

ISSN - BIB ID 85528

BMDC Recognized Journal

Jan 2019
Volume 06 Number 01

Journal of Satkhira Medical College



**Official Journal of
Satkhira Medical College Teachers Association
Satkhira, Bangladesh**

JOURNAL OF SATKHIRA MEDICAL COLLEGE

JSMC : Volume 06 No. 01 Jan 2019

Official Journal of Satkhira Medical College Teachers Association

JSMC is published twice in a year in the month of January and July.

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EDITORIAL**Obstructive Sleep Apnea: The 'Sound' Killer****KG Mostafa**

Obstructive sleep apnea (OSA) is an upper airway disorder characterized by multiple interruptions of breathing during sleep manifested mainly as apnea or hypopnea. It is a common disorder worldwide. Overall estimates of disease prevalence of adult OSA are in the range of 10%, with certain subgroups of the population bearing higher risk.[1] United States health authorities estimate that one in every five to ten American adults has some degree of OSA, with many in the population are still undiagnosed. In Bangladesh, the prevalence of sleep-disordered breathing is studied. Among the risk factors for OSA are obesity, being elderly, being male, smoking and having upper airway inflammatory diseases like rhinitis, asthma and pharyngeal reflux. Snoring, with intermittent choking and gasping during sleep is the commonest presentation. The effect of poor quality sleep leads to daytime symptoms such as lethargy, sleepiness, early morning headache and poor concentration leading to increase in road traffic accidents and other potential mishaps. However, the most serious and fatal complication of OSA is its association with cardiovascular-related diseases, such

as hypertension, diabetes, stroke and heart attack. Death from the cardiovascular cause is the most common cause of mortality from OSA, yet this is still not getting enough recognition from many. Studies have proven the causality association; that OSA can lead to cardiovascular diseases like coronary artery diseases, congestive heart failure and stroke.[3] Cardiovascular diseases are the biggest cause of death in the world population. Recently, the death of a Hollywood actress during sleep has sparked the public debate on whether or not OSA is the cause of her death. She has long been diagnosed with OSA prior. We have been getting more evidence in the literature linking OSA with cardiovascular death during sleep. For example a Mayo Clinic study published in the Journal of the American College of Cardiology found that the presence and severity of OSA are associated with a significantly increased risk of sudden cardiac death[4] A specific link to sudden cardiac death was suggested by the finding that death is more likely to occur during usual sleep hours in individuals with OSA, which is the time when sudden cardiac death is least

likely in individuals without OSA and in the general population. [5] People over fifties are more likely to develop OSA, but the effect of the disease is more pronounced in the younger person. A study published in the *European Respiratory Journal* in 2005 showed increasing mortality rates, with younger age in persons with OSA.[6]The study showed that people with OSA in their twenties had 10 times the risk of death compared with people above fifties with OSA. The study also showed declining mortality rates with age. For example, those above sixties with OSA have the same risk of death with people of the same age without OSA. The effect is more significant with the increasing severity of OSA, determined by the increasing number of breathing obstructions that patients experience during sleep. Moreover, persons with severe OSA (more than 30 obstructions per hour of sleep) were eight times more likely to get hypertension than normal people.

There should be more awareness that OSA is a common disease, and the effect of the disease can be fatal if not diagnosed and treated early. The public need to be aware that OSA is part of cardiovascular diseases, and no longer a 'social' disease like it was thought to be before. The perception that OSA only kills when you were involved in road traffic accidents are no more valid, as cardiovascular death from OSA is

the real and significant problem we face now. OSA is a cardiovascular disease and carries the same mortality rate as other cardiovascular disease like hypertension and stroke. The effect is more pronounced in young individuals, thus, it is essential that young patients with OSA are diagnosed and treated early.

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Clinico Pathological Evaluation of Thyroid Nodule

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ABSTRACT:

Introduction: Thyroid tumours demonstrate a wide range of growth and malignant behaviour. One end of the spectrum is papillary adenocarcinoma, which usually occurs in young adults, grows very slowly, and metastasizes through lymphatic system and compatible with long life even in the presence of metastases. **Methodology :** A cross-sectional comparative study was carried out to compare the risk of thyroid malignancy in elderly patients of more than 40 years having nodular goitre, either solitary or multiple. All patients attended Dhaka Medical College Hospital and Bangabandhu Sheikh Mujib Medical University. Physical examination along with some bio-chemical examinations was done. Apart from these, ultrasonography, scintigraphy, fine needle aspiration cytology and histopathological examination were done. **Results :** The study included 54 patients, 13 males and 41 females, yielding a male to female ratio of 1:3 who had one or more thyroid nodules. Half of the patients, 7 males and 20 females, presented with solitary nodule, and other half (6 males and 21 females) came out with multiple nodule. The age of the patients ranged from 41 to 75 years with mean age 47.65 years and standard deviation 6.42 years. 22 multinodular goitre, 4 cystic nodules and 1 nodule with calcification. Most 22 (48.9%) of the nodules were warm in thyroid scan, followed by 20 (44.4%) cold and 3 (6.7%) hot nodules. Fine needle aspiration cytology was done in all cases. The investigation detected malignancy in 21 (40.4%) cases which includes 13 papillary carcinoma, 5 follicular carcinoma, 2 anaplastic carcinoma and only 1 Hurthle cell carcinoma. On histopathological examinations, it was found that among the patients, 53.8% males and 35.9% females had malignant lesion. **Conclusion:** The finding supports the hypothesis for the conclusion that there was higher proportion of thyroid malignancy in males than that in females.

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Introduction

Thyroid tumours demonstrate a wide range of growth and malignant behaviour. One end of the spectrum is papillary adenocarcinoma, which usually occurs in young adults, grows very slowly, and metastasizes through lymphatic system and compatible with long life even in the presence of metastases.[1] At the other extreme there is undifferentiated carcinoma, which appears late in life, is non-encapsulated, invasive and forming large infiltrating tumours composed of small or large anaplastic cells. Most patients with anaplastic thyroid carcinoma succumb as a consequence of local recurrence, pulmonary metastasis or both. Between these two extremes are follicular, Hurthle cell and medullary carcinomas, sarcomas, lymphomas, and metastatic tumours. The prognosis depends on the histological patterns, the age and sex of the patients, the extent of the tumour spread at the time of diagnosis, whether the tumour takes up radioactive iodine and other factors'. But even studies demonstrate that there was no difference in the risk of thyroid malignancy between patients with a solitary thyroid nodule and patients with multi-nodular goitre [2]. The single most important aetiological factor in differentiated thyroid carcinoma particularly papillary, is irradiation of the thyroid under 5 years of age. Short latency aggressive papillary cancer is associated with the *ret/PTC3* oncogene and later developing, possibly less aggressive cancers with *ret/PTC1*. The incidence of the follicular carcinoma is high in endemic goitrous areas, possibly due to TSH stimulation. Malignant lymphomas sometimes develop in autoimmune thyroiditis and the lymphocytic infiltration in the

autoimmune process may be an aetiological factor".

Thyroid nodules are common problem in clinical practice. Thyroid nodules are usually benign; only about 5% of these nodules are malignant and it is important to identify those that are likely to be malignant. The increase in thyroid cancer incidence may be associated with using more intensive diagnostic activities. Although thyroid nodules are usually benign, malignancy must always be ruled out. Several diagnostic techniques and approaches have evolved which attempt to predict the presence of malignancy. It is suggested that performing Fine Needle Aspiration Cytology (FNAC) in all nodules and thyroidectomy is necessary in patients evaluated as malignant or suspicious in cytological examination. Cold nodules have 10-20% probability of malignancy but the incidence of malignancy in hot nodules is about 1% only. [3] Generally the incidence of malignant involvement in multinodular goitre does not differ from that found in solitary nodules. The majority of thyroid cancers are papillary cancers (60%) followed by follicular (20%), anaplastic (10%) and medullary (5%)[4].

Nakhjavani et al conducted a study during 1991-1999 over 558 patients and found that malignancy occurs at higher ages also, though less frequently than non-malignant lesions. Out of these 558 cases 67% were non malignant and the rest were malignant lesions.[5] This picture suggest that thyroid nodules, though seem to be non-malignant in characteristics, may appear malignant on further investigations. So, clinicians must have to be able to distinguish between majority of benign lesions, which require only medical

malignant thyroid nodules, which necessitate extensive surgical treatment.

