

CLINICAL GOVERNANCE – AN AWARENESS

Dr. Stephen Bolsin (1995), an anesthetist exposed an unacceptable high mortality in pediatric cardiac surgery at Bristol Royal Infirmary. An instant need was felt by the National Health Services (NHS) of the UK to develop a process which would standardize and continuously seek improvement in the quality of health care and fix the responsibility and accountability for such standards. This process was named clinical governance akin to corporate governance.

Clinical governance is defined as the “system through which NHS organizations are accountable for continuously monitoring and improving the quality of their care and services and safeguard high standards of care and services” *NHS quality improvement Scotland 2005*.

In 1999 the U.K. NHS trust boards assumed statutory responsibility for quality care. Hitherto the NHS only insured financial management and acceptable level of patient safety. The idea of clinical governance has found supporters in Hong Kong and Malta as well.

The clinical governance is composed of at least six elements. **Education and training** – of health personnel through conferences and CMEs. The official organs are continuous professional development of doctors (CPD). PG education allowance for GP (PGEAGP) post registration education practice for nurses (PREP). Whatever is learnt in training during acquiring qualification gradually becomes out of date. Hence, a need for continuous training. The fund of such trainings is provided by MADEL and NMET funding streams. **Clinical Audit** – It is the review and measurement of clinical performance against agreed standards. Its components are structure (quality of the organization and health providers), process (actual treatment) and the outcome (result of the treatment). The idea of the audit is to improve the quality of the patients care. **Clinical effectiveness** – It measures the effectiveness of a particular treatment or intervention. The safety of such interventions and its value for money should minutely be assessed. **Risk management** – Health care is a risky business. There are risks to the doctors, to the patients and to the provider organization. All these risks have to be minimized as a part of the quality assurance program. The risk to the patients can be minimized by adhering to the statutory regulations, critical event audits and learning from the complaints. The risk to the doctors and the paramedical staff can be ensured through immunizing against infectious disease and by understanding the safety procedures. **Information management** – Patient's records and use of wide range of information obtained within the health care system will help determine the system's effectiveness in dealing with the health problems, defining priorities and allocating resources to improve health outcomes. **Openness** - Transparency in the services is an essential part of the quality assurance. Substandard and poor performances often thrive behind closed doors. The system should be open to public scrutiny, of course respecting the confidentiality clause.

EDITOR

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In view of the general dissatisfaction expressed (sometimes violently) by patients causing problems to the hospital, the editor feels that consolidated clinical governance could be a panacea for such troubles. Hence, to emphasize the editorial is repeated (2012;10(2)).

Role of Computed Tomography Scan in Non-Localized Headache in Tertiary Hospital of Mid Western Region of Nepal

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ABSTRACT

Objective: To investigate the implication of a computed tomography scan for headache with non-localizing sign. **Materials and methods:** One hundred and thirty six patients with headache having non-localizing signs were included in this prospective study. Patients with age > 11 years, incomplete radiological or clinical data, recent/new onset headache, any immunosuppressive state, neurological deficits at the time of presentation, history of fever, trauma, any previous surgical intervention and any malignancy were excluded from the study. **Results:** Among the 136 patients, 73% were females and 27% were males with age range of 11- 76 years. Negative computed tomography scan was present in 91 (66.9 %) cases. Positive findings that significantly influenced the management were present in only 6 (4.4%) cases. **Conclusion:** Computed tomography in headache with non-localizing signs has a poor yield for a significant intracranial pathology. A careful and detailed assessment curtails the need for inadvertent imaging thus reducing the economic burden and health related hazards.

Key words: Computed tomography, headache, radiation, non-localizing, imaging

INTRODUCTION

Headache is a common clinical presentation in patients presenting in the emergency department causing significant morbidity¹. Imaging has been widely performed for evaluation of headache and various studies have demonstrated a very low-yield of significant pathologies. A detailed history and physical examination can avoid unnecessary imaging in patients presenting with no ominous symptoms and non-localizing neurological signs². Inadvertent radiological imaging causes significant economic burden as well as exposure to radiations³. In this study, we attempted to correlate the implication of computed tomography scan in patients with headache without localizing signs in resource-strained settings.

MATERIAL AND METHODS

This is a prospective longitudinal study conducted in the department of radiology and imaging at Nepalgunj Medical College and Teaching Hospital, Kohalpur, Banke, Nepal for all computed tomography scans performed for non localized headaches during period between December 2011 to October 2012. The inclusion criteria for the study included i) No neurological deficits at the time of presentation ii) no history of fever, trauma, any previous surgical intervention iii) no history

of any malignancy. The exclusion criteria included (i) age of patient > 11 years (ii) incomplete radiological or clinical data (iii) recent/new onset headache (iv) any immunosuppressive state.

Amongst 164 patients, only 136 patients were included in the study that fulfilled both the inclusion and exclusion criteria. A standard head CT protocol (120 k V, 380 mAs) with sequential scans of 5 mm from the level below the foramen magnum through the vertex of the skull was performed. CT scans were reviewed by two radiologists in consortium and a final opinion was made. The results were divided into three groups adopted as in the study by Jordan et al into (1) no intracranial abnormality (negative study); (2) clinically significant intracranial abnormality, such as space-occupying lesions or intracranial hemorrhage and (3) positive without clinical significance or with extracranial abnormality. The patients were followed up for a period of 6 months from the date of study. Statistical analyses were performed using SPSS 16.0.

RESULTS

The age of the patients ranged from 11 years to 78 years with mean age of presentation for male (44.24 yrs of age) being higher than for female (42.12 years) though not statistically significant. There were 98 females and 38 males with female to male ratio were 2.67: 1. There were negative CT findings in 91 scans accounting to 66.9 % of the total study and thus classified as Group 1. Among the positive findings on CT, Group 2 which included clinically significant findings that influenced management intensively was only 6(4.4 %) cases with a female preponderance in the age group of 31-40 years. There were 2 brain tumors (1 low grade glioma, 1 cerebral metastasis), 1 subdural hemorrhage, 1 sub-arachnoid hemorrhage with hydrocephalus and 2 arterio-venous malformations. There were 39(28.7 %) cases which had positive findings that did not

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influence the management. These included cerebral atrophy (12 cases), acute and chronic rhinosinusitis (10 cases), chronic infarct/encephalomalacia (8 cases), calcified granulomas (9 cases).

DISCUSSION

Headache is one of the commonest symptoms for patient presentation in the emergency department worldwide¹. Although, majority of the causes of headache are benign in etiology, there has been an exponentially increased number of routine neuroimaging studies in recent times^{2,4}. The age of presentation in our study was at advanced age of male compared to female counterparts. This however seems to be due to increased number of female cases in our study which is similar to previous studies.

Our present study demonstrates a very low yield of positive cases in radiological studies performed for headaches with non-localizing signs. The positive CT scan studies that significantly influenced the management of the patient in our study that required immediate surgical intervention was low; only 6(4.4%) cases amongst 136 cases which is complying to a previous study done by Al-Nabhani, K., et al⁵.

The positive cases that did not influence the management and were unrelated to the headache primarily included cerebral atrophy, sinusitis, chronic infarcts/ encephalomalacia, calcified granulomas, intracranial lipomas which are in keeping with previous studies demonstrating similar findings⁶. There are many limitations to our study. Firstly, our study was in a limited number of cases. Besides, we have not stratified the cases depending on the referring specialty.

Studies have shown that detailed clinical history and physical examination significantly increased the yield in radiological

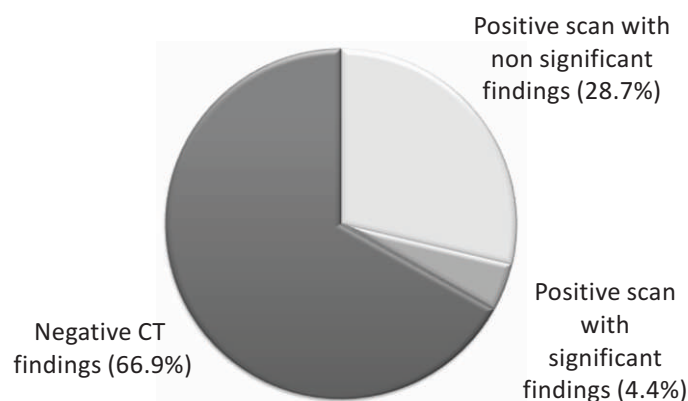


Figure 1: CT findings in headache

studies with highest among specialist neurologist⁶. The consequences of “overuse” neuroimaging has a substantial cost causing economic burden to health seeking individuals especially in resource constrained setting in developing countries⁷. Various guidelines have been recommended against routine imaging in patients with headaches. There are multiple factors that however influence the implementation of these guidelines.

Patient's apprehension and anxiety, medico-legal reasons and physicians over concern of missing an intracranial pathology are some of the element for this inadvertent neuroimaging utilization⁸. Certain studies have shown that educating patients regarding unwarranted testing and the potential radiation hazards of the so- low yield test can be useful to curb utilization and optimize neuroimaging practices.

Age Group (in years)	Group 1		Group 2		Group 3	
	Male	Female	Male	Female	Male	Female
11-20	2	3	0	0	1	2
21-30	3	15	0	1	2	4
31- 40	6	17	1	1	2	6
41-50	4	11	0	2	2	7
51- 60	4	7	0	1	2	3
61- 70	3	8	0	0	2	2
71- 80	2	6	0	0	2	2
TOTAL	24	67	1	5	13	26

Table 1. Categorization of patients based on CT scan findings.

Note: Group (1) No intracranial abnormality (negative study) **Group (2)** Clinically significant intracranial abnormality, such as space-occupying lesions or intracranial hemorrhage and **Group (3)** Positive without clinically significant intracranial pathology or with extracranial abnormality.

Group II (6 cases)	Brain tumors (one low-grade glioma and one metastases) [2 cases] AV malformations [2 cases] Subdural hemorrhage [1 case] Subarachnoid hemorrhage [1 case]
Group III (39 cases)	Cerebral atrophy [12 cases] Acute and chronic rhinosinusitis [10 cases] Chronic infarct/encephalomalacia [8 cases] Calcified granulomas [9 cases]

Table II: CT findings in positive cases**CONCLUSION**

Cranial CT examination in patients for headache with non-localizing signs has a very low yield for a significant intracranial pathology. A guideline should be devised based on the local resources in a developing country which would lead to high yield of positive cases without substantially increasing health care expenditure.

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Indoor Air Pollution as a Risk Factor of Acute Lower Respiratory Tract Infection in Children

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ABSTRACT

Introduction: This study was conducted to find out if indoor air pollution has any risk in occurrence of acute lower respiratory tract infection (ALRI) in children. **Materials and methods:** It was a case control study conducted on total 214 children 107 cases and 107 controls fulfilling the inclusion criteria with age and sex matched. Detailed history and physical examination was done after taking informed consent. History of upper respiratory tract infection in the family members and siblings, history of smoking by various family members, details of cooking fuel and indoor pollution was also recorded. **Results:** Those families using wood as a cooking material were associated with higher risk of ALRI ($p=0.0001$). Exposure to domestic animal was significantly positively associated ($p=0.0001$) and seven times higher risk to develop ALRI as compared to control group. Those children of case group who did not have separate kitchen were having nine times higher risk of ALRI ($p=0.001$). Family history of smoking was associated with six times increased risk of ALRI ($p=0.001$). With the use of kerosene lamps risk of ALRI was increased by 1.44 times ($p=0.012$). **Conclusions:** The significant environmental risk factors for ALRI were wood as cooking material, presence of domestic animal, place for cooking, family history of smoking, absence of windows and kerosene lamp as a source of light.

Key words: Acute lower respiratory tract infection (ALRI), indoor air pollution.

INTRODUCTION

World Health Organization (WHO) has defined acute respiratory tract infections on the basis of history of cough, difficulty in breathing and respiratory rate with different age groups¹. Indoor air pollution is an important cause of potential health risk to exposed populations, especially in developing countries. An important source of indoor air pollution in these countries is combustion of solid fuels, including biomass and exposure to environmental tobacco smoke (ETS). About 50% of the world's population relies on biomass fuel as the primary source of domestic energy, out of which developing countries contribute to 99% of the world's biomass fuel use^{2,3}. It is documented by WHO, exposure in indoor air pollution more than doubles the risk of this disease and is responsible for more than 900000 of the 2 million annual deaths from pneumonia and other ALRI⁴. Indoor air pollution is prioritized by number of articles published till date; the air pollution from household use of solid fuels, passive smoking, poor ventilation of room and source of light as kerosene lamp for lighting had been identified

as the strong modifiable risk factors for acute lower respiratory tract infections^{5, 6,7,8,9}. An epidemiological study done in Nepal during 1980s showed a direct relation between reported hours per day spent near the stove by infants and children under 2 years and the episodes of life threatening acute lower respiratory tract infections¹⁰. After identifying the potential environmental risk factors and taking preventive measures the occurrence of ALRI may be decreased thus reducing mortality and morbidity among under five children.

MATERIALS AND METHODS

A case control study was conducted at Nepalgunj Medical College Teaching Hospital, Kohalpur, Nepal during the period from June 2014 to November 2014 to identify indoor air pollution as a risk factor of acute lower respiratory tract infections among the children below five years. All diagnosed case of ALRI as per WHO were selected for case group, the duration of illness being less than 30 days. In the control group healthy children who were accompanied with their mother in OPD, in pediatric ward and immunization clinic without respiratory symptoms and no history of ALRI in past 2 weeks were included with age and sex matched. The convenience non probability sampling technique was undertaken and the minimum required sample size was 107 in both case and control group. Informed consent was taken from the mother of both groups and willingness was kept on consideration. All socio demographic data were collected with face to face interview from mothers by researcher himself. History of smoking by various family members and detail of cooking fuel, material use of cooking, exposure to domestic animal, indoor pollution was recorded. All data were entered in SPSS version

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19 and descriptive and analytic statistics was used for analysis of data with level of significance at p value <0.05 .

RESULTS

A total of 107 cases and 107 controls were taken where mean age of the case group was 11.34 ± 10.168 (M $\pm$ SD) months and control group was 11.57 ± 10.270 (M $\pm$ SD) months. Among them 70.1% (75) were below 12 month of age in case group whereas 68.3% (72) in control group. Male to female ratio was 1.6 to 1 and 1.8 to 1 in case and control group respectively. 42.1% (45) mothers were illiterate in case group whereas 6.5% (7) in control group which is statistically significant ($p=0.001$). 40.2% (43) fathers of case group were unskilled worker and 15% (16) in control group which was also statistically significant ($p=0.03$). Majority of families (84.1%) were residing in rural areas in case group and 66.1% in control group ($p=0.001$). 28% mothers of case group were teenager while they were only 13.1% in control group. Children of teenage mothers were 1.5 times higher chance of getting ALRI than controls ($p=0.005$).

Environmental variables

Figure 1 shows relationship of material used for cooking with ALRI cases and controls where 58.8% (63) families cooked their food by using wood in case group and 24.2% (26) in control group. It was shown that those families using wood as a cooking material were associated with higher risk of ALRI ($p=0.0001$).

