second case because of the early presentation which obviated the need of harvesting graft from other part of the body. However, associated bony injury led to the delay in recovery.

CONCLUSION

Degloving injury can present at different times. Management should be tailored depending on the extent and type of injury, time of presentation and associated injuries.

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