Thyroid cancer is a relatively uncommon malignancy accounting for 1% - 1.5% of all new cancer cases in the United States, which is tenfold less than that of lung, breast or colorectal cancer. Approximately 8000 - 14000 new cases of thyroid cancers are diagnosed each year. These numbers probably underestimate the exact prevalence of thyroid cancer. Occult thyroid cancers are found in 3% and microscopic cancers are found in at least 10% patients who die from other causes. In other studies up to 35% of thyroid glands removed at autopsy or surgically contained clinically undetectable (<1cm) papillary carcinoma. It is estimated that 4% - 7% of adult in North America have palpable thyroid nodules with the frequency increasing throughout life. Single nodules are approximately four times more common in women than in men. The presence of a thyroid nodule raises the question of malignancy, although fewer than 5% of nodules are actually malignant. The key role of the physician evaluating thyroid nodularity is to determine which patients are at risk of malignancy.

Thyroid nodule in children is a special problem. Although they are less common in children than in adult, whether they are more often malignant is not clear. Perhaps the reported incidence of malignant disease in children with solitary nodules seems to vary historically. The difference may reflect the use of radiation for benign disease. Benign and malignant thyroid nodules are also clinically important in persons of advanced age. Elderly patients have a high incidence of benign nodular disease, but the incidence of thyroid carcinoma does not decline with age.

Undifferentiated carcinoma occurs more commonly in elderly patients, and the role of mortality from thyroid cancer is higher in elderly patients even when undifferentiated cancers are excluded[7]. Fine needle aspiration biopsy should therefore be the initial step in the evaluation of all nodules and enlarging goitres in elderly patients, to ensure their benign nature[7].

Fine needle aspiration biopsy has emerged as a valuable aid in the diagnosis and management of thyroid nodular disease because it is safe and inexpensive and has resulted in better selection of patients for operation. The reported accuracy of cytological analysis with this procedure ranges from very low (50%) to very high (97%), according to the experience among physicians performing the biopsy and among cytopathologists interpreting the aspirate. The problem of obtaining an adequate specimen for proper cytological interpretation decreases with increasing experience, such that satisfactory aspirates may be obtained in 94%-97% of nodules[7].

Detection of thyroid nodules on the basis of history, physical examination, scanning and ultrasonography results in the malignant disease in 10%-20% of surgically excised nodules. Use of FNAC has halved the number of patients who undergo operation and has doubled the incidence of malignant disease detected in surgically excised nodules. For these reasons, it is believed that FNAC should be done routinely as part of the initial evaluation of a nodular goitre [7, 8].

Methodology

The study was a comparative cross-sectional study. The study was conducted for about 12 months. It had started from October 2005 and ended in

September 2006. The study was carried out at the out patient department of Dhaka Medical College Hospital and Bangabandhu Sheikh Mujib Medical University, where the patients came with thyroid swelling. The admitted patients in the said areas for same conditions were followed up for further diagnosis and evaluation. Patients who had nodular goitre were included as study subjects following some criteria. The researcher adopted convenience-sampling technique, the non-probability type of sampling in the study. The researcher could cover a total of 54 patients during the study period. The researcher interviewed the patients physically and examined for necessary objectives. The investigation findings were reviewed also.

An interview schedule was used to conduct face-to-face interview and a checklist was used to take the records of investigations. Collected data were checked for consistency and to remove any minute error. It was in placed in a master sheet before entry into computer. After that the data were entered computer software SPSS. Descriptive and analytic statistics were applied where necessary. For qualitative analysis, χ^2 tests were done and for quantitative analysis, t-test was done.

Results

Total 54 patients were included in the study that opted to participate. Of them, (24.1%) were males and 41 (75.9%) were females. Table 1 shows the frequency distribution of sex of the respondents. The age of the patients mostly concentrated within age group 45-50 years. The age ranged from 41-75 years with overall mean age 47.65 +6.42 years. Cervical lymph nodes of the patients were not palpable in 44 (81.5%) patients. It was

only palpable in 10 (18.5%) patients. 11 males and 33 females had no palpable lymph nodes. Out of 10 patients with palpable cervical lymph nodes, there were 2 males and 8 Females.

Table 1: Distribution of respondents according to their lymph node character

Lymph node	Male	Female	N(%)
Not palpable	11	33	44 (81.5)
Palpable	2	8	10 (18.5)
Total	13	41	54 (100.0)

Isolated nodule of the patients

Among the 54 patients, half of the patients 27 (50%) had single nodular goitre. 7 males and 20 females single nodule. 6 males and 21 females were suffering from multiple nodular goitre.

Assessment of the consistency of the nodules was done. It was found that 35 (64.87%) patients' nodule was firm in consistency. Hard in consistency was in 16 (29.6%) patients, cystic was found in 2 (3.7%) and only one (1.9%) was decided for soft. Out of 35 firm nodules 7 were males and 28 were in females. Out of 16 hard nodules, 5 were males 11 were females. Only 1 female had soft nodule. 1 male and 1 female each had cystic nodule. 46 among 54 respondents underwent ultrasonographic examination. Of them 19 (35.2%) patients had solid nodular goitre, 22 (40.7%) patients had MNG, nodule with calcification found in 1 (2.3%) and cystic nodule were found in 4 (9.1%) cases. Out of 19 solitary nodular goitre. 7 were males and 12 were females. 2 males and 20 females had only 1 male had nodule with calcification and 1 male with 3 females had cystic nodules. This was a significant of sex and nodular goitre as $\chi^2 = 7.321$, $P = 0.0325$.

Among 54 patients, 45 underwent thyroid scan. Of them 22 (48.9%) were suffering from warm nodular goitre, 20 (44.4%) had cold nodules and 3 (6.7%) had hot nodules. 4 males 18 females had warm nodules, 6 males and 14 females had cold nodules, where was 1 male and 2 females has hot nodules. No association was found among thyroid scans result and sex of the patients as $\chi^2 = 1.28$, $p = ns$.

There had been diverse detection or diagnosis through the investigation of Fine aspiration cytology (FNAC), which was done in all patients. 4 males and 23 females had nodular colloid goitre, 3 males and 9 females had papillary carcinoma, 4 males and 5 females had follicular neoplasm, 2 females had anaplastic carcinoma, 1 male and 1 female each had thyroiditis, 1 female had granulomatous lesion and only 1 male had Hurthle cell neoplasm. The distribution of diagnosis among sexes did not become significant statistically because $\chi^2 = 7.87$, $p = ns$.

Among the 54 patients, 52 underwent histopathological examination. Malignant lesions were found in 21 (40.4%) patients and non-malignant lesions were in 31 (59.6%) patients. Table 2 shows the distribution of histopathological differentiation of malignancy and non-malignancy.

Table 2 Distribution of the patients according to their histopathological finding

Histopathology	Frequency	Valid percent
Non malignant	31	59.6
Malignant	21	40.4
Total	52	100.0

Among 52 patients 52 patients 13 (100%) were males of which 7(53.8%) were found lower female malignant, 6 (46.2%) were found to be other than the malignant lesion. Rest 39 (100%) females, of which 14(35.9%) were malignant and 25 (64.1%) were found to be ther than the malignant lesions. It showed that more males were suffering from malignant lesions where as more females were suffering from benign lesions.

Discussion

A Haider A, Amin MN [15] in Bangladesh observed 100 cases during their study period. 80 patients were females giving a female to male ration 4:1. Their age ranged from 14 to 69 years. About 80% of them belonged to age group 20 - 50 years with mean age 33.6 years[15]. The proportion of female patients was more than males in all age group except in the seventh decade where 3 males and 1 female were studied. The ratio of female and male almost corresponds to my study but age group mainly was lower than my age group. Because I purposively collected the age group (> 40 years) according to my hypothesis whereas they conducted study among all age groups for different objectives. Das AB et al evaluated solitary thyroid nodule on 100 cases at BSMMU in 1996. [16] Out of these 100 subjects, 76 were females and 24 were males giving a female male ratio of 3:116. This ratio corresponds to my study finding.

Cervical lymph nodes were examined in all the cases. Most of the patients were found to have non palpable nodes which was 44 (81.5%). Rest 10 had cervical lymph node party. Among the 10, 2 were males and 8 were females. This association had not become significant as $\chi^2 = .596$, $P = \text{not significant}$.

Out of 54 patient half 27 (50%) of the

female to male ration 4:1. Their age ranged from 14 to 69 years. About 80% of them belonged to age group 20 - 50 years with mean age 33.6 years¹⁵. The proportion of female patients was more than males in all age group except in the seventh decade where 3 males and 1 female were studied. The ratio of female and male almost corresponds to my study but age group mainly was lower than my age group. Because I purposively collected the age group (> 40 years) according to my hypothesis whereas they conducted study among all age groups for different objectives. Das AB et al evaluated solitary thyroid nodule on 100 cases at BSMMU in 1996. Out of these 100 subjects, 76 were females and 24 were males giving a female male ratio of 3:116. This ratio corresponds to my study finding.