Table I shows 60.7% (65) children were exposed to domestic animal in case group while only 16.8% (18) of control group and seven times higher risk to develop ALRI as compared to control group ($p=0.0001$). 15.9% (17) cooked their food in the bed room as compared to 1.9% (2) of control group and they had nine times higher risk of ALRI ($p=0.001$). Similarly 26.2% (28) of ALRI cases of case group lack window in their houses as compared to 12.2% (13) in control group but adequate number

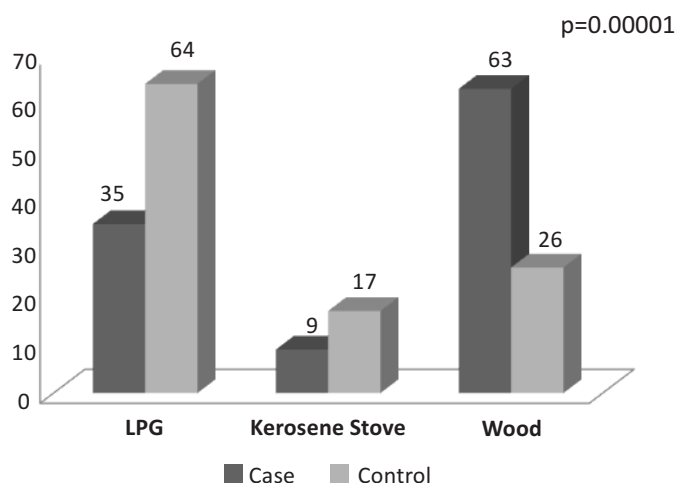


Figure 1: Association of Material used for cooking with ALRI

of families from case and control group had window in their houses (73.8% vs 87.8% in cases & controls respectively). This was statistically significant ($p=0.009$). 24.3% (26) of families from case group used kerosene lamps as the lighting source while only 12.1% of controls and they had 1.44 times higher chance of getting ALRI as compare to controls ($p=0.012$). Positive family history of smoking was observed in 64.5% (69) of case group and 23.4% (25) in control group and six times increased risk of ALRI in children with positive history ($p=0.001$). 70.09% (75) of cases had either mud or cow dung flooring in their houses as compared to 63.5% (68) of controls, which was not statistically significant ($p=0.437$).

DISCUSSION

The study was aimed to find out indoor air pollution as a risk factor of acute lower respiratory tract infections (ALRI) among under five year children. A total number of 107 cases and 107 controls (age and sex matched) were selected in our study

Variables	ALRI		Total (%)	Odd Ratio (95% CI)	p value
Domestic Animal	Cases (%)	Control (%)			
Yes	65 (60.7)	18 (16.8)	83 (38.7)	7.566 (3.996-14.327)	0.0001
No	42 (39.3)	88 (83.2)	130 (61.3)		
Place for cooking					
Separate	90 (84.1)	105 (98.1)	195 (91.1)	9.917 (2.231-44.088)	0.001
In the bed room	17 (15.9)	2 (1.9)	19 (8.9)		
Windows					
Present	79 (73.8)	94 (87.8)	173 (61.7)	0.390 (0.18 – 0.80)	0.009
Absent	28 (26.2)	13 (12.2)	41(38.3)		
Lighting					
Kerosine lamps	26 (24.3)	13 (12.1)	39 (36.4)	1.44 (1.09 - 1.89)	0.012
Electricity	94 (87.9)	81 (73.7)	175 (63.6)		

Table I: Association of environmental variables with ALRI

population, where majority of children from cases and controls were infants 70.1% and 68.3% respectively. This finding goes in accordance to other studies reporting 62.5% vs 74.04%¹¹, 62.2% vs 66.9%¹² and 70.7% vs 67%¹³ in cases and controls respectively. It is explained by the fact that various anatomical and physiological risk factors in infants such as they are obligate nose breathers, tongue relatively large, airway narrow, increase metabolic demand and less elasticity of alveoli; associated with incomplete establishment of immunity¹⁴. Male preponderance was found in both case and control groups (61.7% vs 64.5%) with male to female ratio 1.6:1, 1.8:1. Similar results were found in different studies conducted in different countries^{6,10 & 11}. The possibility of gender bias in seeking medical care may be the cause it.

In our present study 58.8% of ALRI cases and 24.2% of control group used biomass fuel like wood for cooking. Firewood users were significantly associated with occurrence of ALRI in case group ($p=0.003$). Similar finding was also observed from the studies conducted in various countries; India^{5,6}, Middle East Country⁷ and Kenya¹². Wood is burnt with very incomplete combustion generating a lot of toxic products that adversely affect specific and nonspecific local defences of the respiratory tract^{6,14}.

Majority of under five children, being young spend most of their time with their mothers who is doing household cooking, thus getting more exposed to biomass fuel pollution. Added on this, in about 15.9% cases and 1.9% of controls, cooking was done in the bed room. These children had ten times higher risk of ALRI when cooking was done in the living room ($p=0.001$). Similar was the finding of study conducted in India which showed 14.2% vs 0%⁴ ($p=0.0001$) but higher percentage (69.8%) observed in study of Kenya¹⁴. This can be explained by the fact that when cooking was done in bed room, it led bulk of emissions of toxic products into the living place thereby leading to persistent adverse affect for longer duration and ultimately increasing the risk of ALRI in under five children.

Another significant risk factor in our study was lighting source used in houses where 24.3% of cases and 12.1% of controls were using kerosene lamps as lightening source and it was significantly associated with ALRI ($p=0.012$). These are potential source of emission of harmful particulate matter (<2.5mm in size) like polycyclic aromatic hydrocarbons, aliphatic hydrocarbon, nitrated hydrocarbon etc which as they are small, are inhaled deep into lung, leading to greater severity of illness¹⁵.

Added on this, 26.2% of case group and 12.2% of control group houses were not well ventilated (windows not present) and they were significantly associated with occurrence of ALRI in the children of these families ($p=0.009$). Similar was the observation in the study conducted in India with significant

association (32.4% vs 4.8%) ($p<0.001$)⁵. Numbers of windows are directly proportional to ventilation of room and it ultimately determines indoor air pollution. If the room is not having enough windows, less fresh air circulates and it becomes damp and moist which favors growth of organism, mainly responsible for ALRI.

CONCLUSIONS

The significant environmental risk factors for ALRI in children were wood as cooking material, presence of domestic animal, place for cooking, family history of smoking, absence of windows and kerosene lamp as a source of light.

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Parents' Perceived Behavior Problems in the Persons With Mental Retardation: An Analysis for Parents' Need

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ABSTRACT:

Background: Mental retardation is a commonly diagnosed developmental problem among psychiatric disorders. Parents frequently report behavior problem in their children with mental retardation and seek help. **Aim:** Aim of this study is to analyze the behavior problems and their relation with severity, age and sex in the people with mental retardation. **Methods:** The study included seventy cases of mental retardation with reported behavior problems coming to the Clinical Psychology unit of Nepalgunj Medical College, from March 2013 to February, 2015. The parents' interviewed with regard to behavioral problems in their children of mental retardation was analyzed in twelve areas in terms of severity, age and sex. **Results:** Disobedience predominates in mild form (22.73%) and in moderate (19.15%), in severe category physical harm towards others (16.67%) and odd behavior in both severe (16.67%) and profound (20.00%) cases of mental retardation. In terms of sex, disobedience predominates in the males (17.70%) and physical harm towards others (17.86%) in females. Disobedience (14.71%) and repetitive behavior (14.71%) are prominent up to six years of age, physical harm towards others (18.46%) in age group 6-12 years, and disobedience (21.43%) predominates between age 12 to 18 years and also above 18 years. **Discussion:** Our finding are similar with various other studies, except self injurious behavior is more in mild to moderate group of cases than in severe or profound group. **Conclusion:** Parents predominantly seek help for managing problems of disobedience followed by physical harm towards others and odd behaviors.

Key words: Behavior problems, mental retardation, parents' need

INTRODUCTION

Mental retardation is the most common developmental disorder. It is a condition of arrested or incomplete development of the mind especially characterized by impairment of skills manifested during the developmental period, which contribute to the overall level of intelligence, i.e. cognitive, language, motor, and social abilities¹. It is a multidimensional problem. The dimensions include psychological, medical, educational and social aspects². From psychological aspect behavior problems are reported to be four to five times more in the persons with mental retardation as compared to intellectually normal persons³. Stress on the family members tend to increase with the presence of behavior problems in the mentally handicapped person⁴. They impose extra care taking demands and burden on parents⁵ that interferes in their educational process,⁶ reduces their social

acceptability^{7,8} and may also result in the threat of harm to themselves or others⁹. Therefore, it is no surprise that one of the most sought after area of service by parents is the management of behavior problems in their children¹⁰.

It is important for the professionals providing service to this population to know what the various behavior problems are posed to their parents for which they seek professional help. The present study attempts to analyze such behavior problems and also try to find how these are related to severity, age and sex of the persons. As there was no study conducted in Nepal, which assesses behavior problems in the persons with mental retardation, this study will provide valuable information in this area in Nepalese context.

MATERIAL AND METHODS

Aim of this research is to study the behavior problems and their relation with severity, age and sex in the persons with mental retardation. A descriptive cross-sectional study was carried out with seventy (70) cases of patients with mental retardation of both sexes from age 6-40 years diagnosed as per the ICD-10 criteria attending to the outpatient Department of Psychiatry and referred to the Clinical Psychology unit for evaluation of mental retardation from March, 2013 to February, 2015, Nepalgunj Medical College, Kohalpur Teaching Hospital¹¹. Ethical consideration was given due importance. Verbal consent was taken from the parents. Information obtained by them was kept confidential. Cases having IQ below 70 and where parents came as informants were included in the sample. Mental retardation with co-morbid psychiatric

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condition, visual or hearing handicap and cases with non-parents as informants were excluded from the sample. Data were analyzed in terms of percentage of behavior problems for each variable using SPSS (statistical Package for Social Studies).

Procedure

A glossary¹² of behavior problems was used. It was developed at National Institute for Mentally Handicapped (NIMH), Secunderabad, India to classify reported behavior problems into twelve categories as follows:

Physical Harm Towards Others

Examples, "beats others, pinches others, pulls others' hair, bites others, etc."

Damages Property

Examples, "tears clothes, breaks things, throw objects, etc."

Misbehaves with others

Examples, uses foul languages or vulgar words, snatches things from others, etc."

Temper Tantrums

Examples, shouts, screams, cries aloud, etc."

Wanders

Examples, goes out of house, roams on streets, etc."

Disobedience:

Examples, "refuses to listen to others, stubborn, does opposite of what is told, etc."

Repetitive Behavior

Examples, "rocks body back and forth, nods or shakes head from side to side, etc."

Self Injurious Behavior

Examples, "bangs head, scratches self, pulls own eye lashes, bites own hands, picks at own wounds, etc."

Restless-physically Over-active

Examples, "does not sit at a place, for required time."

Odd Behavior:

Examples, smiles, laughs or talks to self without reason, smells objects, collects rubbish or unwanted trash, etc."

Fears

Examples, "scared to go near bath room, fear of loud noises, fear of objects, etc."

Sexual Problems

Examples, "masturbates in public, makes sexual advances towards opposite sex, touches genitals in public, etc."

The presenting complaints of behavior problems, as reported by parents of seventy (70) cases on their first contact were classified according to the above mentioned twelve categories. For example, if there were two behavior problems reported in a given case such as "tears clothes" and "does not sit at a place" then they were classified under two separate categories i.e., "damages property" and "restless-physically Over-active" respectively. Whereas if a given case, more than one behavior problem belonging to the same category was reported, then it was classified as one behavior problem only within that category. For example, if in the same case behavior problems reported were "scratches self", "bites own hands", and "picks at own wounds" they were all classified under one category only, i.e. "self injurious behavior."

RESULTS

During the two years period of study out of 70 subjects 18 (25.71%) cases were referred from the department of Pediatrics for confirmation of mental retardation and psychological intervention. The obtained data were analyzed in terms of percentages of behavior problems.

Out of 70 study subjects 45(64.29%) were male and 25(35.71%) were female. Majority (25, 35.71%) were from the age group 6-12 years followed by 12-18 (18, 25.71%). The behavior problem "Disobedience" (16.57%), is followed by "physical harm towards others" (15.38%), "odd behaviors" (13.02%), "damages property" (10.06%), "wanders" (8.87%), "misbehaves with others" (7.69%), "restless physically overactive" (7.69%), "repetitive behaviors" (6.51%), "self injurious behaviors" (5.92%), "temper tantrums" (3.55%), "fears" (3.55%), and "sexual problems" (1.18%) respectively.

In terms of age, disobedience (14.71%) and repetitive behavior (14.71%) are prominent up to six years of age, physical harm towards others (18.46%) followed by odd behavior (15.38%) the age 7 to 12 years and between age 13 to 18 years disobedience (21.43%) followed by physical harm towards others (16.67%) and wanders (14.29%) perceived more by the parents. Above 18 years of age disobedience (21.43%) is followed by misbehavior with others (17.86%) and physical harm towards others (14.29%).

Sex variable (table IV), "disobedience" predominates in the males (17.70%) and is followed by "physical harm towards others", (14.16%) the reverse is reported for females where "physical harm towards others" (17.86%) is greater than "disobedience" (14.28%).

Age Range (in years)	Male	Female	Total N (%)
0-6	10	6	16 (22.86%)
7-12	16	9	25 (35.71%)
13-18	12	6	18 (25.71%)
>18	7	4	11 (15.71%)
Total N (%)	45 (64.29%)	25 (35.71%)	70 (100%)

Table I: Distribution of Age and Sex

Behavior Problems	Severity of Mental Retardation				
	Mild (IQ: 50-70) (N=26)	Moderate (IQ: 35-49) (N=21)	Severe (IQ: 20-34) (N=14)	Profound (IQ: < 20) (N=9)	Total
Physical Harm Towards Others	10(15.15)	7(14.89)	6(16.67)	3(15.00)	26(15.38)
Damages Property	5(7.58)	5(10.64)	5(13.89)	2(10.00)	17(10.06)
Misbehaves with Others	4(6.06)	6(12.76)	2(5.56)	1(5.00)	13(7.69)
Temper Tantrums	2(3.03)	1(2.13)	1(2.78)	2(10.00)	6(3.55)
Wanders	6(9.09)	3(6.38)	4(11.11)	2(10.00)	15(8.87)
Disobedience	15(22.73)	9(19.15)	3(8.33)	1(5.00)	28(16.57)
Repetitive Behavior	4(6.06)	2(4.25)	3(8.33)	2(10.00)	11(6.51)
Self Injurious Behavior	4(6.06)	3(6.38)	2(5.56)	1(5.00)	10(5.92)
Restless Physically Overactive	6(9.09)	3(6.38)	3(8.33)	1(5.00)	13(7.69)
Odd behaviors	7(10.61)	5(10.64)	6(16.67)	4(20.00)	22(13.02)
Fears	2(3.03)	2(4.25)	1(2.78)	1(5.00)	6(3.55)
Sexual Problems	1(1.51)	1(2.13)	0(0.00)	0(0.00)	2(1.18)
Total	66	47	36	20	169

Table II: Parents' Perception of Behavior Problems in Terms of Severity of Mental Retardation (percentage given in parenthesis)

DISCUSSION

Predominantly disobedience is perceived as a major behavior problem by parents of mentally retarded children. This could be reflection of our culture, wherein parents find it difficult to accept children who refuse to do what they want them to do. The least perceived behavior problem is in the sexual area, which could be more due to inhibitions in the parents of mentally retarded children to openly report on such matters at first contact. Findings of this study is consistent with the study done in California that found 5.5% persons with mental retardation showed self injurious behavior¹³. Findings on damage to property is consistent with a longitudinal study in which it was found to be 10%¹⁴.

In terms of severity, the trends appear to be similar for the mild and moderate groups where "disobedience" and "physical

harm towards others" are perceived as major behavior problems. In contrast for the severe and profound groups of children, "odd behaviors" are perceived as more common. These contrasting trends between the mild-moderate and the severe-profound groups could be because the milder groups are better in communication and expressive skills to convey their disagreements with others through open disobedience or even explicit harm towards others.

On the other hand, the severe-profound groups of people tend to interact less with the external environment due to poor ability in such skills. Hence they indulge in more self-stimulating behaviors. Also, parents perceive "odd behaviors" more easily as they distinguish these children more readily from other normal children. Such an understanding could be even true to explain greater number of "repetitive behaviors"

Behavior Problems	Age Range (in Years)				Total
	0-6 (N=16)	7-12 (N=25)	13-18 (N=18)	>18 (N=11)	
Physical Harm Towards Others	3(8.82)	12(18.46)	7(16.67)	4(14.29)	26(15.38)
Damages Property	3(8.82)	8(12.31)	3(7.14)	3(10.71)	17(10.06)
Misbehaves with Others	1(2.94)	2(3.08)	5(11.90)	5(17.86)	13(7.69)
Temper Tantrums	4(11.76)	2(3.08)	0(0.00)	0(0.00)	6(3.55)
Wanders	1(2.94)	7(10.77)	6(14.29)	1(3.57)	15(8.87)
Disobedience	5(14.71)	8(12.31)	9(21.43)	6(21.43)	28(16.57)
Repetitive Behavior	5(14.71)	4(6.15)	2(4.76)	0(0.00)	11(6.51)
Self Injurious Behavior	4(11.76)	3(4.62)	1(2.38)	2(7.14)	10(5.92)
Restless Physically Overactive	3(8.82)	5(7.69)	3(7.14)	2(7.14)	13(7.69)
Odd behaviors	4(11.76)	10(15.38)	5(11.90)	3(10.71)	22(13.02)
Fears	1(2.94)	3(4.62)	1(2.38)	1(3.57)	6(3.55)
Sexual Problems	0(0.00)	1(1.54)	0(0.00)	1(3.57)	2(1.18)
Total	34	65	42	28	169

Table III: Parents' Perception of Behavior Problems in Terms of Chronological ages of Mentally Retarded Persons (percentage given in parenthesis)

Behavior Problems	Sex		
	Male (N=45)	Female (N=25)	Total
Physical Harm Towards Others	16(14.16)	10(17.86)	26(15.38)
Damages Property	11(9.73)	6(10.71)	17(10.06)
Misbehaves with Others	9(7.96)	4(7.14)	13(7.69)
Temper Tantrums	3(2.65)	3(5.36)	6(3.55)
Wanders	11(9.73)	4(7.14)	15(8.87)
Disobedience	20(17.70)	8(14.28)	28(16.57)
Repetitive Behavior	7(6.19)	4(7.14)	11(6.51)
Self Injurious Behavior	7(6.19)	3(5.36)	10(5.92)
Restless Physically Overactive	9(7.96)	4(7.14)	13(7.69)
Odd behaviors	15(13.27)	7(12.50)	22(13.02)
Fears	3(2.65)	3(5.36)	6(3.55)
Sexual Problems	2(1.77)	0(0.00)	2 (1.18)
Total	113	56	169

Table IV: Parents' Perception of Behavior Problems in Terms of sex of Mentally Retarded Persons (percentage given in parenthesis)

reported in severe/profound groups than in mild/moderate groups of mentally retarded people. It is hard to explain why self injurious behavior in this sample is reported more in mild/moderate groups than in severe/profound groups as this is not in line with some of the studies reported in western literature. However, if we accept the understanding of learning approach which explains that self injurious behavior could be maintained not only through self stimulation but also due to various other factors such as social attention, escape or tangible reinforcement, one would not find it difficult to explain such trends.

In terms of age of mentally retarded persons, parents expect more obedience from their children as they advance in years. Probably age does influence behavior problems as indicated by the result of this study. The trends indicate that temper tantrums, repetitive behavior, restless physically overactive behaviors decrease with age. However, misbehaves with others and disobedience appear to increase with age.

In regards to sex variable, the characteristic trend appears to be "disobedience" predominates in the males (17.70%) and is followed by "physical harm towards others", (14.16%) the reverse is reported for females where "physical harm towards others" (17.86%) is perceived by parents as a greater problem than "disobedience" (14.28%). It is possible that these trends reflect the social expectations from females in our society, who are expected to remain physically docile and not act out their aggression towards others, while this may not be true for males. Further it can be noted that "wanders" as a behavior problem, is perceived more in male mentally retarded persons (9.73%) than in females (7.14%). Conversely, "temper tantrums" (5.36%), "fears" (5.36%) are reported twice as much in female than in males. The findings are in line with expected social role which influences parents handling of their children.

CONCLUSION

Findings of this study concluded that disobedience followed by physical harm towards others and odd behaviors are the most common behavior problems reported frequently by the parents. Disobedience is found more common in male, and that increases with the age.

Although the results only indicate trends in parents' perceptions of behavior problems in mentally handicapped children, yet they do significantly highlight the need for professionals working with this population to equip themselves with skills to identify such problems early and help parents to manage them promptly. The findings also highlight the need to develop suitable models of parent training programs to transfer behavioral technology to parents in Nepalese context.

There were some limitations of this study. The study conducted on parents report in first visit. The sample size is small. Future research is needed with bigger sample using standard

questionnaire and the effect of mentally handicapped persons' behavioral problems on their parents' quality of life and psychological well-being. So that parents' need of seeking professional help will be fulfilled in a proper direction.

Acknowledgment

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Role of laparoscopy in the Etiologic Diagnosis of Ascites of Unknown Origin

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ABSTRACT

Introduction: Ascites is a consequence of many different etiologies, such as liver cirrhosis, neoplasm, tuberculous peritonitis, pyogenic peritonitis, congestive heart failure, renal and pancreatic diseases but, in some situations, ascites is of unknown cause in spite of comprehensive study. The aim of this study was to identify the role of laparoscopy in the etiological diagnosis of ascites of unknown origin. **Methods:** This was a prospective study of the patients who underwent diagnostic laparoscopy to determine the causes of ascites of unknown origin in the Department of Surgery, Nepalgunj Medical College Teaching Hospital from April 2012 to May 2014. All the patients underwent laparoscopy for the evaluation of ascites after appropriate clinical and laboratory examinations, which failed to reveal the cause. **Results:** Peritoneal tuberculosis and carcinomatosis peritonei were the two most common causes found in 37.14% and 57.14% of cases respectively. The average age of the patients was 52 years. Distension of abdomen, abdominal pain and weight loss were the most frequently observed symptoms in 33 patients (100%), 26 patients (74.28%) and 18 patients (51.42%) respectively. The CT scan findings, were a omental thickening in 28 cases (80%), peritoneal nodules in 7(20%) patients and the intraabdominal lymph nodes in 13 patients (39.39%). Ovarian mass was found in 4 patients (11.42%). The histological diagnosis was a peritoneal carcinomatosis in 13 (37.14%) patients and peritoneal tuberculosis in 20 (57.1%) patients and in two patients nonspecific inflammation. The sensitivity and specificity of laparoscopic diagnosis in the diagnosis of peritoneal tuberculosis were 78.67% and 98.6% respectively and in the diagnosis of peritoneal carcinomatosis were 94.78% and 72.2% respectively. The positive predictive value was 97.3% and the negative predictive value was 73.7% for peritoneal tuberculosis and for peritoneal carcinomatosis the positive predictive value was 83.7% and negative predictive value was 94.87%. **Conclusion:** The etiologic diagnosis of ascites of unknown origin is difficult despite the availability of several tests. Laparoscopy with peritoneal biopsy has still got a role in diagnosing these types of ascites where the other laboratory and imaging studies fail to reveal the cause.

Key words: Ascites, laparoscopy, peritoneal tuberculosis, peritoneal carcinomatosis

INTRODUCTION

Ascites is a consequence of many different underlying diseases. The standard procedure to assess ascites includes laboratory examinations (cell count, albumin level, total protein level, Gram stain, culture and cytology) and image investigations (ultrasound and computed tomography (CT) scan). The etiology of majority of ascites can be identified by these investigations. Ascites of unknown origin is defined as the etiology of ascites that cannot be determined after conventional laboratory examinations and imaging investigations. This poses a major diagnostic challenge for clinicians. The etiologies of these ascites, say of unknown origin, are dominated by tuberculosis and peritoneal carcinomatosis requiring early diagnosis and care^{1,2}.

Laparoscopy as a minimally invasive technique has developed rapidly in recent years. Laparoscopy has long played an important role in the evaluation of ascites when its cause cannot be clarified clinically³. Although the utility of diagnostic laparoscopy has recently been questioned, possibly because of the advent of various non-invasive scanning techniques,^{4,5} it is a reliable technique for the investigation of patients presenting with ascites of unknown origin.

The aim of this work was to describe the value of diagnostic laparoscopy and histology in etiological diagnosis of ascites of unknown origin.

MATERIAL AND METHODS

It is a prospective study including all patients who underwent diagnostic laparoscopy to determine the causes of ascites in the Department of Surgery, Nepalgunj Medical College Teaching Hospital during the period from April 2012 to May 2014. All the patients underwent laparoscopy for the evaluation of ascites after appropriate clinical and laboratory examinations, including ascitic fluid for cytology as well as acid fast bacilli, serum albumin ascetic gradient, chest x-ray, ultrasonography or CT abdomen, had failed to reveal the cause. Procedures took place under general anesthesia. Patients with uncorrectable coagulopathy and severe cardiopulmonary diseases were excluded.

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Pneumoperitoneum was created by open technique through supraumbilical port. Laparoscopic examination was performed with either a 10 mm 0° forward-viewing or a 10 mm 30° oblique-viewing telescope. Biopsy of the suspicious lesion was performed through an additional 5 mm port. The visual diagnosis of tuberculous peritonitis was based on the presence of multiple yellowish white miliary tubercles of uniform size (usually < 5 mm) on the visceral and parietal peritoneum.

Carcinomatosis peritonei was diagnosed by the presence of large nodules (1 to 5 cm in diameter) on the parietal peritoneum, omentum, falciform ligament or liver surface. Liver cirrhosis was diagnosed by the presence of irregular nodules on the liver surface, and collaterals on the falciform ligament and the greater omentum. The final diagnosis was made on the histopathological diagnosis. All data were analyzed using Statistical Package for Social Science (SPSS). Chi-square and t-tests were used to analyze data, as appropriate, and statistical significance was established at $p < 0.05$.

RESULTS

Over a period of 3 years, 35 patients met the criteria for inclusion. The average age of patients was 52 ± 13 years with extremes from 18 to 68 years. There were 23 males and 12 females. Distension of abdomen, abdominal pain and weight loss were the most frequent, observed symptoms in 33 patients (100%), 26 patients (74.28%) and 18 patients (51.42%) respectively. Peritoneal tuberculosis and carcinomatosis were the two most common causes found in 20 patients (57.14%) and 13 patients (37.14%) respectively.

The appearance of ascites fluid was yellow in 26 patients (74.28%) and hemorrhagic in 9 patients (25.71%). Ascites was lymphocyte-rich ($>1000 /\text{mm}^3$) in 19 patients (54.28%) and

exudative in 33 patients (94.28%). Ascitic fluid analysis for acid fast bacilli and malignant cytology was negative in all patients. CA-125 was raised in 7(20.0%) patients, CEA in 4 patients (11.42%) and CA 19-9 was raised in 2 patients (5.71%). The anomalies noted on CT scan, were a omental thickening in 28 cases (80%), peritoneal nodules in 7(20%) patients and the intraabdominal lymph nodes in 13 patients (39.39%). Ovarian mass was found in 4 patients (11.42%).

The main clinical, laboratory and CT characteristics are summarized in Table-I. On laparoscopy, peritoneal nodules were present in 30 (85.71%) patients, omental thickening in 26 patients (78.9%), other associated findings were: adhesions in 30 patients (85.71%), peritoneal thickening in 12 patients (36.3%). Only adhesions were present in 5 patients (15.15%). The histological diagnosis in these forms was peritoneal tuberculosis in 3 patients, a non-specific inflammation in 2 patients Table-II. Laparoscopic visual diagnosis was in favor of a peritoneal carcinomatosis in 9 cases (25.71%), peritoneal tuberculosis in 21 cases (60%), and nonspecific infection in 5 cases (14.28%).

The histological diagnosis was a peritoneal carcinomatosis in 13 (37.14%) patients and peritoneal tuberculosis in 20 (57.1%) patients and in two patients nonspecific inflammation. The peritoneal carcinomatosis was of ovarian origin in 8 patients, colorectal origin in 3 patients and gall bladder origin in two patients. The sensitivity and specificity of laparoscopic diagnosis in the diagnosis of peritoneal tuberculosis were 78.67% and 98.6% respectively and in the diagnosis of peritoneal carcinomatosis were 94.78% and 72.2% respectively.

	Peritoneal tuberculosis N=20	Peritoneal carcinomatosis N=13
Distension of abdomen	20(100%)	13(100%)
Abdominal pain	17(85%)	9(69.23%)
Weight loss	13(37.14%)	5(3.84%)
Ascitic fluid		
Serous	16(80%)	10(28.57%)
Hemorrhagic	2(10%)	7(20%)
Lymphocyte rich	14(40%)	5(14.28%)
CT findings		
Peritoneal nodules	2(10%)	5(14.28%)
Omental thickening	18(90%)	10(76.92%)
Abdominal lymphadenopathy	9(45%)	4(30.76%)
Ovarian mass	0	4(30.76%)

Table I: Clinical, laboratory and CT features of patients according to the two main etiologies.

	Peritoneal tuberculosis N=20	Peritoneal carcinomatosis N=13
Peritoneal nodules	17(85.0%)	13(100%)
Peritoneal thickening	7(35.0%)	5(38.46%)
Omental thickening	15(75.0%)	11(84.61%)
Adhesions	17(85.0%)	13(100%)
Only adhesions	3(15.0%)	0
Ovarian mass	0	3(23.07%)

Table II: The laparoscopic findings according to the two main etiologies.

The positive predictive value was 97.3% and the negative predictive value was 73.7% for peritoneal tuberculosis and for peritoneal carcinomatosis the positive predictive value was 83.7% and negative predictive value was 94.87%.

DISCUSSION

Ascites of unknown origin are dominated by tuberculosis and peritoneal carcinomatosis requiring early diagnosis and care^{1,2}. The means of imaging (ultrasound, CT scan, MRI) have limitations in the etiological diagnosis of these patients⁶. Several series of literature^{7,8}, confirmed the feasibility of laparoscopy in the exploration of the ascites of unknown origin as well as its high sensitivity and specificity.

Three types of lesions are described in peritoneal tuberculosis. Peritoneal granulations are whitish or yellowish, uniform size, the size of a pin head, not exceeding 5 mm. Adhesions result from the Organization of fibrinous exudates, between two peritoneal layers. The inflammatory phenomena manifested by congestion, hypervascularisation and edematous state of peritoneum. In literature, the granulations are the most frequently encountered aspect (66% to 100% of the cases), adhesions were observed in 13% to 80% of cases, and inflammatory phenomena are described in 21% to 79% of the cases⁹.

For our patients with peritoneal tuberculosis, the granulations were observed in 85% of cases, adhesions in 85% cases and inflammatory phenomena in 35% of cases. In the peritoneal carcinomatosis, peritoneal implants are generally larger upto 1 cm and distributed irregularly on the peritoneum, abdomino-pelvic viscera and diaphragm.