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Out of 54 patient half 27 (50%) of the patient were suffering from solitary nodular goitre and half 27(50.0%) had multinodulargoitre. Solitary nodular goitre was found among 7 males and 20 females and male: female was 1:3, 6 males and 21 female were suffering from MNG and male: Female was 1:4. So there was no significant difference of goitre between two sexes of sample ($\chi^2 = 0.101$, $P=$ not significant).

Neven M, Irena T and Kusiak Z²² from department of Oncology and Nuclear Medicine, SestraMilosrdnice University, Croatia evaluated the ultrasonographic findings of 406 cases who had one or more

thyroid nodules. They found solitary thyroid nodule (STN) in 117 (29%) patients having a mean nodule size $2.2 + 1.1$ cm and MNG in 289 (71%) with mean nodule size $1.9 + 12.3$ cm. Mean age of the patients with STN was $50 + 15.7$ years, median 50 years with a range between 11 to 81 years. Those of MNG were $56 + 12.5$ years, 56 years and 13 - 86 years respectively. 12 (11%) of STN patients were males and rest were females yielding a male to female ratio of 1:9. On the other hand 17 (6%) males and 282 (94%) females were classified as having MNG (male: female = 1:16). The results do not correspond to this study for the possible reason that their sample size was large (406) compared to the sample size (54) of this study. On the other hand, Paul et al talked about prevalence of more than two-thirds solitary nodules compared to one-third multinodulargoitre. Gupta KL²² contrasted the prevalence of thyroid nodules. He argued that the prevalence of thyroid nodules increases with age. 6-10% of older patients have solitary nodules in contrast with more common multinodulargoitre. This study could have correlated with these findings if it would have taken all age group and large sample size into account.

Afzal K, Muncer K, Shoab S¹⁸ revealed FNAC findings of cold thyroid nodules in July 2005. They examined 48 patients with either STN or MNG who underwent FNAC investigation. The age of the patients ranged between 11 to 60 years and mean age $36.2 + 13.7$ years. 44 (91%) patients were females and 4 (9%) were males. 22 (45.8%) had MNG with a dominant nodule while 26 (44.2%) had STN. The FNAC finding is almost alike to this study.

Among 54 patients, 35 (64.8%) had firm

nodule, 16 (29.6%) had hard nodule, 2 (3.7%) had cystic and only 1 (1.9%) had soft nodule. Out of 35 patients with firm nodule, 7 were males and 28 were females. 5 males and 11 females had hard nodule. One male and one female shared cystic nodule and only one female had soft nodule. There was no significant association among this distribution.

Ultrasonographic findings of the respondents (n=46) show more proportion of MNG, in 22 (40.7%) patients, followed in descending order by solid nodular goitre in 19 (35.2%), cystic nodule in 4 (9.1%) and 1 (2.3%) had nodule with calcification. 20 females and 2 males had MNG while 7 males and 12 females has STN. 1 male and 3 females had cystic nodule and only one male had nodule with calcification. Significant association was found between ultrasonographic findings and sex. It was found that more males had solid nodular goitre than expected while fewer females had STN than expected. On the other hand, fewer males had MNG than expected in contrast with more females having MNG than expected. This association was statistically significant as $\chi^2 = 7.321$, $p=0.0325$.

Maria T, Rojeski and Hossein G7 evaluated nodular thyroid diseases in 1985. They showed that ultrasound classifies nodules as solid, cystic and mixed with an accuracy of more than 90 per cent. This study could classify 4 types of lesions, namely STN, MNG, nodule with calcification and cystic. The finding corresponds to this study. However the study by Maria T et al did not provide any analysis on sex differentials.

Fine needle aspiration cytology (FNAC) was done for all patients. Nodular colloidgoitre was found in 27 (50%), papillary carcinoma in 12 (22.2%),

papillary carcinoma in 12 (22.2%), follicular neoplasm in 9 (16.7%) anaplastic carcinoma and thyroiditis in 2 each while granulomatous and Hurthle cell neoplasm in 1 each was detected. Nodular colloid goitre were found in 4 males and 23 females, 3 males and 9 females had papillary carcinoma, 4 males and 5 females had follicular neoplasm, 2 females had anaplastic, 1 male and 1 female had thyroiditis, 1 female had granulomatous and only 1 male had Hurthle cell neoplasm. There was no significant association among sex of the patients and nodular characteristics as $\chi^2 = 7.87$ and $p =$ not significant.

Neven M, Nina DD, Irena T and Zvonko K20 of Croatia evaluated the findings of FNAC of thyroid gland in 2002. They summarized that the sensitivity of thyroid FNAC ranges from 65% to 99% and its specificity from 72% to 100%. They categorized the FNA lesions into benign, intermediate and malignant. Benign includes benign thyroid nodule, nodular goitre, thyroiditis; intermediate includes follicular neoplasm and Hurthle cell neoplasm; malignant includes papillary carcinoma, follicular carcinoma, medullary carcinoma, neoplastic carcinoma, lymphoma, metastatic carcinoma. They also suggested that no clinical or laboratory test was suggestive and specific enough to distinguish reliably whether a follicular neoplasm identified on FNAC is benign or malignant.

Nakhjavani M, Esteghamati AR, Khalafpour M5 from Iran studied 558 cases of thyroid nodules from 1991 - 1999 of which they examined 278 cases by FNAC before surgery. The results reported were: benign in 135 (48.6%), suspicious in 87 (31.3%), positive for malignant in 24 (8.6%) and non-diagnostic in 32 (11.5%)

cases. The finding almost corresponds to this study finding.

Nakhjavani M, Esteghamati AR, Khalafpour M⁵ performed histopathological examination of operated cases revealing grossly 69.5% benign and 30.5% malignant lesions. The most common histopathological lesion was colloid nodular goitre (59.5%). The present study revealed 59.6% benign lesion and 40.4% malignant lesion, which nearly matches to this study. This study also revealed 51.9% nodular goitre, almost alike with the study done by them. Out of rest malignant lesions of the above study, papillary carcinoma was highest in proportion (70%) followed by 13% follicular carcinoma. In this study there was 61.9% papillary carcinoma out of all carcinoma cases followed by 23.8% follicular carcinoma. These two findings are almost alike.

Bron LP and O'Brien CJ [21] examined 834 patients at Royal Prince Alfred Hospital in Sydney with total thyroidectomy. The histology investigation of the cases detected 763 (91.5%) benign lesions and 71 (8.5%) malignant lesions. Out of the benign lesions, 624 patients had multinodular goitre. Out of malignant lesions, 55 (77.4%) had papillary carcinoma next followed by follicular carcinoma (15.5%). The finding is slightly different from this study.

Conclusion:

From this study it can be concluded that thyroid disorder is not uncommon in our country. The lesion of thyroid can affect at any age of population. The chance malignancy increases as age increases and chance of malignancy is more in males than females. Though more females are suffering from thyroid disorder with 3:1 to 4:1 female to male ratio, the proportion

indicates that increasing age increases the chance of malignancy in males than females. In addition physical examination, haematological or serological examination, ultrasonographic finding, thyroid scan, cytological and histopathological diagnosis should be precisely stratified for detecting and neutralizing individual effect of the variables.

The shortcoming of this study was that the study did not try for assessing sensitivity and specificity of the test procedures, which could have been done for diagnosing the thyroid lesion.

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Association of Vitamin D and Uric Acid with Pre-eclampsia : A Case Control Study

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ABSTRACT:

Introduction: Preeclampsia is a pregnancy specific hypertensive disease with multisystem involvement characterized by new-onset hypertension and new-onset proteinuria usually after 20 weeks of gestation. Despite extensive research the etiology of preeclampsia is still one of the most unresolved mysteries in Obstetrics. **Materials and methods:** It was a case control study where the cases were selected from the pregnant women suffering from preeclampsia who came to Sadar Hospital, Satkhira from January 2018 to December 2018. Control was selected from the pregnant women who came for antenatal checkup in Sadar Hospital, Satkhira in the same time. A total 54 pregnant women were included as case on the basis of inclusion criteria and 45 normotensive pregnant were enrolled as control. Blood sample was collected from all the subjects to estimate serum vitamin D and uric acid level. **Results:** The mean serum vitamin D was significantly lower in preeclamptic women than the control group. The mean value of vitamin-D was 13.6 ± 3.8 for preeclamptic cases and 16.43 ± 5.3 for normotensive pregnant control. And this difference is statistically significant ($p = 0.003$). Mean uric acid level in the cases and control was 4.29 mg/dl and 4.5 mg/dl respectively which was not statistically significant ($p=0.834$). **Conclusion:** Low vitamin D level is associated with preeclampsia but serum uric acid is not associated with it.

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Introduction

Preeclampsia is a potentially life threatening pregnancy complication that usually occurs after first 20 weeks of gestation and short post pregnancy period. According to the preeclampsia foundation around 5-8% of pregnancies are affected by this condition. It is diagnosed by new

onset of hypertension and proteinuria after 20 weeks of gestation [1]. Some women may also experience swelling of feet, ankles, face and hands caused by the fluid retention as well as severe headache, problems with vision and pain just below the ribs. It is the leading cause of maternal and perinatal mortality and morbidity in

the world [2]. It accounts for more than 50,000 maternal deaths worldwide each year [3]. Unfortunately such cases still possess a great problem in developing countries like Bangladesh. In Bangladesh the incidence of preeclampsia is very high and about 10-15% of all deliveries [4].

Vitamin D is a steroid hormone. It comes in two forms: ergocalciferol (Vitamin D₂) present in plants and specific types of fish and cholecalciferol (Vitamin D₃), synthesized in the skin 7-dehydro cholesterol through UV radiation [5]. In the epidermal strata of the skin, production is greatest in the stratum basale (colored red in the illustration) and stratum spinosum (colored light brown). Exposure to sunlight is the most important source, as only few foods contain significant amount of vitamin D. Vitamin D does not have significant biological activity, and before developing functional properties it needs to undergo successive hydroxylation process. The first hydroxylation in the liver, converts calciferol to 25(OH)D (calcidiol), which is the storage form and reflects status (and intake) during the previous month. Hydroxylation to 1,25(OH)₂D (calcitriol) by 1 α -hydroxylase occurs mainly in the kidneys, but during pregnancy the deciduas and placenta play an important role in 1,25(OH)₂D production. 1 α -hydroxylase activity has been described in a wide range of extra-renal tissues and cells, of which macrophages are best characterized [1]. It is tempting to speculate that 1 α -hydroxylase not only fulfils immunosuppressive function in the barrier tissues but also that it may also have a direct impact on barrier integrity [6]. Synthesis of 1,25(OH)₂D by the kidney is tightly regulated, while extra-renal to the major circulating form of

vitamin 25(OH)D rather than 1,25(OH)₂D₃. More accurate assessment of an individual's vitamin D status is determined through measurement of 25(OH)D, which has a half-life of approximately 3 weeks. On the other hand, half-life of 1,25(OH)₂D has only several minutes [1]. Vitamin D is a unique vitamin because, unlike other vitamins which must be obtained from the diet, vitamin D can be synthesized in sufficient amounts when skin is exposed to sunlight [5]. Although humans have the ability to produce the required amount of vitamin D, certain conditions can interfere with its production, and vitamin D deficiency can develop. This is thought to be the case in many countries, as vitamin D deficiency has recently been considered a public health problem of epidemic proportions [5].

It is believed that domination by the T Helper type 2 (Th₂) cytokine response is one of the critical steps required for the maintenance of normal pregnancy. 1,25(OH)₂D has an important role in promoting the shift to a Th₂-dominated immune response pattern during pregnancy. Evidence from in vitro studies indicates that 1,25(OH)₂D inhibits the secretion of Th₁-type cytokines (IL-2, IFN- γ and TNF- α) which induce cell-mediated immunity and increases the secretion of Th₂-type cytokines which induce hormonal mediated immunity [1, 7].

Uric acid (UA) is the end product of purine metabolism; its transformation to allantoin is catalyzed by urate oxidase in most mammals, and it is predominantly cleared by the kidneys [8]. However, mutations in the uricase gene occurred during human evolution, and the levels of serum UA in humans are higher than those

in other mammals [9]. Compelling evidence indicates an intimate relationship between serum UA level and hypertension [10]. Elevated UA can contribute to the development of hypertension through vascular dysfunction and can drive the progression of target organ damages [11]. In addition, serum UA is associated with hypertension in adolescents, prehypertension, and salt sensitivity of BP, which are the early and intermediate stages of essential hypertension [12].

Preeclampsia is taken into account as one of the frequent diseases during pregnancy that could lead to serious outcomes including death. Hence, identification of causative agent for this phenomenon and establishing pathophysiology seems quite vital that might help in taking preventive measures. Under the above perspective the present study was undertaken to explore investigate serum vitamin D and uric acid status in women affected by severe preeclampsia and to explore the association of serum vitamin D and uric acid level with severe preclampsic women who attended the Gynae ward of Satkhira Sadar Hospital.

Materials and methods

It was a case control study where the cases were selected from the pregnant women suffering from preeclampsia who came to Sadar Hospital, Satkhira from January 2018 to December 2018. Control was selected from the pregnant women who came for antenatal checkup in Sadar Hospital, Satkhira at the same time. A total 54 pregnant women were included as case on the basis of inclusion criteria and 45 normotensive pregnant were enrolled as control. Blood sample was collected from all the subjects to estimate serum vitamin D and uric acid level.

Result

It was a case control study where the cases were selected from the pregnant women suffering from preeclampsia who came to Sadar Hospital, Satkhira from January 2018 to December 2018. Control was selected from the pregnant women who came for antenatal checkup in Sadar Hospital, Satkhira in the same time. A total 54 pregnant women were included as case on the basis of inclusion criteria and 45 normotensive pregnant were enrolled as control. Blood sample was collected from all the subjects to estimate serum vitamin D and uric acid level.

Base line characteristics of the study subjects between cases and controls are shown in table 1. There were no statistically significant differences in between two groups in terms of age and BMI reflecting homogeneity of the groups. The table also showed prevalence of preeclampsia in primigravid was 59.3% and that in multigravid was 40.7% but it also yielded statistically insignificant result which also reflected the homogeneity of the groups in this regard. Table 1; Base line characteristics of the study subjects between cases and controls.

Characteristics	Group		p value
	Case (n=54)	Control (n=45)	
Age (years) ^a	25.3±4.0	25.0±4.7	0.674
BMI (kg/m ²) ^a	26.87±3.8	25.6±2.9	0.073
	Gravida^b		
Primi	32 (59.3)	29 (64.4)	
Multi	22 (40.7)	16 (35.6)	
Total	54 (100)	45 (100)	0.597[#]

aValues were expressed in mean±SD.

bValues were expressed in n (%).

Student's t test was done to find out the level of significance.

#Chi-Square test was done to find out the

level of significance.

Comparison of serum vitamin D between cases and controls are shown in table 2 which showed the mean value of serum vitamin D between cases and controls and it was significantly lower in subjects with preeclampsia (cases) than normotensive pregnant controls ($p=0.003$).

Table 2: Comparison of serum vitamin D between cases and controls.

Parameter	Groups		p value
	Case (n=54)	Control (n=45)	
Serum 25(OH)D (ng/ml)	13.6±3.8	16.43±5.3	0.003

Values were expressed in mean±SD.

Student's t test was done to find out the level of significance.

Comparison of serum uric acid between cases and controls are shown in table 3 which showed the mean value of serum uric acid between cases and controls and it showed no statistical significance between cases and controls ($p=0.834$).

Table 3: Comparison of serum uric acid between cases and controls.

Parameter	Groups		p value
	Case (n=54)	Control (n=45)	
Serum uric acid (mg/dl)	4.29±1.5	4.5±0.9	0.834

Discussion

Preeclampsia is a hypertensive disorder of pregnancy complicate up to 10% of pregnancies worldwide, constituting one of the greatest causes of maternal and

perinatal morbidity and mortality worldwide. Preeclampsia is a risk factor for the future cardiovascular disease and metabolic disease in women.

It was a case control study with an objective to find out the association between serum 25 hydroxy vitamin D levels with preeclampsia. A total 99 pregnant women of which 54 preeclamptic were enrolled as cases and 45 normotensive pregnant included as control. Controls were selected matching for maternal age, BMI, gravidity with cases. As these might be potential confounding factors that could the outcome variable 25 hydroxy vitamin D level. Failure to adjust for these variables could result in erroneous conclusion that serum levels of 25 hydroxy vitamin D in preeclampsia were reduced even if in reality they were not. As in normal pregnancy, the measured maternal serum total 25 hydroxy vitamin D level is affected by maternal characteristics (Yu, et al .2013), consequently in comparing levels between normal and pathological pregnancies, it is important to make the appropriate adjustments for these variables.

Serum 25 hydroxy vitamin D deficiency increases with maternal age. In this study, mean age in cases and controls were almost similar($p=0.674$) which eliminated the confounding effect of age on association between vitamin D deficiency and preeclampsia risk. The mean (\pm SD) age was 25.3±4.0 years in cases and 25.0±4.7 years in controls. Halhali et al.(2000) in their cross sectional study had similar mean age like our study in both cases and controls (24.50±5.6 years and 22.70±3.9 years respectively). Pregnant women are a subgroup of young adults at particular risk of low vitamin D status,

because of the additional calcium requirements for fetal development, which leads to an increased physiological requirement for vitamin D to promote calcium absorption.