In a series of Barnard et al involving 90 patients the positive predictive value of the laparoscopy in peritoneal tuberculosis was 85%. Peritoneal biopsy confirmed the diagnosis of tuberculosis and peritoneal carcinomatosis in 98% and 100% of the cases respectively. The sensitivity and specificity of visual diagnostic laparoscopic in 176 patients with ascites of undetermined origin, the sensitivity and specificity of diagnostic visual laparoscopic peritoneal tuberculosis were 86% and 100% respectively. In the peritoneal carcinomatosis,

the sensitivity and specificity were 100% and 94%, respectively¹⁰.

Sheth SS et al.⁷ assessed the contribution of laparoscopy in ascites of unknown origin in 70 women. Laparoscopy and peritoneal biopsies have highlighted the diagnosis in 90% of cases. Nassir et al¹¹ assessed the contribution of laparoscopy in exuding ascites of unknown origin in 33 patients. The diagnostic yield of this exploration was 97%.

In our series, sensitivity and specificity of the laparoscopic diagnosis in the diagnosis of peritoneal tuberculosis were 78.67% and 98.6% respectively. In the peritoneal carcinomatosis, the sensitivity and specificity were 94.78% and 72.2% respectively. This shows that the only visual laparoscopic diagnosis helps to confirm the diagnosis of tuberculosis and eliminate a carcinomatosis in most of cases. Histology allowed confirming the diagnosis of tuberculosis and peritoneal carcinomatosis in all cases.

CONCLUSION

Laparoscopy with peritoneal biopsy has still got a role in diagnosing the cause of ascites of unknown origin when other modalities of investigations fail to reveal the etiology.

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Evaluation of Office Ligation In The Treatment of Hemorrhoids at Nepalgunj Medical College Teaching Hospital

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ABSTRACT

Introduction: Rubber band ligation, an outpatient procedure for treatment of 2nd and 3rd degree hemorrhoids is an effective mode of management. **Aims and objectives:** To evaluate the effectiveness of rubber band ligation as an office procedure in the treatment of 2nd and 3rd degree hemorrhoids. **Material and Methods:** This is a cross sectional hospital based study of 30 cases that underwent rubber band ligation as an outpatient procedure for 2nd and 3rd degree hemorrhoids done in Nepalgunj Medical College Teaching Hospital from the period of August 2014 to June 2015. The patients were followed up for six months for the development of procedure related complications, relief of symptoms, and requirement of any further interventions. The total cost of treatment was calculated and the time off work was noted. Patients were requested to assess the forms of treatment as excellent, moderately successful or of little help based on their results post treatment. Statistical analysis using SPSS software (version 20) was done and p value less than 0.05 was taken as significant. **Results:** Post procedure complications were milder and self-limiting, with discomfort in 57.5% (2nd degree) and 60% (3rd degree), pain in 5% (2nd degree) 40% (3rd degree), bleeding in 22.5% (2nd degree) and 30% (3rd degree) of patients with absence of any major complications (sepsis or death). Majority (77.5% in 2nd degree, 70% in 3rd degree) of the patients significantly improved after initial treatment with band ligation. Some of the patients treated by band ligation required further intervention i.e. 16.66% in 2nd and 16.66% in 3rd degree as repeat ligation in the immediate post-op period and were managed subsequently. But none of them required any surgical procedures. Majority of the patients treated by band ligation were able to resume their normal work within three day i.e. 95% in 2nd and 90% in 3rd degree hemorrhoids. Most of the patients spent Rs 2000-2500 (52.5% in 2nd and 40% in 3rd degree) which most was on routine checkups and follow-ups but it was very cheaper as compared to others modalities. Most of the patients (77.5% in 2nd and 70% in 3rd degree) treated by band ligation assessed the treatment as excellent. **Conclusion:** Rubber band ligation is a simple, safe and effective method for treating symptomatic second and third degree hemorrhoids as an outpatient procedure with significant improvement in quality of life. Immediate relief of symptoms can be obtained in the post-operative period and therefore be considered as the treatment of choice for second and third degree hemorrhoid. Though the complications are slightly higher and improvement in symptoms were delayed than in second degree but still Rubber Band Ligation proved to be effective even in 3rd degree hemorrhoid.

Key words: Efficacy, hemorrhoid, rubber band ligation, sepsis, vasovagal reflex

INTRODUCTION

For centuries the human race has been plagued by a very common condition called hemorrhoids. Yet the whole subject is still clouded by misconception and folklore. It is almost impossible to calculate its prevalence, for many patients with hemorrhoids never have symptoms so whether such persons should be considered as diseased is still a question. So only symptomatic patients with hemorrhoids should be taken into consideration¹. Hemorrhoids, the word is derived from Greek,

haima meaning blood and rhoos meaning flowing, the common man's term piles is derived from Latin word pila meaning a ball².

Hemorrhoids have been defined differently over the years from over simplified definition of varicosities of hemorrhoidal plexus to the more recent study describing them as specialized highly vascular "cushions" of discrete masses of thick submucosa, containing blood vessels, smooth muscles, elastic and connective tissue which may slide down due to breakage of collagen and anchoring supporting connective tissue causing symptoms like prolapse, bleeding, pain etc. The cause of which is still hypothesized as erect posture, constipation, straining during defecation, sedentary work and diet low on fiber, heredity, high resting anal pressures¹.

Numerous modalities and techniques have been developed to treat symptomatic hemorrhoids ranging from simple dietary measures and bowel habit regulation, through a number of non-operative procedures, to different techniques of excision of diseased anal cushions. The vast amount of treatment

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options means none are close to perfection. While many non-operative procedures are effective in controlling symptoms, at least from the patient's perspective, they all share the common problem of recurrence. Although, surgical hemorrhoidectomy is more definitive in symptom control, it has a reputation for being a painful procedure for a relatively benign disorder. First, second and third degree hemorrhoids can be treated by non-surgical methods in outpatient clinics while severe prolapsed or circumferential hemorrhoids can be treated using a variety of surgical techniques, e.g. Milligan Morgan, Longo and others. Nonsurgical methods aim at tissue fixation (sclerotherapy, cryotherapy, photocoagulation, laser), or fixation with tissue excision rubber band ligation (RBL). RBL is considered the most widely used procedure, and it offers the possibility to resolve haemorrhoidal disease without the need for hospitalization or anesthesia, and with lower incidence of complications³.

Rubber band ligation is one of the non-surgical interventional procedures. It has shown to be superior to injection sclerotherapy in 2nd and 3rd degree haemorrhoid and other treatment modality though it bears mild degree of morbidity like vasovagal episodes, pain, bleeding, urinary discomfort and discharge per rectum, fistula in ano and anal stenosis. The disadvantages of this procedure are that, no pathological specimen is obtained, therefore some cases of anal cancer may be overseen. However rubber band ligation of hemorrhoids is a widely used method for the treatment of symptomatic hemorrhoids⁴.

MATERIAL AND METHODS

This is a hospital based cross sectional study done in Nepalgunj Medical College Teaching Hospital in general surgery outpatient department from the period of August 2014 to June 2015. Total 30 patients were enrolled with the diagnosis of 2nd and 3rd degree internal haemorrhoids. Patients of immuno-compromised, bleeding disorder, deranged liver function test, uncontrolled hypertension and pregnant were excluded.

Soap water enema was given to evacuate the rectum before beginning of procedure and patients were put in left lateral (SIMS) position for the procedure. With the help of proctoscope, light source, Barron band applicator and Alligator forcep. Barron band (Rubber band) was used to ligate the pedicle of mucosa of internal haemorrhoids causing ischemia, necrosis and scarring. Further the haemorrhoidal tissue sloughed off with in a period of 7 to 10 days. Post-procedure pain was relieved by oral analgesia if necessary. Warm sitz bath was also advised in case of pain¹. Patients were advised to take up liquids and semisolids for one day, following the procedure so that attempts at defecation were minimal. Oral intake of bulk forming agents for 6-8 weeks was advised to the patients.

The patients were watched for post procedure pain, discomfort, bleeding, urinary retention, sepsis, cost of treatment and days off work were evaluated. Patients were

followed up regularly at intervals of one, three and six months for symptoms as pain, bleeding, prolapse, irritation, mucous discharge and to look out for anal stenosis or incontinence and were enquired whether pre-procedure symptoms had mostly resolved or residual symptoms were present. Patients were requested to assess the form of treatment as excellent, moderately successful or of little help based on their results post-procedure.

RESULT

Post Procedure Complications	Second Degree (n=24)%	Third Degree (n=6)%
Discomfort	57.5	60.0
Pain	5.0	40.0
Bleeding	22.5	30.0
Urinary Retention	-	-
Sepsis	-	-
Vasovagal Reflex	-	-

Table I: Patients of post procedure complications

In second degree haemorrhoid maximum number of cases about 57.5% had discomfort, bleeding was seen in least number of cases around 22.5% and pain in about 5% cases. In third degree also maximum number of cases had discomfort (60%) followed by pain and bleeding 40% and 30% respectively.

Further Intervention	Second Degree (n=24)%	Third Degree (n=6)%
Repeat banding	16.66	16.66

Table II: Further Intervention

83.33% in 2nd degree and 83.33% in 3rd degree patients improved with the first setting while 16.66% in 2nd and 16.66% in 3rd degree required second setting of ligation in their early follow up at one week. They underwent repeat banding at same session and subsequently followed up.

Post ligation discomfort	Second Degree (n=24)%	Third Degree (n=6)%
No	7.5	0.0
Slight(1-2days)	60.0	60.0
Moderate(≥3 days)	32.5	40.0
Severe	0.0	0.0

Table III: Post-ligation discomfort

None of the cases had severe discomfort whereas 60% had slight discomfort in both the degrees of hemorrhoids.

Time off work	Second Degree (n=24)%	Third Degree (n=6)%
None	77.5	70.0
1-3 days	17.5	20.0
>4 days	5.0	10.0

Table IV: Time off work

Maximum number of cases i.e 70% returned to work the next day in 3rd degree whereas 77.5% in second degree, only 5% cases took off work for more than 4 days in 2nd degree and 10% in 3rd degree, whereas 17.5% and 20% were off work for 1 to 3 days in 2nd and 3rd degree hemorrhoids respectively.

Cost of treatment in Rupees	Second Degree (n=24)%	Third Degree (n=6)%
2000 - 2500	52.5	40.0
2500 - 3000	25.0	30.0
3000 - 3500	22.5	30.0

Table V: Cost of treatment

The amount of money spent on routine check-ups, post procedure for pain relief and to manage complications with hospital visits were arbitrarily divided into groups who spent Rs.2000-2500, Rs.2500-3000 rupees and Rs.3000-3500. Maximum number of cases spent Rs, 2000-2500 following rubber band ligation i.e. 52.5% and 40% in 2nd and 3rd degree haemorrhoid respectively.

In 2nd degree, at one-month post rubber band ligation, bleeding which was seen in 97.5% cases at presentation decreased to 27.5%, which further decreased to 22.5% at 3 months. Pain seen in 5% cases at presentation decreased to 5% at one month and still 5% at 3 months. Prolapse observed in 97.5% cases at presentation decreased to 7.5% at one month and 2.5% at 3 months. At 6 months 2.5% cases still had bleeding, 2.5% had pain and 2.5% had prolapsed.

Symptoms	Second degree	Third degree	Second degree	Third degree	Second degree	Third degree	Second degree	Third degree
Bleeding	97.5	90.0	27.5	20.0	22.5	10.0	2.5	0.0
Pain	5.0	60.0	5.0	10.0	5.0	10.0	2.5	0.0
Prolapse	97.5	100.0	7.5	20.0	2.5	20.0	2.5	10.0
Anal stenosis	-	-	-	-	-	-	-	-
Anal incontinence	-	-	-	-	-	-	-	-
Irritation	-	-	-	-	-	-	-	-
Discharge	-	-	-	-	-	-	-	-

Table VI: Effect of Rubber band treatment on symptom improvement

Patient assessment of treatment	Second Degree (n=60%)	Third Degree (n=15%)
Excellent	77.5	70.0
Moderate	22.5	30.0
Little help	-	-

Table VII: Patient assessment of treatment

DISCUSSION

The present study was conducted on 30 patients of 2nd and 3rd degree internal haemorrhoids who underwent rubber band ligation in outpatient department. The patients were watched for post procedure pain, discomfort, bleeding, urinary retention, sepsis, cost of treatment and days off work were evaluated.

- Post- procedure complication:** In second degree hemorrhoid 57.5% patients in present study were comparable with Kumar et al⁵ who had just 21% discomfort, pain was noted only in 5% in the present study and 29% in Kumar et al. 22.5% of the cases of present study had bleeding comparable to 11% of Lee et al⁶ whereas only 1% Kumar et al had bleeding. In third degree hemorrhoid, immediate post operative complication in our study was discomfort (60%) followed by pain (40%) and bleeding (30%). Kombarozos et al⁷ in his study found pain and haemorrhage as the most frequent complications of which pain comprise of 8.6% and bleeding 2.2%. Pain being a subjective complaint is primarily very difficult to assess, so the accuracy may be false and discrepancy in the result can occur as in our study. Kumar et al⁵ in their prospective study found immediate complication in 67.3% of which pain was the predominant symptom in 51% vasovagal attack in 15.3% while bleeding in 1% of the case.
- Further intervention:** In the present study, out of 30 patients treated by RBL, 20(83.3%) in 2nd degree and 5(83.3%) in 3rd degree, patients did not require any further intervention. 16.66% in 2nd and 16.66% in 3rd degree in 2nd required repeat RBL due to persistent prolapse and

bleeding but no one required open hemorrhoidectomy. Patients with repeat ligation improved after the treatment. Similar findings were noted in the study by Keighley et al⁸ where only 14.28% of the patients treated by RBL needed an alternative treatment or were no better compared to 62.12% after high fiber diet ($p<0.001$).

3. **Post ligation discomfort:** Maximum patients 60% in present study in both grades and 62% in both Ruffinhood et al⁹ and Groves et al¹⁰ study had slight discomfort lasting for 1-2 days were comparable. Moderate discomfort in present study was seen in 32.5% in 2nd degree and 40% in 3rd degree cases comparable to 33% in Ruffinhood et al and 40% in Poon et al.¹¹ Severe discomfort was not seen in the present study comparable to 4% in Ruffinhood et al and 12% of Groves et al study.
4. **Time off work:** In 2nd and 3rd degree hemorrhoid 77.5% and 70% of the present study group lost no days off work respectively, comparable with 68% of Groves et al.¹⁰ 17.5% (2nd) and 20% (3rd) had 1-3 days off work comparable to 12% of Arabi et al¹² and at least of only 5% cases in 2nd and 10% in 3rd degree in present study had > 4 days of work in comparable to 5.8% in Arabi et al and 6% in Groves et al study.
5. **Cost of treatment:** In 2nd degree 52.5% and in 3rd degree 40%, cases reported as saying they spent 2000-2500 rupees, 25% in 2nd and 30% in 3rd degree as 2500-3000 rupees and 22.5% in 2nd and 30% in 3rd degree as 3000-3500 rupees. This being an outpatient procedure is much less expenditure other forms of treatment as assessed by Barzital who found office procedure of Rubber band ligation 1/10th the cost of surgery Poon et al¹¹ and Lee et al⁶ have also acknowledged the cost effectiveness of Rubber band ligation.
6. **Symptom improvement:** In 2nd degree haemorrhoid, at one-month post rubber band ligation, bleeding was seen in 97.5% cases at presentation that decreased to 27.5% which further decreased to 22.5% at 3 months which further decreased to 2.5% at 6 months. Pain was seen in 5% cases at presentation remained 5% at one and 3 months and decreased to 2.5% at 6 months. Prolapse observed in 97.5% cases at presentation decreased to 7.5% at one month and 2.5% at 3 and 6 months. In third degree hemorrhoid, bleeding seen in 90% cases at presentation decreased to 20% at 1 month which further decreased to 10% at 3 months. Pain seen in 60% cases at presentation decreased to 10% at one month and 10% at 3 months. Prolapse observed in 100% cases at presentation decreased to 20% at one month, 20% at 3 months and reduced to 10% at 6 months. This was the similar result found as per study done by Kumar et al⁵.