Preeclampsia occurs with increased frequency among young, nulliparous women. However, the frequency distribution is bimodal, with a second peak occurring in multiparous women >35 years of age (DeCherney, 2013). Relative risk of developing preeclampsia is 2.91, & CI 1.28-6.61 in nulliparous women (Edmonds, 2012). There is no report regarding the relationship between gravidity and vitamin D level. In the present study 52.5% case and 47.5% control were primigravida and 57.9% case and 42.1% were multigravida. The differences was not statistically significant. Robinson et al. (2010), in their study observed 54% cases and 47% controls were primigravida which is similar with the present study.

Islam et al. (2008) examined the vitamin D status of 200 Bangladeshi women who worked in a garment factory, nearly all of the women (>99%) had serum 25 hydroxy vitamin D concentration below the defined optimal range of 75-125 nmol/L, and 16% had levels below 25 nmol/L, indicating vitamin D deficiency. The present study showed 88% of all subjects having serum 25 hydroxy vitamin D below the deficient range of < 20 ng/ml, 10% having vitamin D insufficient range of 21 to 29 ng/ml and 1% with optimum level > 30 ng/ml. But Ullah, et al. (2013) in their study reported more than 3 quarters (78%) of all subjects having a serum 25 hydroxy vitamin D level less than 30 ng/ml. As there is no universal agreement on the optimum level of vitamin D, so it is difficult to compare result of different studies.

In this study, comparison of mean serum 25 hydroxy vitamin D level between preeclamptic and normotensive pregnant subjects showed that serum 25 hydroxy vitamin D level was significantly lower in subjects with preeclampsia in comparison to control. The mean serum 25 hydroxy vitamin D level in preeclamptic case and in normotensive pregnant controls were 13.6 ± 3.8 ng/ml and 16.43 ± 5.3 ng/ml ($p=0.003$) respectively. Ullah et al. (2013) in their study reported that The mean serum 25 hydroxy vitamin D level was 23.96 ng/ml in preeclampsia and 24.86 ng/ml in controls and this difference was statistically significant. Robinson et al (2010) also reported significantly decreased mean value of plasma 25 hydroxy vitamin D. They found mean plasma 25 hydroxy vitamin D was 18 ng/ml in women with preeclampsia and 32 ng/ml in normotensive pregnant control group ($p < .001$) However Seely et al. (1992) found that preeclamptic and normotensive pregnant women had equivalent levels of 25 hydroxy vitamin D. Uric acid, despite being a major antioxidant in the human plasma, both correlates and predicts development of obesity, hypertension, and cardiovascular disease, conditions associated with oxidative stress. The pathogenesis between hyperuricemia and hypertension due to preeclampsia is still unclear (Elsayed et al. 2010). One of the most notable proposed mechanism is hyperuricemia and subsequent increased intracellular uric acid level causes reduction of nitric oxide (NO) (Mayer et al. 2015) which is a potent short lived biomarker. This leads to endothelial dysfunction and atherosclerosis and subsequent hypertension. In 2019, Xiaobo et al. showed that serum uric acid is a predictor

of preeclampsia but in our study we did not find any association of elevated serum uric acid with preeclampsia.

Conclusion

In conclusion, the findings of the present study suggest that, low vitamin D level is associated with preeclampsia but serum uric acid is not associated with it.

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Different aspects of surgical patients with white coat hypertension under general anaesthesia and the clinical associations.

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ABSTRACT:

Background: In many recent researches, white coat hypertension is considered to be associated with long-term risk of cardio-vascular and total mortality in patients with or without antihypertensive treatment, especially in anaesthetic and operative patients. Although, whether white-coat hypertension is an innocent phenomenon is controversial. **Aims and objective:** The ultimate aim is to assess different clinical aspects including cardio-vascular incidence among the surgical patients of white coat hypertension. **Methodology:** This study was a prospective study with 1330 patient of major elective surgery (under general anaesthesia) in Dept. of Anaesthesiology, Satkhira Medical College Hospital, Bangladesh. This was conducted from a period of January 2019 to December 2020. All the patients were examined during pre-anaesthetic check up (PACU). Study population was selected by convenient purposive. **Results:** Among the total 1330 patients, the incidence rate of white coat hypertension was 4.2%. patients found to have white coat hypertension in this research. Majority of patient of white coat hypertension was female (73.2%). The Mean±SD of age was 56±2.1 and 59±2.0 years respectively in male and female patients. 44.6% patients had ASA grade III, whereas, 37.5% had ASA grade II. Average BMI of the patients was 27.8 kg/sqm. Average operating time and duration of anaesthesia were 72 and 81 minutes respectively. Blood pressure was controlled within 1 week in 37.5% (21) patients. However, in 19.6% (11) patients more than 3 weeks were required. No significant variation was found to be associated with haemodynamic parameters of the study population during surgery and postoperative period. Neither any gross change was observed in percentage saturation of Oxygen at different phases of anaesthesia. Hypoxia and atelectasis was found in approximately in 3.5% and 7.1% patients. Hypertension episodes were found in 8.9% patients. Arrhythmia was found in 5.4% patients. Overall mortality was nil. **Conclusion:** White coat hypertension is common in female patient undergoing surgery, most often after 60 years. Perioperative and postoperative hypertensive episodes are common problem. Precaution is essential to prevent complications, especially cardio-respiratory.

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Introduction

White coat hypertension is a condition affecting patients who experience stress or anxiety at a medical setting such as doctor's office or hospital. This results a higher than normal blood pressure reading during their visit. It is called white coat hypertension because the health care professionals who measure your blood pressure usually wear white coats. White coat hypertension is a condition in which patients experience persistent high blood pressure levels when they are measured at a medical office or when a physician is present, but normal blood pressure levels during their daily lives and while in their home environment[1,2]. Some authors use the terms "white coat effect," "white coat hypertension," and "white coat syndrome" interchangeably; others suggest "white coat hypertension" is preferred. According to the 2013 European Society of Hypertension/Society of Cardiology guidelines, white coat hypertension characterizes individuals with office systolic/diastolic blood pressure measurements of 140/90 mmHg or higher on at least three occasions, with normal ambulatory or home blood pressure readings (24-hour ambulatory blood pressure <130/80 mmHg or a home blood pressure reading of 135/85 mmHg)[3,4]. On the other hand, the Eighth Joint National Committee in the United States maintains that hypertension should be treated pharmacologically in those individuals older than 60 years who have systolic / diastolic blood pressure measurements of 150/90 mmHg or higher and those younger than 60 years with systolic / diastolic blood pressure measurements of 140 / 90 mmHg or higher⁵. However, because of the various numerical measurements used to diagnose

white coat hypertension in the past literature, previous research has documented diverse effects on patient care and treatment[2]. The failure to adequately diagnose white coat hypertension with standardized measurements has led to the inappropriate prescription and overuse of antihypertensive medications for individuals who are not persistently hypertensive[6].

White-coat hypertension occurs in 15% to 30% of subjects with an elevated office blood pressure, and the phenomenon is reasonably reproducible[7-9]. Although there are no pathognomonic diagnostic features of white-coat hypertension, this condition occurs more frequently in women, older adults, nonsmokers, recently diagnosed patients with hypertension with a limited number of conventional blood pressure measurements in the office setting who have mild hypertension, pregnant women, and subjects without evidence of target organ damage[7,10,11]. The misdiagnosis of subjects with white-coat hypertension as being truly hypertensive can result in them being penalized for employment and insurance rating, as well as being prescribed unnecessary lifelong treatment with potential side effects that may be seriously debilitating, especially in the elderly. Moreover, failure to identify the condition results in a large expenditure on unnecessary drugs[12,13].

Methods & Materials

This study was conducted as a prospective study with a total number of 1330 cases of major elective surgery checked in Dept. of Anaesthesiology, Satkhira Medical College Hospital, Bangladesh, from a period of January 2019 to December 2020. All the patients were examined during pre-anaesthetic check up (PACU). Surgery

was done under general anaesthesia in all patients. Study population was selected by convenient purposive sampling based on inclusion and exclusion criteria. "European Society of Hypertension/ Society of Cardiology guidelines, 2013" was used as an assessment tool for diagnosis of hypertension. The survey data were usually be analyzed using both analytic as well as descriptive statistic. Such as; mean, SD, percentage etc. Ethical clearance was taken individually from patient and from the ethical review committee of Satkhira Medical College.

Results:

A total 1330 surgical patients, 56 patients were found to have "white coat hypertension" (during PACU). The overall incidence was 4.2%. Age and sex distribution of these 56 patients is shown in table 1.