7. **Patient assessment of treatment:** In 2nd degree 77.5% and in 3rd degree 70% of present study cases remarked as excellent, comparable to 72% in Murie et al¹³, 22.5% in second degree and 30% in 3rd degree assessed treatment as of moderate help similar to 16.% in Murie et al. None of the cases assessed it as of any help in both degrees.

CONCLUSION

Rubber band ligation is a simple, safe and effective method for treating symptomatic second and third degree hemorrhoids as an outpatient procedure with significant improvement in quality of life. It is effective in most of the cases in the first session and therefore be considered as the treatment of choice for second degree hemorrhoid. Though the complications are slightly higher than in second degree but still RBL proved to be effective even in 3rd degree hemorrhoid. Treatment of persistent or recurrent symptoms with repeat RBL is effective and increases the overall success rate of this form of therapy.

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Postprandial Lipid Abnormalities in Type 2 Diabetes Mellitus, A Study at NGMC, Kohalpur

A. Shukla

ABSTRACT

Aim and Objectives: To study the postprandial lipid abnormalities in patients with type 2 diabetes mellitus. **Material and Methods :** Postprandial lipids were studied in 40 male type 2 diabetic subjects (age 49.75 ± 4.82 years) and 40 age and sex matched healthy controls (age 49.55 ± 4.82 years) after an oral fat challenge which consisted of a meal providing 729 kcal/m² body surface area with 68 gm fat. **Results:** Average duration of diabetes among diabetic was 2.32 ± 3.03 years. The body mass index (cases 25.84 ± 4.52 ; controls 25.74 ± 5.0 ; $p > 0.05$) and waist-hip ratio (cases 1.06 ± 0.13 ; controls 1.14 ± 0.2 ; $p > 0.05$) were similar in both groups. While fasting serum lipids were not significantly different between the two groups, a number of serum lipid abnormalities were noted in type 2 diabetic subjects in the postprandial state. These included a higher triglyceride-area under curve (AUC) (cases 1298.08 ± 485.2 vs. controls 922.15 ± 390.47 mg/dl/8h; $p=0.01$), a higher triglyceride-area under incremental curve (AUC) (cases 549.68 ± 382.24 ; control 294.75 ± 172.6 mg/dl/8h; $p=0.01$), a higher peak triglyceride level (cases 425.2 ± 204.47 mg%, controls $283.9 \pm 11.6.94$ mg%, $p=0.01$), a lower HDL-AUC (cases 130.35 ± 33.55 vs. controls 168.48 ± 56.01 mg/dl/8h, $p=0.013$) and a lower HDL nadir (Cases 28.05 ± 10.94 mg%, controls 37.13 ± 13.52 mg%, $p < 0.02$). Triglyceride AUC correlated significantly with fasting serum triglyceride ($r=0.62$) and BMI ($r=0.7$), but not with waist hip ratio. Postprandial lipaemia did not correlate with age, duration of diabetes, fasting blood glucose or glycosylated hemoglobin. **Conclusion:** In conclusion, type 2 diabetics demonstrate significant postprandial lipid abnormalities, particularly of triglycerides, which appear to be independent of glycaemic control.

Key words: Lipids, post prandial, type 2 diabetes

INTRODUCTION

Type 2 diabetes mellitus is associated with the development of premature arteriosclerosis and a higher cardiovascular morbidity and mortality¹⁻³. Diabetic dyslipidaemia is believed to play an important role in the pathogenesis of accelerated atherosclerosis in this condition⁴⁻⁵. The predominant lipid abnormalities seen in diabetes mellitus are an elevated serum triglyceride (Tg) level and a low HDL-C level.⁶ While several studies have found a significant association of fasting hypertriglyceridaemia^{5,7,8} and coronary artery disease (CAD) in diabetes mellitus, the relationship is not consistent particularly after adjusting for fasting HDL-C Levels⁹. It is being increasingly believed that atherosclerosis is a postprandial phenomenon as at least with respect to lipids, we are in the postprandial phase for most of the day^{10,11,13}. High postprandial triglycerides have shown a strong and independent association with^{11,12}. Earlier studies of postprandial lipids in diabetes mellitus have suggested abnormalities of Tg metabolism^{13,14} secondary to insulin resistance¹⁵ although results have not been consistent¹⁶. We have examined the postprandial lipid responses to a standard fat challenge in diabetic patients to characterize the nature and extent of postprandial lipaemia¹⁷.

MATERIAL AND METHODS

An oral fat challenge was given to 40 male type 2 diabetic patients and 40 age, sex and BMI matched healthy controls who had no family history of diabetes. Diabetes was diagnosed as per revised ADA criteria and were either newly diagnosed or off treatment for 2 weeks.

The present study was conducted at NGMC, Kohalpur between March 2012 to February 2013. Patients with fasting triglyceride level (FTG) >250 mg/dl, nephropathy, hepatic disease, hypothyroidism, Cushing's disease, inherited disorders of lipid metabolism, clinical or ECG evidence of CAD, alcoholism, smoking or use of medication affecting lipids were excluded. An oral glucose tolerance test was performed in all healthy controls to rule out diabetes, Impaired Fasting Glucose (IFG) and Impaired Glucose Tolerance (IGT). All subjects diabetic patients and control were hospitalised after preliminary clinical & lab assessment. These included fasting plasma glucose (FPG), 2 hrs postprandial plasma glucose (PPPG), Glycosylated Hemoglobin, lipid profile, kidney & liver function tests, X-ray chest and an electro cardiogram. After a 14 hour overnight fast, a standardised meal was given to all subjects providing 729 kcal/sq m body surface area (BSA) ($65.2\text{g fat/sq. m BSA}$). Blood was drawn at 0, 2, 4, 6 and 8 hours for glucose, and lipids estimation. Serum was separated and stored at -20°C for various estimations.

RESULTS

Table I shows the baseline characteristics of patients with type 2 diabetes mellitus. Diabetic subjects were middle aged (mean age 49.75 ± 8.86 years), with a mean body mass index (BMI) of

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25.84 ± 4.52 kg/sq m and waist/hip ratio of 1.06 ± 0.13 suggestive of central obesity. Diabetic subjects were matched for age, BMI, waist/hip ratio with controls.

The fasting lipid profile in type 2 diabetes patients (Table II) differed from controls only in a significantly lower HDL-C value (35.15 ± 10.84 mg/dl vs. 42.9 ± 14.11 mg/dl). There was no significant difference in any of the other lipid parameters in the fasting state.

Significant postprandial lipid abnormalities were observed in the diabetic subjects particularly of Tg and HDL-C (Table III). Triglyceride area under the curve, postprandial triglyceride area

under incremental curve and peak postprandial triglyceride levels were all significantly higher in diabetic subjects compared to controls (Figure. 1 and 2). In the case of HDL-C, while the HDL-C nadir and HDL-C Area under the curve were significantly lower than controls there was no difference once adjustment was made for fasting HDL-C values and area under decremental curves were compared.

Table IV shows the correlation of postprandial triglyceride parameters with various baseline variables. Clearly, postprandial triglyceridaemia showed significant correlation only with BMI and fasting Tg values but not with age duration of diabetes or any other measure of glycemic (FPG, PPPG and HbA_{1c}).

	Diabetic patients	Control	P
Age (yrs)	49.75±8.86	49.55±4.82	0.93
Duration of DM (yrs)	2.32±3.03	-	-
BMI (kg/sq m)	25.84±4.52	25.74±5.0	0.94
Waist/ Hip	1.06± 0.13	1.14±0.20	0.16
HbA _{1c} (%)	8.59±1.28	5.01± 0.43	<0.01

Table I : Baseline characteristics of study population

	Diabetic patients	Control	P
TC (mg/dl)	209.45± 40.27	197.6 ± 57.13	0.35
HDL-C (mg/dl)	35.15± 10.84	42.9 ± 14.11	0.06
LDL-C (mg/dl)	138.4± 37.15	117.0 ± 49.47	0.13
VLDL-C (mg/dl)	37.4± 12.76	32.2 ± 14.54	0.237
TG (mg/dl)	187.1± 63.45	156.85 ± 76.57	0.18

VLDL-C = VLDL Cholesterol, TG = Triglycerides, TC = Total Cholesterol, HDL-C = HDL Cholesterol, LDL-C = LDL Cholesterol

Table II : Fasting lipid profile of diabetic subjects

	Diabetic patients	Control	P
TC- AUC	836.92 ± 187.81	797.7 ± 218.2	0.546
TG- AUC	1298.08 ± 485.2	922.15 ± 390.47	0.010
HDL-C AUC	130.35 ± 33.55	168.48 ± 56.01	0.013
TC- AUIC	0.88 ± 89.29	19.3 ± 70.83	0.43
TG- AUIC	549.68 ± 382.24	294.75 ± 172.6	0.01
HDL-C AUIC	10.25 ± 22.69	3.13 ± 20.94	0.309
Peak TC	232.45 ± 53.13	210.35 ± 54.31	0.201
Peak TG	425.2 ± 204.47	283.9 ± 116.94	0.01
HDL-C nadir	28.05 ± 10.94	37.15 ± 13.52	0.02

AUC= area under curve (mg/dl/8hours); AUIC= area under incremental curve (mg/dl/8 hours)

Table III: Postprandial lipid profile in diabetic subjects

	Age	Duration	BMI	W/H	HbA _{1c}	FPG	FTG	FI
TG AUC	0.009	-0.075	0.703** P=0.001	0.370	0.120	-0.073	0.624* P=0.011	0.238
Peak TG	0.084	-0.217	0.516	0.163	0.109	-0.100	0.375	0.130

W/H = Waist /Hip Ratio, FPG = Fasting Plasma Glucose, FTG = Fasting Triglycerides, FI = Fasting Insulin

Table IV : Correlations of postprandial hypertriglyceridemia among diabetic subjects

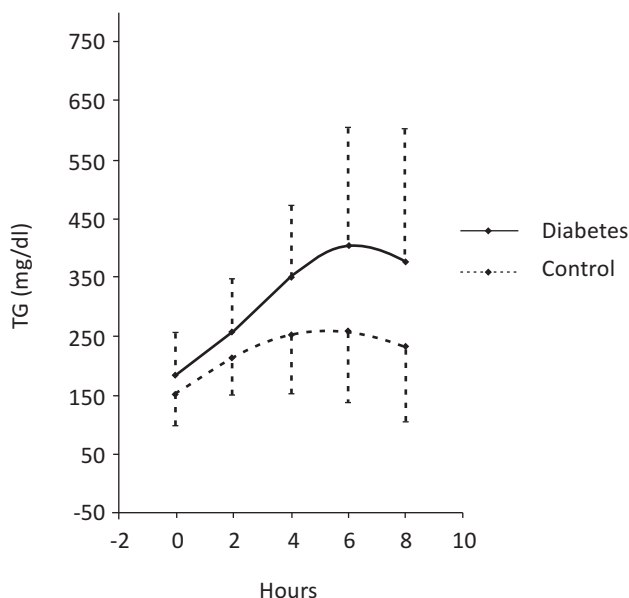


Figure 1: Area under curve for triglycerides following oral fat challenge in patients with type 2 diabetes mellitus.

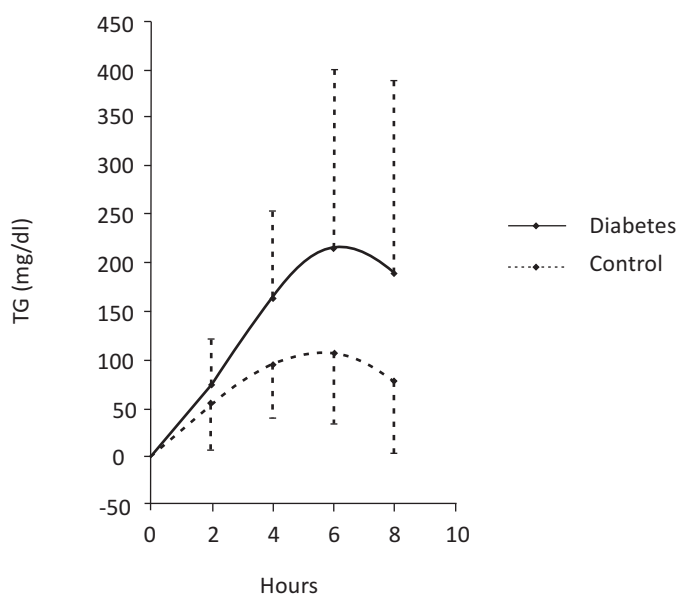


Figure 2 : Area under incremental curve for triglycerides following oral fat challenge in patients with type 2 diabetes mellitus.

DISCUSSION

The present study clearly demonstrates an altered postprandial (PP) response of serum triglycerides (Tg) following oral fat challenge in male type 2 diabetes subjects compared to controls. The PP hypertriglyceridaemia remained significant even after adjusting for fasting Tg levels and was present despite similar fasting Tg levels in diabetic patients and controls. To the best of our knowledge, this is the first report of abnormal postprandial triglyceridaemia among diabetic patients from Nepal and highlights that at least in diabetic subjects, estimating lipids in the postprandial phase may be far more important than in the fasting state.

Exaggerated PP triglyceridaemic responses have been shown in patients with diabetes mellitus by few^{13, 14} while other have failed to demonstrate such a difference¹⁶. However, these responses were observed only in diabetic patients whether obese¹³ or non obese¹⁶ who displayed moderate fasting hypertriglyceridaemia. Once diabetic subjects were matched with controls for fasting Tg levels in addition to age, gender and body mass index then PP hypertriglyceridaemia too was not significantly different¹⁶. In general, the relationship between fasting Tg and postprandial lipaemia in patients with NIDDM was similar to that in non-diabetic individuals¹⁴. PPTg responses significantly correlated with fasting Tg concentration in the diabetic group suggesting higher the fasting Tg Concentration greater was the degree of PP lipaemia¹⁶. Whether it is the fasting Tg level which determines PPTg level in these patients as interpreted by previous workers or it is the magnitude of the PPTg response that determines the fasting Tg level, is not very clear. On the basis of our findings, as well as others it would appear that it is the PP triglyceridemia that determines fasting Tg levels. The postprandial Tg levels peaked at 6-8 hrs after a high fat meal and still remained close to the peak in most patients even after 8 hrs. Fasting Tg levels estimated 12-14 hours after the previous meal would thus represent the Tg value recorded on the down slope of the PPTg response curve 4-6 hours after its peak.