Age group (Years)	Male			Female		
	n	%	Mean±SD	N	%	Mean±SD
<30	00	00	56±2.1	01	1.8	59±2.0
30-39	00	00		00	00	
40-49	03	5.4		10	17.9	
50-60	05	8.9		12	21.4	
>60	07	12.5		18	32.1	
Total	15	26.8		41	73.2	

Table 1: Age and sex distribution of study population.

Demographic data of the study population is represented in figure 1.

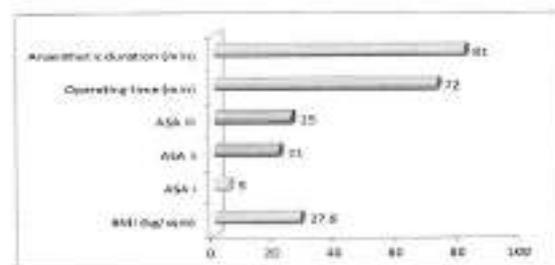


Figure 1: Demographic profile of study population (ASA represents "The American Society of Anesthesiologists" grade).

Time to control the hypertensive episode is depicted in figure 2. Most often, use of pre-emptive analgesia, anti-hypertensive, analgesic and sedative and acclimatization in OT environment etc. played major role to control "white coat hypertension".



Figure 2: Time to control "white coat hypertension".

The haemodynamic status of the patients of the study population (including different phases of anaesthesia) is mentioned in table 2.

Time of measurement	Systolic BP	Diastolic BP	Mean BP	Heart rate
Baseline	130	81	99	74
At 10 th second	131	85	102	80
At 01 st minute	137	82	101	81
At 3 rd minute	133	82	100	77
At 5 th minute	130	79	99	79
At extubation	135	80	100	80
At 4 th hour	133	79	99	76
At 8 th hour	135	78	97	77
At 24 th hour	131	78	99	75
At discharge	134	75	100	76
Mean	134	80	99	78
SD	3.0	2.7	1.4	2.8
(Mean±SD)	134±3.0	80±2.7	99±1.4	78±2.8

Figure 2: Haemodynamic parameters at different phases.

Average percentage saturation of Oxygen at different phases of anaesthesia is depicted in Figure 3.

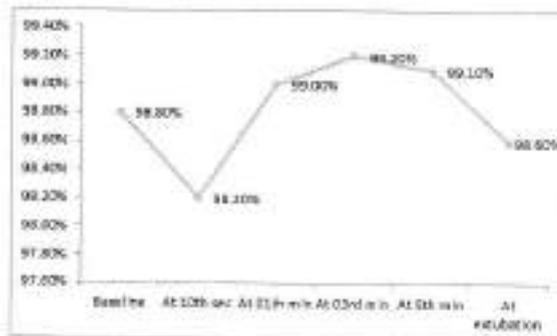


Figure 3: Percentage saturation of Oxygen (%SaO₂) at different phases.

Discussion:

Among the total 1330 patients, 56 (4.2%) patients found to have white coat hypertension in this research. In case of 56 patients with white coat hypertension, majority was female (41 patients, 73.2%). Most of them (18 patients, 32.1% in female and 07 patients, 12.5% in male) were in >60 years of age group. Apparently, with age, the overall incidence gradually increases. The Mean±SD of age was 56±2.1 and 59±2.0 years respectively in male and female patients. White-coat hypertension occurs in 15% to 30% of subjects with an elevated office blood pressure, and the phenomenon is reasonably reproducible, found in a particular study [7-9].

American Society of Anesthesiologists (ASA) grade is used to assess the preoperative fitness and categorizing the co-morbidities of the patients. Demographic profile of the study population suggests that 44.6% (25 patients) patients had ASA grade III, followed by 37.5% (21 patients) had ASA grade II, whereas no patients with ASA grade IV or V was included in this research. Overall BMI of the patients was

27.8 kg/sqm. Average operating time and duration of anaesthesia were 72 and 81 minutes respectively. Among the 56 patients of white coat hypertension, different measures were taken to control the blood pressure. Most often, use of pre-emptive analgesia, anti-hypertensive, analgesic and sedative and acclimatization in OT environment etc. played major role to control "white coat hypertension". In case of 37.5% (21) patients, blood pressure was controlled within 1 week, followed by in 28.6% (16) patients it was controlled in between 1-2 weeks. However, in 19.6% (11) patients more than 3 weeks were required.

Systolic, diastolic, mean pressure and heart rate were recorded at different phases of anaesthesia and in postoperative period. Haemodynamic profile of the study population suggests that (Mean±SD) were 134±3.0, 80±2.7, 99±1.4 and 78±2.8 respectively. Percentage saturation of Oxygen at different phases of anaesthesia has been recorded. Most often, it was within normal limit. The overall incidence of hypoxia and atelectasis was 3.5% and 7.1%. Pulmonary oedema occurred in 1.8% patients. Hypertension episodes were found in 8.9% (05 out of 56) patients. Arrhythmia was found in 5.4% (03) patients. 01 (1.8%) patient developed myocardial ischemia in postoperative period. However, no case of myocardial infarction was found. Overall mortality was nil.

In untreated cohorts, white coat hypertension was associated with a 38% and 20% increased risk of cardio-vascular (CVD) and total mortality compared with normotension, respectively. In the mixed population, white coat hypertension was associated with a 19% and 50% increased risk of CVD and total mortality. However,

in the treated patients, neither the risk of CVD, nor total mortality was increased in WCH. Meta-regression analyses indicated that neither differences of clinic blood pressure, nor out-of-office blood pressure variables were correlated with risk of CVD in white coat hypertension.

Conclusion:

White coat hypertension commonly observed in female individual, most often after 60 years. Perioperative and postoperative hypertensive episodes are common problem. However, risk of other cardio-respiratory complication is relatively less. Preoperative optimization and precaution during surgery is essential to prevent avoidable complications, especially cardio-respiratory.

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Original Article

Assessment of cardiotocography and doppler velocimetry findings for evaluating neonatal outcome at term pregnancy with less fetal movement

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ABSTRACT:

Background: Reduced fetal movement in pregnancy is a common cause of anxiety and admission of pregnant women. It is considered as a high risk pregnancy with the fetus at risk of hypoxia and sudden death. In such condition cardiotocography and doppler velocimetry both can be used for screening and diagnostic purpose respectively. They are diagnostic tools of fetal distress assessment. Both the tools can predict the neonatal outcome. **Objectives:** This study was undertaken to correlate the cardiotocography and doppler velocimetry findings with neonatal outcome in cases with maternal perception of less fetal movement at term pregnancy. **Study Design:** Cross-sectional analytic study. **Study place:** Department of Obstetrics and Gynecology in Sir Salimullah Medical College Mitford Hospital, Dhaka, Bangladesh. **Study Procedure:** Initially all the mothers with less fetal movement were enrolled by purposive convenient sampling. Thereafter, they were scrutinized by eligibility criteria. All the mothers had done cardiotocography and doppler velocimetry reports. A pre-formed structured data collection sheet was prepared which was used to collect data. Data were compiled, edited, managed and analyzed. The results were tabulated in table and figure forms. Data analysis was done by Chi square test. P value was significant at <0.05.

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Introduction

A reduction of fetal movements causes concern and anxiety, both for the mother and the obstetrician. Reduced fetal movement is difficult to interpret because it is a subjective complaint by the mother (Jassawalla;2011). Decreased fetal

movement affects 5 - 15% of pregnancies (Sergent et al. 2005).

Fetal movement count by the mother is an ideal first line screening test both for high and low risk patients. A healthy fetus should have minimum 10 movements in 12 hours' period. Awareness of counting

the frequency of fetal movements is an in-expensive simple task. Fetal Movement counts have been recommended over the past 3 decades to women in the 2nd half of pregnancy, as a way of monitoring fetal well-being (Grant et al. 1989). The majority of women are advised to monitor the fetal wellbeing by movement count. Any reduction of fetal movement's addressed by mother is a common indication for the antenatal fetal wellbeing assessment by cardiotocography and Doppler study (Harrington et al. 1998). Currently there is no universally agreed definition of Less Fetal Movement (LFM). In a study of women with normal uncomplicated pregnancies, 99% of women were able to feel 10 movements within 60 minutes (Tveit et al. 2006). Study have been conducted on the correlation between maternal perception of fetal movements and fetal movements detected on ultrasound scans, showing large variations, with correlation rates ranging from 16-90% (Flenady et al. 2008). This variation in maternal perception may be related to gestational age, amount of amniotic fluid volume, medications, fetal sleep state, obesity, anterior placenta, smoking and nulli parity (Tuffnell DJ et al. 1991). While LFM has been associated with conflicting published perinatal outcomes (Heazell et al. 2005 and O'Sullivan et al. 2009), this symptom constitutes a common reason for unscheduled presentations to maternity units. Maternal perception of gross fetal movement appears to be an accurate reflection of fetal activity (Baskett and Liston 1989). Active fetal movement patterns have been associated with good fetal outcome (Pearson and Weaver 1976) and conversely, LFM suggests the possibility of impending fetal death. Fetal

movements serve as an indirect measure of central nervous system integrity and function. Regular fetal movements are regarded as an expression of fetal well being. Fetal monitoring during labor identifies the fetuses at risk of hypoxic damage, so that appropriate intervention could be instituted to optimize perinatal outcome.