The diabetic state itself appears to be a major factor contributing to the abnormal PPTg response among type 2 diabetic patients as other confounders of altered PP lipid

responses such as age, sex, body mass index and measures of central obesity have been carefully controlled in this study. Earlier studies have reported that postprandial lipid metabolism could be altered by factors such as obesity,¹³ insulin resistance,¹⁵ age¹⁸ and visceral obesity¹⁹. The influence of diabetic state on PP triglyceride metabolism even after controlling for obesity has not been reported earlier. This effect however, seems to be independent of current or previous glycemic control, as we did not find a significant correlation of PP lipaemia with any of the glycemic parameters studied. Obesity also appears to influence PP lipaemia in type 2 DM as high PP triglyceridaemia showed good correlation with body mass index. Thus, it would appear that the magnitude of PP Tg response in type 2 diabetic subjects is largely determined by an interaction of obesity and the underlying diabetic state.

Insulin resistance has been shown to be important in regulating the postprandial concentration of triglycerides and triglycerides rich lipoproteins (TRL)¹⁵. The current study found no correlation of waist/hip ratio, considered to be marker of insulin resistance, with PP lipaemic response parameters. These findings would seem to argue against a major role of insulin resistance in postprandial fat metabolism at least in diabetic subjects.

Several underlying mechanisms have been postulated for the exaggerated PPTg response in diabetes mellitus. Although, this has not been resolved completely, delayed clearance of TRL secondary to decreased LPL activity is believed to be the most important mechanism with some contribution from excessive hepatic Tg production^{20,21}.

CONCLUSION

Male type 2 diabetic patients demonstrate significant postprandial triglyceride abnormalities which appear to be independent of glycemic control.

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Pattern of Sexually Transmitted Infections at Kohalpur Teaching Hospital

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ABSTRACT

Background: WHO estimated that approximately 448 million new cases of four main curable sexually transmitted infections (STIs), viz., gonorrhoea, syphilis, chlamydial infection, and trichomoniasis occur every year, nearly 80% of which in developing countries. STIs has proven role in facilitation of HIV infection and also increases susceptibility to other STIs. Most of the STIs, both ulcerative and non-ulcerative, are prevalent in Nepal and constitute one of the major health problem. Their epidemiological and clinical picture is being modified in the context of ongoing HIV/AIDS epidemic, especially during the last decade. **Objectives:** This study was undertaken to find out the pattern of sexually transmitted infections in Nepalgunj Medical College Teaching Hospital, Kohalpur. **Method and material:** This is a hospital - based descriptive study conducted in the Department of Dermatology, Venereology and Leprology of Nepalgunj Medical College Teaching Hospital, Kohalpur between August 2013 to July 2014. A total of 52 patients were included in the study and verbal consent was taken. History and clinical examinations were performed and the data were recorded and analyzed. **Results:** Total of 52 patients were diagnosed with Sexually Transmitted Infections, out of which 75% were male and 25% were female. The most common diagnosis was gonorrhea (34.6%) followed by condyloma accuminata (32.7%), latent syphilis (15.4%) non-gonococcal urethritis (9.6%), vaginal discharge syndrome (5.8%) and HIV (1%). Age group 21 to 30 years were the maximum sufferers. **Conclusion:** Gonorrhoea still comprises a major bulk of STI in Nepalgunj Medical College Hospital, Kohalpur. Majority of the patients suffering from sexually transmitted infections were in the age group 21-30 years. A trend of sexual exposure during adolescence with multiple partners and inconsistent use of condoms was observed as a common factor in its promotion despite efforts from various sectors.

Key words: Prevalence, sexually transmitted infection

INTRODUCTION

STIs are infections that are spread primarily through person-to-person sexual contact. There are more than 30 different sexually transmissible bacteria, viruses and parasites. According to 2005 WHO estimates, 448 million new cases of curable STIs (syphilis, gonorrhea, chlamydia and trichomoniasis) occur annually throughout the world in adults aged 15-49 years. In developing countries, STIs and their complications rank in the top five disease categories for which adults seek health care¹.

Due to lack of proper reporting system, STI/HIV data are scarce and nonspecific in Nepal. Around 200,000 episodes of STIs are estimated to occur annually in Nepal². The older terminology of 'venereal diseases' (VDs) largely has been superseded in the past 50 years by 'sexually transmitted diseases' (STDs) and more recently by 'sexually transmitted infections' (STIs)³.

Sexually transmitted infection (STI) differs from sexually transmitted disease (STD) in that STD conventionally includes infections resulting in clinical diseases that may involve the genitalia and other parts of the body participating in sexual interaction, e.g., syphilis, gonorrhoea, chancroid, donovanosis, non-gonococcal urethritis, genital warts, herpes genitalis, etc. STI, in addition, includes infections that may not cause clinical disease of genitals but are transmitted by sexual interaction, e.g. all STDs and hepatitis B and C, HIV, HTLV-1, etc. Nowadays, the term STI is preferred, since it covers all the diseases that can be transmitted by sexual intercourse. However, for all practical purposes, both STI and STD are used synonymously⁴.

Despite the availability of effective treatment and preventive measures, STIs are still a major public health issue for both industrialized and developing countries. Recent trend indicates that incidence of STIs is increasing even in developed countries⁶.

The high prevalence of STIs in the developing countries are expected to be due to poverty and migration; change in sexual behavior; having multiple sex partners and sex trade; increased population of adolescents and young adults; substance abuse and peer pressure^{7,8}. The rapid spread of HIV infection in developing countries has been attributed in part to high STI morbidity as a cofactor by enhancing the infectivity of HIV-infected people^{9,10}.

It has been seen that improvement in the management of STIs can reduce the incidence of HIV infection in the general population by about 40%¹¹.

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MATERIAL AND METHOD

This is a Hospital based retrospective study conducted in the Department of Dermatology and Venereology, Nepalgunj Medical College Teaching Hospital Kohalpur. The sample size was 52 patients 75% (39) were male and 25% (13) female. The study group comprised of all the STI patients who presented to the Dermatology Department directly or were referred by other departments from August 2013 to July 2014. A thorough clinical history was elicited. Patients were asked about their symptoms, duration of their symptoms. Clinical examination included general physical examination followed by a meticulous examination of the external genitalia and the anal region. The inguinal region was inspected and palpated for evidence of lymphadenopathy. The number of genital ulcers, their location, size, floor, edges, presence or absence of tenderness, consistency, discharge and vesicles were noted. The external urethral meatus was inspected, in case of discharge; the origin of discharge was noted. If no discharge was immediately apparent, then the urethra was milked out to note any discharge. Female patients were examined in detail in the presence of female assistant. The perineum, vulva, labia majora and labia minora were examined for any discharge, redness, swelling, excoriations, ulcers, warts, and any other skin lesions. If there was any vaginal discharge the colour, consistency and odour of the discharge was noted. The anal and perianal region were also examined. The sexual contact of the patient if available, were examined in an appropriate manner.

Following investigations were carried out:

1. Smears from the urethral discharge and from the genital ulcer was taken on a clean glass slide. The slide was stained with grams stain and examined for the prescence of polymorphonuclear leukocytes and the organisms with their staining characteristics.
2. Swab obtained from urethra/sub preputial groove in male and posterior vaginal fornix in female was dissolved in 10% potassium hydroxide and examined for candida.
3. Hanging drop preparation (wet mount) was done for the vaginal discharge.
4. Venereal Disease Research Laboratory (VDRL) test.
5. TPHA (Treponema Pallidum Hem-agglutination) test.
6. HIV (ELISA) in all the patients under study.

All patients were treated as per the diagnosis and counselled regarding the safe sexual practices and healthy living. Patients were also educated about the disease process and advised to visit the hospital for regular follow up. Patients were encouraged to get their sexual partners to the hospital and get them examined and treated accordingly. All statistical analysis was performed using the microsoft excel 2003 and SPSS 16 software program.

RESULTS

Among the 52 STI patients, 39 were males (75%) and 13 were females (25%) which is shown in figure 1. Highest prevalence was seen among the age group 21-30 years (53.8%) as shown in figure 2. Gonorrhoea (34.6%) was the most common diagnosis followed by condyloma accuminata (32.7%), latent syphilis (15.4%) non-gonococcal urethritis (9.6%), vaginal discharge syndrome (5.8%) and HIV (1%) as shown in figure 3.

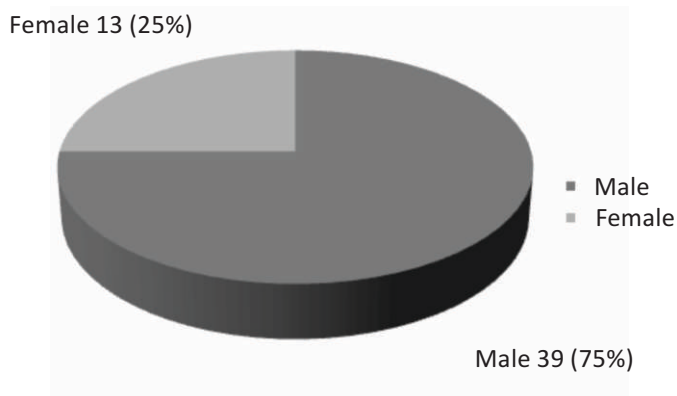


Figure 1: Gender distribution of patients

Age of patient	Frequency	%
10 - 20	4	7.7
21 - 30	28	53.8
31 - 40	14	26.9
41 - 50	4	7.7
51 - 60	2	3.8
Total	52	100

Table I: Age distribution

Diagnosis	Frequency	%
Latent Syphilis	8	15.4
Gonorrhoea	18	34.6
Condyloma Accuminata	17	32.7
Non-gonococcal urethritis	5	9.6
HIV	1	1.9
Vaginal discharge syndrome	3	5.8
Total	52	100.0

Table II: Pattern of STI

DISCUSSION

The global pandemic of HIV has very significantly affected the approach to treatment of sexually transmitted infections, as the most important mode of HIV transmission is heterosexual,

and the sexually transmitted infections play a facilitative role in the acquisition and transmission of HIV¹². Apart from the risks of STIs, STIs are also an important determinant of increased HIV transmission. Incidence of various sexually transmitted infections has fluctuated over past several decades all over the world and shown some interesting long-term trends.

In industrialized countries, the bacterial STI (syphilis, gonorrhoea, chancroid) declined from the peak during the Second World War till up to the late fifties, then increased during the sixties and early seventies, and they have been decreasing again from the late seventies till the present. In the industrialized world, diseases due to Chlamydia trachomatis, genital herpes virus, human papillomaviruses, and human immunodeficiency virus are now more important than the classical bacterial ones; both groups remain major health problems in most developing countries.¹³ The present study was conducted at Nepalgunj Medical College Teaching Hospital Kohalpur.

A total of 52 patients were enrolled in the study from August 2013 to July 2014. Of the total 52 patients who were included in this study, male patients (75%) were more than female patients (25%) which is almost similar to a study done outside Nepal¹⁴ and in Nepal¹⁵. A demographic study done by Aich et al in Nepal also found male preponderance in HIV infection accounting for 86%¹⁶. The male preponderance may be because of increased health seeking behaviour compared to females. The most common age group is between 21-40 years, which is similar to a study done by Banerjee et al¹⁷ and Devi et al¹⁸.

The higher number of patients in this age group 21-40 years is probably due to increased sexual activity. In this study gonorrhea (34.6%) was the most common diagnosis followed by condyloma acuminata (32.7%), latent syphilis (15.4%) non-gonococcal urethritis (9.6%), vaginal discharge syndrome (5.8%) and HIV (1%) which is comparable to the study done by pokhrel D.B¹⁹.

CONCLUSION

The results concluded that bacterial STI (gonorrhoea) was the most common STI in this part of Nepal, however there is also an increase in the Viral STI (condyloma acuminata) which is the second most common diagnosis as shown in this study. The presence of untreated STIs (both those which cause ulcers and those which do not) increase the risk of both acquisition and transmission of HIV by a factor of up to 10. Prompt treatment for STIs is thus important to reduce the risk of HIV infection. Controlling STIs is important for preventing HIV infection, particularly in people with high-risk sexual behaviours.

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Graham Patch Versus Modified Graham Patch in the Management of Perforated Duodenal Ulcer

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ABSTRACT

Introduction: Peptic ulcer perforation is a serious complication which affects 2-10% of peptic ulcer patients. It presents with an overall mortality of 10% although various authors had reported incidence between 1.3% and 20%. Being a life threatening complication of peptic ulcer disease, it needs special attention with prompt resuscitation and appropriate surgical management if morbidity and mortality are to be contained. **Aims and objectives:** To compare outcome and complications in Graham patch and Modified Graham patch repair in perforated duodenal ulcer. **Material and Methods:** A prospective randomized controlled trial was conducted to compare the outcome and complication viz. leakage, obstruction after Graham's patch repair and modified Graham's patch repair undergoing duodenal ulcer perforation in various surgical units of Nepalgunj Medical College Teaching Hospital. Out of these 60 patients; one group (30 cases) underwent Graham's patch repair and another group (30 cases) underwent modified Graham's patch repair. The outcome of procedure was measured in terms of complication like leakage, obstruction and mortality. **Results:** Duodenal ulcer perforation in group A was more common in male; 58(96.66%) patients were male 2 (3.33%) were female (M:F=29:1). The mean age was 46.80(SD 13.9) years. In Group B it was more common in male; 58(96.66%) patients were male 2(3.33%) were female (M:F=29:1). The mean age was 48.60(SD 14.04) years. Incidence of complication was more common in Group B, no statistically significant difference was found between two groups. The incidence of post operative leakage was 1(3.33%) and in Group B were 2(6.70%). The chi square test was used to compute the p value using SPSS 19. The chi square p value was calculated as 0.554. Hence there was no significant difference between the Group A and Group B. The incidence of burst abdomen was same 2(6.70%) in both the groups. **Conclusion:** The analysis of results of present study consisting of altogether 60 patients undergoing duodenal ulcer perforation repair showed that Graham's patch repair is as effective as modified Graham's patch repair in terms of morbidity and mortality. Hence there is no statistically significant difference in undergoing either procedure of repair. It is concluded that either procedure can be undertaken depending upon surgeon preference.

Key words: Burst abdomen, graham patch repair, leakage, modified graham patch repair, omental patch, peptic ulcer disease

INTRODUCTION

Peptic ulcer perforation is a serious complication which affects 2-10% of peptic ulcer patients. Peptic ulcer perforation presents with an overall mortality of 10% although various authors had reported incidence between 1.3% and 20%. Being a life threatening complication of peptic ulcer disease, it needs special attention with prompt resuscitation and appropriate surgical management if morbidity and mortality are to be contained¹⁻⁵.

Perforation occurs when ulcer erodes through full thickness of stomach or duodenum. Perforation is most common complication of peptic ulcer. Bleeding ulcer and use of non steroidal anti inflammatory drugs (NSAID) and/or aspirin have been inextricably linked with perforated peptic ulcer disease

(PUD), especially in the elderly. More than 20% of patients over the age of 60 years presenting with a perforated ulcer are taking NSAIDs at the time of perforation⁶.

The most accepted method of surgical closure of the perforation is called Graham patch repair. In 1937, Roscoe Graham described this method. The perforated ulcer is identified either through the open incision. After laparotomy, packs are placed around the perforation to contain any further spill while the sutures are being placed and then the omental tongue is brought into position. Three or four sutures are used preferably of non absorbable material. If the needle is introduced, with care being taken to avoid the posterior duodenal mucosa and the needle is passed parallel to the anterior wall of duodenum, it is extremely unlikely that the posterior duodenal mucosa or wall would be incorporated into the sutures, which, of course, were it to occurs, would obstruct the duodenum.

Before sutures are tied, the adjacent omentum is brought up to the perforation with the sutures untied and laid out on the anterior surface of the duodenum, and are then successively tied from the superior to inferior side, so as to tampon the perforation with the vascularised omental pedicle graft. Care should be exercised to be sure that the suture are tied

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sufficiently snugly to hold the omentum in place, but the tension exerted by the tied suture on the omentum should be such that the blood supply to the omentum is not impaired. The patch must be a living omental patch, and the omentum should not be strangulated⁷.

This technique was later modified and called as Modified Graham patch repair (MGPR), in which the three or four sutures are placed as described above and are then tied to close the ulcer. The omental patch placed on the tied suture, and another set of knots are tied to hold the omentum in place over the duodenal perforation closure. There is concern that the omentum will not be as intimately applied to the duodenal perforation and may not represent as good a seal as is the case when the omentum is laid directly on the open ulcer bed⁸.

MATERIAL AND METHODS

This is a hospital based prospective comparative study conducted in Nepalgunj Medical College Teaching Hospital in the department of General Surgery from March 2013 to February 2014. All the patients of duodenal ulcer perforation were included except giant duodenal ulcers > 20mm in diameter, posterior duodenal ulcers and sealed duodenal ulcer perforation. Total 60 patients were taken and divided in two groups. Each group consisted of 30 patients. Group A underwent Graham Patch repair and Group B underwent Modified Graham Patch repair. Their outcome were collected in preformed proforma and data so collected were subjected to SPSS 19 for analysis.

RESULTS

Most of the patients fall between 26-70 years of age in both A and B groups being 93.33%. The maximum number of patients in group A were 11(36.7%) found in the age group of 41-55 years. Similarly the maximum number of patients in group B was 12(40%), found in the age group of 41-55 years.

Sex distribution of the patients. In group A there were 29(96.7%) males and 1(3.3%) females. In group B sex distribution was same as group A. In group A it was present in 28(93.3%) patients and absent in only 2(6.7%) patients. In group B it was present in 22(73.3%) patients and absent in 8(26.7%) patients. The p value from chi square test came out to be 0.038 which is significant.

There was 1(3.3%) leakage present in group A whereas there were 2(6.7%) leakage in group B. The p value from chi square test came out to be 0.554 which is not significant. In group A and group B there were 2(6.7%) patients of burst abdomen present in each group. The p value from chi square test came out to be 1.00 which is not significant.

DISCUSSION

In the present study a total of 60 patients were treated for acute perforated duodenal ulcer in our hospital over a period of one year. These were divided into 2 groups. Group A and Group B, each consisted of 30 patients. They underwent Graham patch repair and Modified Graham patch repair respectively.

1. Age: The commonest age at presentation was between 41

Age Group	Group A (n=30)		Group B (n=30)	
	No. of cases	Percent	No. of cases	Percent
< 25 Years	2	6.70	2	6.70
26-40 Years	9	30.0	7	23.30
41-55 Years	11	36.70	12	40.00
56-70 Years	7	23.30	6	20.00
>70 Years	1	3.3	3	10.00
Total	30	100	30	100

Table I: Distribution of patients according to age

Sex	Group A (n=30)		Group B (n=30)	
	No. of cases	Percent	No. of cases	Percent
Male	29	96.70	9	96.70
Female	1	3.30	1	3.30
Total	30	100	30	100

Table II: Distribution of patients according to sex

Presence of pus	Group A (n=30)		Group B (n=30)	
	Frequency	Percent	Frequency	Percent
Present	28	93.3%	22	73.3%
Absent	2	6.70%	8	26.7%

Table III: Distribution of patients according to presence of pus in intraperitoneal cavity

Leakage	Group A (n=30)		Group B (n=30)	
	Frequency	Percent	Frequency	Percent
Present	1	3.30	2	6.70
Absent	29	96.70	28	93.30

Table IV: Distribution of patients according post operative leakage

Burst Abdomen	Group A (n=30)		Group B (n=30)	
	Frequency	Percent	Frequency	Percent
Present	2	6.70	2	6.70
Absent	28	93.30	28	93.30

Table V: Distribution of patients according burst abdomen

to 55 years with a mean age of 46.80 (SD 13.9) years which differs significantly from other reviews from Africa which had an average of 64.80 (SD 11.4) years⁹. Study conducted by Dakubo shows age ranged from 4-87 years with mean age of 40.90¹⁰. Guglieminotti described age varied from 20 to 65 years¹¹. This is consistent with other studies where mean age was 43.4, 35.3 (ranged 14 to 75), 37.53 and 45.49¹²⁻¹⁶ while Mehboob described mean age 31.4 years with peak incidence in 3rd decade¹⁷.

in presentation, delay in surgical intervention, gross peritoneal soilage, septicemia and shock. The delay in surgical intervention, after the patient presents to hospital, is usually due to the time taken to resuscitate these very ill patients. The mortality rate of their study was 16.4% in compared to our study where there was no mortality. This may be explained by the differences in age composition of the patients and other risk factors of perforation. The deaths were due to septicaemia and electrolyte derangements¹⁹.

2. Sex: In each group there were 29 males and 1 female. Male to female ratio was 29:1, 96% were male and 4% were female. Incidence of male was more as compared to study done by Plumer and Ohene in 2004 and 2006 respectively¹⁸. This can be explained on the basis of dietary habits and consumption of alcohol in this part of world.
3. Post operative leakage: Overall post operative complication in Graham patch and Modified Graham patch repair was low. Post operative leakage was 3.3% and 6.7% respectively. The p value from chi square test came out to 0.554 which is not significant. This was similar to the study done by Nuhu et al. in 2009 where only 4 post operative leakages were present in 55 patients undergoing emergency exploratory laparotomy. Besides, the major post operative complications in their study were post operative fever, wound and chest infection. The causes of these complications were multifactorial. These were delay

4. Burst abdomen: Similarly there was 6.7% burst abdomen in both the groups. The p value from chi square test was 1.00 and 0.554 respectively which is not significant. Chalya et al. concluded in a retrospective and prospective study of clinical profile and outcome of surgical treatment of perforated peptic ulcers in Northwestern Tanzania: A tertiary hospital experience. Total 84 patients (n=84) were included who had undergone Emergency Laparotomy with Graham's patch repair with omentopexy for duodenal ulcer perforation. Post operative complications were recorded in 25(29%) patients. Of these surgical sites infection was in 12(48%) patients, post operative pyrexia was in 9(36%) patients, wound dehiscence and burst abdomen was in 5(20%) patients and incisional hernia in 2(8%) patients. Overall complications rate in their series were higher than our series. This difference in complication can be explained by differences in antibiotic

coverage, meticulous preoperative care and proper resuscitation of the patients before operation, improved anaesthesia and somewhat better hospital environment²⁰.

CONCLUSION

The analysis of results of present study consisting of altogether 60 patients undergoing duodenal ulcer perforation repair showed that Graham's patch repair is as effective as modified Graham's patch repair in terms of morbidity and mortality. Hence there is no statistically significant difference in undergoing either procedure of repair. It is concluded that either procedure can be undertaken depending upon surgeon preference.

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Knowledge and Practice Regarding Breastfeeding Among Mothers Attending Immunization Clinic in Nepalgunj Medical College Teaching Hospital

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ABSTRACT

Background: Breastfeeding has been accepted as the most vital intervention for reducing infant mortality and ensuring optimal growth and development of children. The current study aimed to assess the knowledge and practice regarding breastfeeding among mothers attending immunization clinic. **Methods:** A cross sectional study was mothers having children under 1 year of age, who attended their children for vaccination and for the treatment of other minor illnesses. The purposive sampling technique was used for selecting the study subjects. Information regarding patients' demographics, knowledge and practice towards breastfeeding were collected from these mothers on a pre-designed and pretested questionnaire. **Results:** A total of 208 women with children between 6 months and 12 months were included in the study. Their age ranged between 18 and 37 years with the mean of 24.9 ± 4.1 . Overall mother's breastfeeding knowledge was good among 35% and excellent among 22% of them while it was unsatisfactory among 43% of the mothers. Breastfeeding in the first 6 months was practiced by 42% of the participated mothers. Only 23% practiced exclusive breast feeding. Among those who breastfed their babies, 51% initiated breastfeeding in the first hour of birth, 21% between 2-4 hours and only 20% initiated it after 24 hours. Only 73% of mother had not given any prelacteal feeding to their babies. No enough breast milk (47.9%), crying hungry (31.5%), work-related problems (13.7%) & mothers' illness (6.8%) were the commonly reported barriers against exclusive breastfeeding. **Conclusion:** The prevalence of EBF for up to 6 months of age was still low as per WHO recommendations. The mother's perception of "insufficient breast milk" was also the main reason for introducing other foods. Optimal breastfeeding promotion campaigns need to be carried out within the existing health care system such as the antenatal, after delivery and vaccination clinics.

Key words: Breastfeeding, exclusive, prevalence, knowledge, practice

INTRODUCTION

Good infant feeding and healthcare are critical for growth and development of children in the first few years of life¹. Optimal infant feeding practice recommended by World Health Organization (WHO) and United Nations Children's Fund involves early initiation of breastfeeding within 1 hour of birth; exclusive breastfeeding for the first 6 months of life; and the introduction of nutritionally-adequate and safe complementary (solid) foods at 6 months together with continued breastfeeding up to 2 years of age or beyond².

Breastfeeding has been accepted as the most vital intervention for reducing infant mortality and ensuring optimal growth and development of children³. About 800 000 children's lives could be saved every year among children under 5, if all children 0–23 months were optimally breastfed⁴. Breastfeeding is the ideal method suited for the physiological and psychological needs of

an infant⁵. Poor breastfeeding practices are widespread. It is estimated that sub-optimal breastfeeding, especially non-exclusive breastfeeding in the first 6 months of life, results in 1.4 million deaths and 10% of the disease burden in children younger than 5 years of age⁶. Reviews of studies from developing countries show that infants who are not breastfed are 6 to 10 times more likely to die in the first months of life than infants who are breastfed^{7,8}.

The key to successful breastfeeding is Information, Education and Communication strategies aimed at behavior change. For such a promotional campaign to be effective, attitudes and practices of health providers must be improved⁹. Exclusive breastfeeding stands out as the single most effective intervention for child survival¹⁰. Universalizing early (within one hour) and exclusive breastfeeding for 6 months, is viewed as a major public health intervention to reduce the child mortality, particularly, in the neonates and infants^{11,12}.

A study done in Australia found that the level of basic breastfeeding knowledge of Australian midwives was adequate but there are deficits in key areas. They noted that knowledge variations by midwives may contribute to conflicting advice experienced by breast-feeding women¹³.

Factors that are positively associated with breastfeeding at six months included a very strong desire to breastfeed, having

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been breastfed oneself as a baby, and being older. On the other hand, factors that are negatively associated included a woman having no intention to breastfeed for six months or more, baby receiving formula while in hospital, smoking 20 or more cigarettes per day before pregnancy, not attending childbirth education sessions, and having self-reported anxiety or depression which was a problem in the six months after birth¹⁴. Interventions that seek to increase breastfeeding should consider focusing on women who are most at risk of early discontinuation of breastfeeding. Lack of knowledge, non-supportive behaviours and attitudes of maternity nurses, inconsistent advice, and minimal prenatal encouragement to breastfeed have been cited as barriers to breastfeeding¹⁵. Some nurses and physicians are less than supportive of breastfeeding and tend to encourage mothers to supplement with formula or to give up altogether if they experience difficulties with breastfeeding¹⁶.

Another study noted that, across disciplines, inadequate professional support for breastfeeding has been identified in the literature. They also stated that: "The adequacy of health professionals' performance in the promotion of breastfeeding has been questioned repeatedly"¹⁷. Physicians have significant educational needs in the area of breastfeeding management¹⁸. Breastfeeding offers numerous health advantages to children, mothers, families, and society. The American Academy of Pediatrics calls for enthusiastic support and involvement of paediatricians in the promotion and practice of breastfeeding.

The mean total duration of breastfeeding in Nepal, like most other low and middle income countries, is long and usually more than two years¹⁹, but data on EBF up to six months of age as well as continuous breast feeding practices are scarce. Information on breastfeeding practices and the factors influencing them is important for successful campaigns. Hence, we undertook cross-sectional survey in an immunization clinic of tertiary hospital, Kohalpur, Nepal. The current study aimed to assess the knowledge and practice regarding breastfeeding among mothers attending immunization clinic.

MATERIAL AND METHODS

A cross sectional study was carried out in immunization clinic which runs once a week on Nepalgunj Medical College Teaching Hospital, Kohalpur, Banke, Nepal between August 2014 to December 2014. The study subjects were mothers having children aged under 1 year of age, who attended their children for vaccination and for the treatment of other minor illnesses. The purposive sampling technique was used for collecting to select the study subjects. Information regarding patients' demographics, knowledge and practice towards breastfeeding were collected from these mothers on a pre-designed and pretested questionnaire²⁰.

It comprised 3 parts: Sociodemographic characteristics, knowledge about breast feeding and breast feeding practices.

Knowledge on breastfeeding included 38 items, covering the following scopes of knowledge on breastfeeding: general knowledge, colostrum, advantages to mothers and babies, effective feeding method, duration of feeding, complementary feeding, problems with breastfeeding. Each item had categorical responses of yes, no, or do not know. A correct response will be scored as '1', whereas a wrong or do not know response will be scored as '0'. Total knowledge score ranged from 0 to 38, with higher scores indicating more knowledge. Knowledge of mothers whose scores are less than 50% (i.e., <19) were considered as "unsatisfactory", 50% to <75% (i.e., 19-28) as "good", while mothers' knowledge scores 75% or more (i.e., 29-38) were considered as "excellent". Breast feeding practices were assessed with initiation of breastfeeding, colostrum feeding, prelacteal feeding and exclusive breastfeeding upto six months of age or not. Before collecting the information, permission was taken from the institute authority and verbal consent was taken from the respondents. The data was entered in SPSS 17 software package and analyzed.

RESULTS

Baseline characteristics of respondents

A total of 208 women, with children aged between 6 months and 12 months, attending immunization clinic were included in the study. Their sociodemographic characteristics were presented in Table I. Age of the women ranged between 18 and 37 with the mean of 24.9 ± 4.1 . Early marriage was done by 68.3% of them with 38% teenage pregnancy. 40.9% of the respondents came from rural area. Only 70% of the respondents live in their own house. Although 54% of the respondents completed their higher secondary level of education, 3/4th of them were housewife.

Table II depicts the children information. Almost 3/4th of the children were male, 53.4% less than 9 months with 96% hospital delivery.

Breastfeeding Knowledge

Advice regarding breastfeeding was received by almost 73% of the women participated in the study. Table 3 shows that majority of the women (67.3%) were aware of the benefits of breastfeeding for reducing the frequency of diarrhoea. However they had unsatisfactory knowledge regarding other benefits to babies. Regarding benefits to mothers majority 87% were aware that mother who practiced breastfeeding had a low risk of getting breast cancer, prevent breast engorgement (72%), helps achieving pre-pregnancy weight faster. Only 23% were knowing that exclusive breastfeeding is beneficial in spacing birth. It is evident that the knowledge of participated mother regarding colostrums is insufficient except its definition where 72% of them properly answered that it is the mother's early milk which was thick, sticky and yellowish in colour.