CTG is a special test for evaluation of fetal status. Prof. GS Dows and Prof. C Redman of United Kingdom were two pioneers in the eighties who devised the computer program to evaluate CTG. The basic objective of CTG is to assess co-ordination between the fetal central nervous system (CNS) and the cardiovascular system based on the fact that a well oxygenated healthy fetus with functionally intact CNS - cardiac axis will show accelerations (rise of FHR 15 beats/minute for 15 seconds above baseline) with fetal movements - the so called "reactive CTG". In addition, good fetal heart rate variability (≥ 5 bpm) suggests normal balance of sympathetic-parasympathetic activity, an indirect evidence of adequate oxygenation of fetal regulatory centers; indeed, a normal FHR variability is the hallmark of fetal well-being. Accepted normal parameters for the term fetus are (Pattison N et al. 2010) a) Baseline FHR 110-160 beats/minute, b) Baseline variability should be > 5 beats/minute, c) Presence of two or more accelerations of FHR exceeding 15 beats/minute, sustained for at least 15 seconds in a 20-minute period and d) Absence of deceleration This pattern is termed as "Reactive". Widespread use of electronic fetal monitoring is associated with substantial falls in perinatal mortality being 0.7/1000 compared with 1.8/1000 in auscultation

group. Abnormal cardiotocography is more common in meconium aspiration syndrome (Alok K Ash; 2000). Doppler ultrasound provides a non-invasive method for the study of fetal hemodynamics. Investigation of the uterine and umbilical arteries gives information on the perfusion of the utero-placental and feto-placental circulations, respectively, while doppler studies of selected fetal organs are valuable in detecting the hemodynamic rearrangements that occur in response to fetal hypoxemia.

American College of Gynecology (ACOG)'s Practice Bulletin No. 175: Ultrasound in pregnancy (2016) stated that umbilical artery doppler velocimetry used in conjunction with standard fetal surveillance, such as non-stress tests, biophysical profiles, or both, is associated with improved outcomes in fetuses with fetal growth restriction. Absent or reversed end-diastolic flow in the umbilical artery is associated with an increased risk of perinatal mortality. The rate of perinatal death is reduced by as much as 29% when umbilical artery doppler velocimetry is added to standard antepartum testing in the setting of fetal growth restriction. Doppler velocimetry is recommended as a primary surveillance tool for monitoring these pregnancies. Doppler investigation identifies the fetal cardiovascular response to progressive hypoxia and acidosis and assists in discriminating small but constitutionally normal fetuses from those compromised by placental insufficiency (Maulik, 2017). The main aim of this study was to correlate the findings of cardiotocography and doppler velocimetry for evaluation of term pregnant women presenting with less fetal movement.



Figure-1: Cardiotocography

Materials and Methods

This was a Cross-sectional analytic study conducted in the Department of Obstetrics and Gynecology in Sir Salimullah Medical College Mitford Hospital, Dhaka from September 2017 to August 2018. Sampling method was purposive & convenient sampling. Study population was pregnant lady at term pregnancy with perception of less fetal movement who was admitted in the labor ward for delivery will induct in the study group during the study period. Patients who fulfilled the exclusion and inclusion criteria were requested to participate in the study. Sample size was 262 pregnant lady at term. Statistical analyses were carried out by using the Statistical Package for Social Sciences version 22.0 for Windows (SPSS Inc., Chicago, Illinois, USA).

Results

Majority (35.6%) study population belonged to 21-25 years of age. The mean age was 24.39 ± 3.16 years (age range: 17-38 years). Multiparity (Para 2-4) was common and majority patients were at term. Maximum patients 79(78.2%) had lower middle income group. 66.3%

underwent LUCS, 28.7% underwent NVD, 3% underwent forceps and rest 2% underwent vacuum assisted delivery.

Table-1 Categories of Cardiotocographic findings of the study subjects on admission (n=101)

Cardiotocography on admission	Frequency	Percentage (%)
Normal	59	58.4
Suspicious	30	29.7
Pathological	12	11.9
Total	101	100.0

Table-1 shows that out of 101 mothers, 58.4% had normal CTG while 11.9% patients had abnormal CTG.

Table-2: Categories of doppler velocimetry findings of the study subjects on admission (n=101)

Doppler velocimetry on admission	Frequency	Percentage (%)
Normal (Negative)	90	89.1
Abnormal (Positive)	11	10.9
Total	101	100.0

Table-2 shows that out of 101 mothers with perception of less fetal movement only 10.9% patients had abnormal doppler velocimetry.

Table-3: Association of doppler velocimetry categories with mode of delivery (n=101)

Doppler velocimetry	n	Mode of delivery				P-value
		NVD No. (%)	Forceps No. (%)	Vacuum No. (%)	LUCS No. (%)	
Normal (negative)	90	30(28.9)	1(1.1)	3(2.2)	66(73.8)	0.05
Abnormal (positive)	11	3(27.3)	3(18.2)	0(0.0)	6(54.5)	
Total	101	29(28.7)	3(3.0)	3(2.9)	66(65.3)	

P-value was calculated by chi square test

S: Significant

P-value was significant at <0.05

n- number of patients

Table-3 shows that out of 11 abnormal (positive) Doppler velocimetry findings 6(54.5%) had undergone LUCS followed by 3(27.3%) NVD and 2(18.2%) instrumental deliveries. The p-value showed statistically significant differences (p=0.005).

42(41.58%) neonates had abnormal cardiotocography findings, among these 24(23.76%) neonates had no complication. 11(10.90%) neonates had abnormal Doppler velocimetry findings, among these only 1(0.99%) neonate had no complication. So, neonatal complications were significantly higher in abnormal test findings (p=0.005)

Discussion

In this study, out of 101 mothers the highest 38.6% from 21-25 years' group and 31.7% from 26-30 years. The mean age of the respondents was 24.39±3.16 (age range: 17-38) years. Similarly, Salma et al. (2008) reported 66% of their respondents were from 20-29 years and mean age was 24.37±4.62. Besides, the study results of Kumar et al. (2012) and Khatun et al. (2009) also supported our findings. 57.4% of our respondents had para 2-4. Our study results were supported by the report of Nahar et al. (2008).

In present study all 101(100%) mothers were at term and among them 98% presented at gestational age of 37-40 weeks and rest 2 presented at >40 weeks. Mean gestational age 38.64±2.41 weeks. Our study results were supported by the report of Salma et al. (2008).

In our study maximum patients 79(78.2%) had lower middle-income family. In accordance to Khatun et al. (2009) reported 62% respondents were middle class.

In this study, mode of delivery showed majority (66.3%) underwent LUCS which

was subsequently followed by NVD (28.7%). Interestingly our findings were contrast to the study report of Kumar et al. (2012) where NVD was the highest (60%). It is because of the pattern of their study population who all were not the mothers of LFM. On the contrary, we were dealing with all the LFM mothers selected by purposive sampling. For the same reason, our findings were disagreed by the report of Salma and her colleagues (2008).

Out of 101 mothers with LFM, we have observed 58.4% were normal category, 29.7% were suspicious category and 11.7% were pathological category after utilizing cardiotocography (CTG) as a screening tool. Our report is inconsistent with the findings of Kushtagi P, Narogonis (2002) where they revealed 86.6% of their study population were reassuring (normal), 7.4% were suspicious and 0.6% were ominous (pathological).

In this study, among 101 neonates 23(22.7%) born asphyxiated out of them were normal 8(8.08%), 5(5.05%) suspicious and 10(10.1%) pathological tracing group. Resuscitation required 26(25.7%), required NICU admission 8(7.9%), low birth weight 20(19.8%) and unfortunate fresh still birth were 4(4.0%). So, abnormal tracing group showed significantly higher asphyxiated neonates than normal tracing ($p < 0.001$). These statistics was supported by Choudhury N et al. (2017). Atuk K. Sood (2002) in his study found that there was significant co-relation between APGAR score < 7 , neonatal admission was more commonly associated with non reactive tracings ($P < 0.005$). Similarly, one study reported that abnormal (suspicious & ominous) admission test tracings were associated with increased risk of instrumental vaginal delivery and caesarean section and low 5

min APGAR score. Fawole AO, Sotiloye OS (2008), in their study on antenatal cardiotocography analyzed that low APGAR < 7 occurred most commonly in non reactive tracings ($P = 0.04$) and the reactive test was associated with 3-fold reduction in the incidence of low APGAR compared with non-reactive. They concluded that antenatal cardiotocography can be used in low resource settings for improving perinatal care. Angeles Weintraub (1989) also found a statistical significant correlation between suspicious and ominous tracing and foetal condition at birth (Apgar < 7) ($P = 0.01$). But Kidd LC, Smith R (1985) observed that frequency of intrapartum foetal distress and low APGAR score were similar in both reactive and abnormal tracings groups.