Socio demographic Data		Frequency	Percentage
Age(years)	<20	12	5.8
	20-30	181	87
	>30	15	7.2
Mean± SD	24.9 ± 4.1		
Age at marriage (years)	<20	142	68.3
	≥20	66	31.7
Age at first child	<20	79	38
	≥20	129	62
Address	Rural	85	40.9
	Urban	111	53.4
Residence	Own house	145	69.7
	Rent	63	30.3
Living in joint family	Yes	94	45.2
	No	114	54.8
Education	Illiterate	21	10.1
	Primary	17	8.2
	Secondary	56	26.9
	Higher sec and above	114	54.8
Husband's education	Illiterate	2	1
	Primary	27	13
	Secondary	54	26
	Higher sec and above	125	60.1
Occupation	Housewife	158	76
	Governmental	15	7.2
	Private	35	16.8
Husband's occupation	Governmental	39	18.8
	Private	163	73.6
	No work	16	7.7

Table I: Sociodemographic characteristics of respondents (n=208)

Characteristics of data		Frequency	Percentage
Sex	Male	155	74.5
	Female	53	25.5
Age in months	<9	111	53.4
	≥9	97	46.6
Place of delivery	Hospital	199	95.7
	Home	9	4.3

Table II: Characteristics of children (n=208)

Statement	Correct answer	
	n	%
Benefits to babies		
1. Breastfeeding reduces the risk of respiratory infection	102	49.04
2. Breastfeeding increases the baby's intelligence	88	42.31
3. Breastfeeding helps to reduce the incidence of child abuse and neglect	95	45.67
4. Baby who received breastfeeding is less prone to get diarrhea	140	67.31
5. Breast milk provides baby with more protection from allergy compared to formula milk	80	38.46
6. Breastfeeding causes good development of baby's teeth and gum	100	48.08
Benefits to mothers		
1. Exclusive breastfeeding is beneficial in spacing birth	55	26.44
2. Breastfeeding helps to stimulate uterine contraction	70	33.65
3. Mothers who practiced breastfeeding may achieve pre-pregnancy weight faster	120	57.69
4. Frequent breastfeeding may prevent breast engorgement	150	72.12
5. Mother who practiced breastfeeding has a low risk of getting breast cancer	181	87.02
6. Breastfeeding may protect against osteoporosis	77	37.02
Colostrum		
1. Colostrum is the mother's early milk, which is thick, sticky, and yellowish in colour	150	72.12
2. Colostrum is difficult to digest and needs to be discarded	80	38.46
3. Colostrum causes constipation among babies	73	35.10
4. Colostrum is not able to protect babies from jaundice	80	38.46
Effective feeding		
1. Baby will gain weight if they receive effective feeding	122	58.65
2. Correct positioning helps to achieve effective feeding	112	53.85
3. Babies sleep well after they receive adequate breastfeeding	190	91.35
Duration of feeding		
1. Breastfeeding should be initiated within 30 minutes after deliver	155	74.52
2. Breastfeeding should be on demand	160	76.92
3. Baby should be allowed to breastfeed for at least 10-20 minutes for each feeding	79	37.98
4. Breastfeeding should be continued upto 2 years even though the baby has received complementary food	180	86.54
Complementary feeding		0.00
1. Complementary feeding should be introduced at 6months of age	180	86.54
2. Mothers may mix breastfeeding and formula feeding once baby starts taking complementary food	190	91.35
Problems		
1. Breast milk production is influenced by breast size	112	53.85
2. Mothers will inverted nipples cannot breastfeed their babies	130	62.50
3. Breastfeeding must be discontinued if mother has cracked nipple	101	48.56
4. Breastfeeding must be discontinued if baby has jaundice	110	52.88
5. Breastfeeding must be discontinued if mother has breast engorgement	80	38.46
6. Breast engorgement may be reduced with cold packs	120	57.69
Practical aspects	0.00	
1. Exclusive breastfeeding must be practices until infant is 6 months old	190	91.35
2. Massage may reduce breast engorgement	100	48.08
3. Giving water to baby is encouraged after every breastfeeding	120	57.69
4. Belching after feeding shows that the baby is full	190	91.35
5. Babies who get enough feeding will pass urine more frequently	112	53.85
6. Oral thrush frequently happens to babies who breastfeed	95	45.67

Table III: Knowledge regarding breastfeeding among participants (n=208)

In addition, table III shows that knowledge of mothers regarding effective breastfeeding is excellent (91%) regarding babies sleeps well after receiving adequate breastfeeding. Their knowledge is sufficient regarding duration of breastfeeding (ranging from 74.5% to 84.5%) except for the fact that baby should be allowed to breastfeed for at least 10-20 minutes for each feeding. Their knowledge regarding complementary feeding was sufficient as 91.4% recognized that they may mix breastfeeding and formula feeding once baby starts taking complementary food while 86.5% were aware that complementary feeding should be introduced at 6 months of age.

It is evident from table 3 that the mothers' knowledge regarding problems with breastfeeding is insufficient. For example, only 39% answered that breastfeeding must be continued if mother has breast engorgement, 48.5% answered that breastfeeding must be continued if the mother has cracked nipple and 53.9% answered that breast milk production is not influenced by breast size.

As shown in table 3, the knowledge of mothers regarding practical aspects of breastfeeding is sufficient in some of them as exclusive breastfeeding must be practiced until the infant was 6 months old and blenching after feeding showed baby was full (91%), while it was insufficient in other aspects as false beliefs like giving water to baby is encouraged after every breastfeeding (54%), oral thrush was frequent in babies who breastfeed was (46%), massage may reduce breast engorgement (48%).

Figure 1 demonstrates that overall mother's breastfeeding knowledge was good among 35% and excellent among 22% of them while it was unsatisfactory among 43% of the mothers.

Practices regarding breastfeeding

Breastfeeding in the first 6 months was practiced by 42% of the participated mothers. Only 23% practiced exclusive breast feeding. Among those who breastfed their babies, 51% initiated breastfeeding in the first hour of birth, 21% between 2-4 hours and only 20% initiated it after 24 hours. Only 73% of mother had not given any prelacteal feeding to their babies.

Barriers to Exclusive Breast Feeding

As obvious from figure 4, no enough breast milk (47.9%), crying hungry (31.5%), work-related problems (13.7%), mother illness (6.8%) were the commonly reported barriers against exclusive breastfeeding.

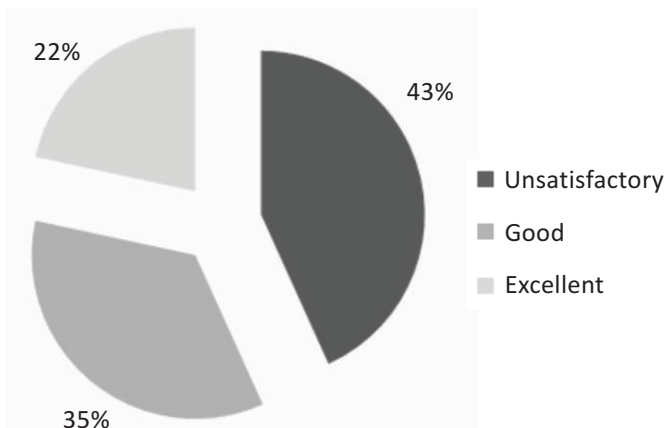


Figure 1: Level of knowledge regarding breastfeeding

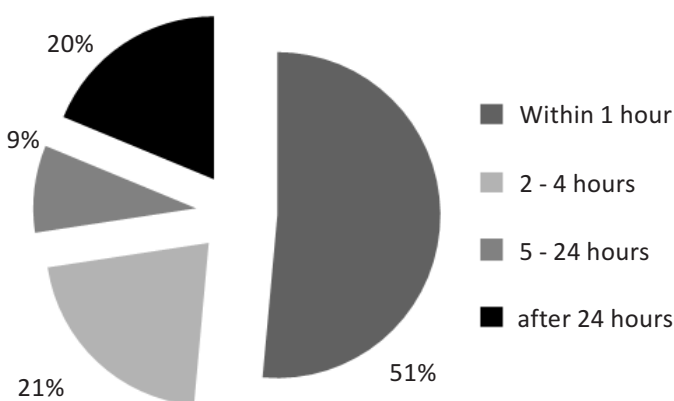


Figure 2: Initiation of breast milk

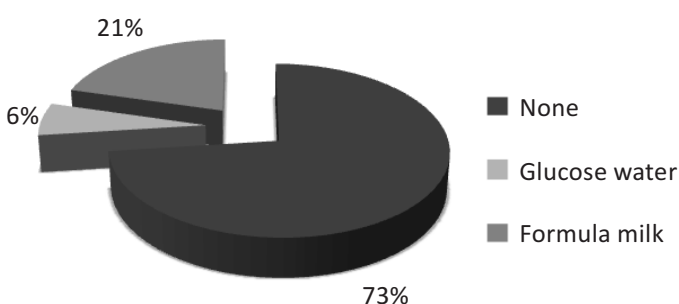


Figure 3: Use of prelacteal feeding

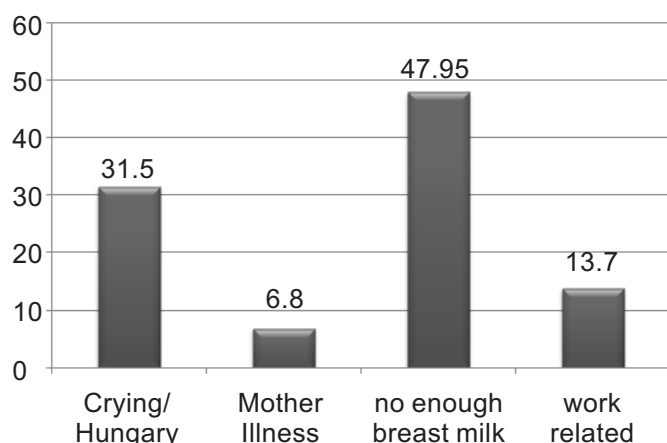


Figure 4: Barriers against exclusive breastfeeding

DISCUSSION

Exclusive breastfeeding for the first 6 months of life improves the growth, health and survival status of newborns²¹ and is one of the most natural and best forms of preventive medicine²². Exclusive breastfeeding plays a pivotal role in determining the optimal health and development of infants, and is associated with a decreased risk for many early-life diseases and conditions, including otitis media, respiratory tract infection, diarrhea and early childhood obesity²³.

Currently the recommendations from the global strategy for infant and young child feeding, developed by the World Health Organization and UNICEF, is that infants should be exclusively breastfed for the first 6 months of life²². Still, less than 40% of infants under 6 months of age in the developing world are exclusively breastfed²⁴.

Despite UNICEF and WHO recommendations, only 53% of children under 6 months of age were exclusively breastfed in Nepal. Median duration of any breastfeeding is about 34 months and exclusive breastfeeding were about 4.2 months²⁵. Though 91% had good knowledge regarding EBF, rate of EBF practice up to six months of age in our study (23%) was substantially lower than the 53% finding in the National Demographic Health Survey (NDHS) in 2006¹⁹. Poverty and ignorance were the main reasons for this practice, which is one of the major causes of malnutrition among infants²⁵. In a study by Chudasma RK et al in Rajkot also showed the prevalence of exclusive breast feeding at 6 months of age of infants was found to be 62%(26).

Foo LL et al reported prevalence rate of 21% which is similar compared to present study²⁷. Whereas the study done by Yadavannavar MC and Shailaja S Patil showed only 13.36% of mothers practiced almost exclusive breast feeding up to 4 months²⁸. This shows despite the demonstrated benefits of breast feeding, breast feeding prevalence and duration in many countries exclusive breast feeding for the first 6 months of life are still lower than the International recommendations of

WHO². But it should also be considered that prevalence of EBF will also depend upon the methods of data collection and definitions used in the study.

Preparation of mothers before they give birth is fundamental to the success of exclusive breastfeeding. However in our study it was seen that only 59% of the women had received any advice on breastfeeding during antenatal period. Similar study done in Pokhara showed only 53% of the women received advice on breastfeeding during ANC visits²⁹. In India advice were received only by 48% of women³⁰. Support and counseling should be available routinely during ante-natal care, to prepare mothers; at the time of birth to help them initiate breastfeeding; and in the postnatal period to ensure that breastfeeding is fully established.

Regarding initiation of breastfeeding 74.5% of mothers had idea on starting breast feeding within ½-1 hr of birth (table III) and in practice only 51% mothers started breast feeding within ½-1hr of birth. Data from 2006 NDHS showed that nearly 1 in 3 children were breast-fed within ½-1hr¹⁹. One study done in Dharan showed only 10% of the mother had knowledge regarding initiation of breastfeeding but 41.5% practice it³¹. According to a study conducted in rural Ghana, it was concluded that if all women initiated breastfeeding within 1 hour of birth, 22% of the infants would be saved from death. In the Indian context, this means that 250,000 neonates can be saved from death annually by just one act of initiation of breastfeeding within 1 hour of birth³². In one study done in India, it was seen that although 92% of the mothers knew the recommendation of initiating breastfeeding within one hour only 36% had actually done it³⁰.

One of the major reasons for the delay in our study was that the child was sick. This could be because of the fact that the study was conducted in a tertiary care institute where mothers whose babies were sick were retained in the hospital for more days and were included in the study. The second reason was that there was delay in shifting from labour room. The other reasons (too tired to sit up and feed, baby was sleeping) only reflected that the mothers were not motivated adequately for initiating breastfeeding within one hour of birth. Hence intensive efforts need to be put for the timely initiation of breastfeeding preferably within the labour room itself if there is delay in shifting and the importance of early initiation of breastfeeding needs to be stressed to the mothers in the antenatal period itself.

The unique nutritional and antibody properties of colostrum and the disadvantages to those infants not fed with colostrum are now well recognized and documented³. In our study, only 38% of the mothers knew that colostrum needs to be given which is very low compared to others studies in India where the importance of colostrum was known to 75- 90% of the mothers^{33,34}.

The mother's perception of "no enough breast milk" is a well-known problem hindering optimal EBF practice in many communities^{35,36}. A key reason, however, why a child could remain hungry is not because breast milk is insufficient but because women do not spend adequate time on breast feeding due to the pressure of house work or are not aware that the milk should be exhausted from one breast before feeding from the second breast³⁷. In our study too, "no enough breast milk" was also the main reason for introducing other foods, especially other milk, semi-solid porridge, before six months of age. A total of 73 (35%) infants were introduced to other foods (semi/solid or animal milk) before six months of age. Of which 48% reported due to insufficient breast milk production. This finding is concordant with another breast feeding study conducted among employed women in periurban areas of Kathmandu³⁸, and a quantitative and qualitative study conducted among 750 young children residing in Far Western district of Baitadi, Nepal³⁹. It is also noteworthy to mention that in our setting, rice is introduced at 5 - 6 months of age with a special ceremony called Pasni, or the rice feeding ceremony, which also seems to interfere with EBF for up to six months of age⁴⁰.

In the present study, several limitations should be considered which depend upon the methods of data collection. Measuring EBF prevalence using recall since birth is difficult and may be inaccurate. This required a long recall period and some women might have forgotten the time when liquids including water or semi-solids were introduced and given wrong accounts, which could be overcome only by a prospective design followed from birth. Moreover this study included only mothers attending for vaccination clinic in tertiary hospital, and the results may not be representative of the whole nation.

CONCLUSIONS

The prevalence of EBF for up to 6 months of age was still low as per WHO recommendations. The mother's perception of "insufficient breast milk" was also the main reason for introducing other foods. Most of the mothers did not receive any information on breast feeding and even hospital delivered babies had a low rate of EBF. So it is advisable to carry out for EBF promotion a strategy by making a guideline for breast feeding education focusing that mother's milk - a life milk' within the existing health care system such as the antenatal, after delivery and vaccination clinics.

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