In present study showed 42(41.58%) neonates had abnormal cardiotocography findings, among these 24(23.76%) neonates had no complication. 11(10.90%) neonates had abnormal Doppler velocimetry findings, among these only 1(0.99%) neonate had no complication. So, neonatal complications were significantly higher in abnormal test findings ($p = 0.005$). However, it was not statistically significant on comparing with test results in normal findings ($p = 0.092$). Choudhury et al. (2017) study strongly agreed with our findings, the effectiveness of cardiotocography and doppler velocimetry in evaluating neonatal outcomes with less fetal movement at term pregnancy.

Conclusion

Both abnormal cardiotocography and doppler velocimetry are associated with less fetal movement at term pregnancy. However, doppler velocimetry is more effective in the evaluation of neonatal

outcomes as evident in our study. Thus, cardiotocography can be done as a screening tool at term pregnancy for taking decision of admission in labour ward while doppler velocimetry may be used as a reliable tool to predict neonatal outcomes with less fetal movement.

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Original Article

The effect of sensory stimulation on comatose children.

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ABSTRACT:

Background: Comatose patients have no awareness of environment either externally or internally. Among different causes of coma in children, non-traumatic brain injury accounts for largest population. It is estimated that prevalence of coma children in India is 5% to 10%. Generally, the larger an individual in a coma state, the less likely the individual will recover completely. It has been proved that structured sensory stimulation (visual, auditory, tactile, olfactory & gustatory stimuli) can be effective for earlier recovery from coma.

Methodology: It was a randomized control trial. This study was carried out in department of pediatrics, Dhaka Medical College hospital from November, 2007 to November, 2008. A total 85 (eighty five) children aged 02 months to 12 years having coma due to non-traumatic neurological insult was selected randomly. In study group was 43 patients & 42 patients in control group. Children in study group were given sensory stimulation therapy while those in control group received no sensory stimulation. **Results:** Improvement in the level of consciousness was significantly better in study group as compared to control group after 2 weeks of sensory stimulation therapy ($p < 0.05$).

Conclusion: Sensory stimulation for non-traumatic coma children significantly improves GCS scores & helps earlier recovery from coma.

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Introduction

Coma is a state of unconsciousness with unarousable and unresponsive to self and environment following certain illness or injuries. There is no evidence of sleep/wake cycle or eye opening. Coma is an

acute or sub-acute condition that evolves to the vegetative state (VS) or a higher level of consciousness within 2 to 4 weeks in those who survive.

Consciousness is the integrative activity of nervous system. A wide spread consensus

seems to be emerging that the conscious state involves not some particular piece of cortex but rather integration of many different region. Consciousness is an ambiguous term. It can refer to a) waking state; b) experience; c) possession of any mental state.'

Unconscious patients show significant drop in the functional connectivity between brain areas and suffer from a loss of co- ordination between many regions of the cortex.

The brain also has capacity to use duplicate neuronal pathway in case of existing pathway is damaged. Undamaged neurons send out new connections in attempt to compensate functions of damaged neurons. Thus functions of injured cells can be taken over by surrounding neuronal cells. [1][2][3]

Sensory stimulation programs like visual, auditory, tactile etc can be given by locally available and affordable coma kit. Sensory stimulation acts by increasing environmental stimulation to Reticular Activating System (RAS) of brain. It passes signal through Ascending Reticular Activating System (ARAS) thereby increases performance of neurons. The performance of neurons is directly proportional to environmental stimulation.⁶ When sensory stimulation is given repeatedly, neural pathways being used during unconsciousness are preserved which will increase the chance of functional recovery. Children in coma usually have decreased response to stimuli, but still they are aware of many stimuli. [4][5]

In this study our main objective is to evaluate the effect of sensory stimulation on comatose children

Method: Following inclusion criteria, 85(eighty five) comatose children were

enrolled by purposive sampling technique. Then selected patients were randomized into study and control group by simple random sampling (i.e. random table). The study group received standard care plus sensory stimulation & control group received no stimulation.

Statistical Analysis:First data were edited to the validity and consistency of the data. After proper verification data were coded and entered into computer by using SPSS software programs. Descriptive analysis was done by percentage, mean and standard deviation. Association was observed by appropriate statistical test at 95% confidence interval e.g. Odds ratio, Chi-square, T-test

Result

In table-1 shows age distribution of the patients where male patients were in trial constituted 57(67%) in number & female were 28 (33%). In age group belongs to 2months to 1year were 51 (68%). 1-5 years 21 (25%) &5-12years 13 (15%).

The following table is given below in detail:

Table- 1: Distribution of baseline characteristics of both study & control groups. (N=85)

Age group	Study group (n=43)		Control group (n=42)		Total
	Male	Female	Male	Female	
2 months	17	7	16	11	51
1 to 5 yrs	9	3	7	2	21
5 to 12 yrs	4	3	4	2	13
Total	30	13	27	15	85

Glasgow Coma Scale (GCS) score on admission in study and control groups

where the mean GCS score of both study & control groups were almost similar. The following graph is given below in detail the results also shows Glasgow coma scale (GCS) score on two weeks after admission in Study and Control groups where the mean GCS score improved significantly ($p < 0.05$) in study group (i.e. pyogenic meningitis, encephalitis, tubercular meningitis, cerebral malaria & acute stroke syndrome). The following graph is given below in detail:

GCS score trends on encephalitis where GCS score improved significantly after two weeks of sensory stimulation in encephalitis case. The following figure is given below in detail:

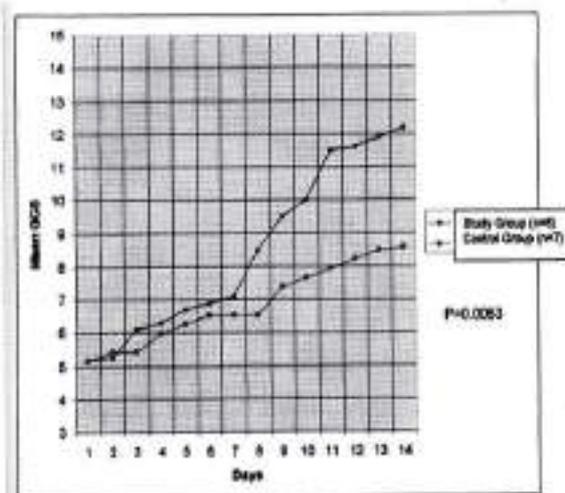


Fig.1. Graph showing the GCS trend in Encephalitis.

Discussion

Coma of any duration disrupts arousal mechanism and interferes with the person's ability to respond environmental stimuli. It is also a common observation that patients in coma receive all types of care - empirical, specific & supportive but hardly anything is done actively to return him to normal consciousness. It is believed that recovery from disease will automatically lead to recovery of consciousness. This does happen but not

always.

The brain of unconscious children has not lost all the function, still it has lot of functioning areas. By selecting a variety of stimuli, these areas can be stimulated. Thus this will make the process of return of consciousness faster. Many patients who have capacity to recover may not recover for want of sensory stimulation. The scientific basis and the therapeutic effect of the stimulation therapy under discussion are controversial. But clinical use of sensory stimulation program in comatose patients has achieved some success.

Although reported improvement in arousal following the implementation of a sensory stimulation program are better results. But the scientific methods & procedures have differed so significantly from study to study that interpretation & generalization of results are difficult.[4][5]

Extensive search of literature was done to find out similar studies of stimulation therapy in comatose patients in whom coma was caused by non-traumatic medical causes. But literature was scant of this topic & most of the studies of stimulation therapy were in coma due to head injury.[5][6][7]

Only Karma & Rawat (2006) conducted a randomized control trial on non-traumatic causes of coma on sixty(60) pediatric patients. Thirty (30) patients were in each in control and study groups. Both groups received similar, specific & supportive treatment according to diagnosis. The patients in study group received sensory stimulation of all 5 senses as soon as their vital parameters became stable. Glasgow Coma Scale (GCS) score showed statistically significant after 2 weeks of stimulation therapy in 23 patients (77%) in study group while GCS score in the

control group remained unchanged. The author noted that interpretation of this study is limited by small sample size & short duration of follow up.[8]

Conclusion

We concluded that stimulation therapy could reduce the duration of non-traumatic coma in children. This type of stimulation therapy can be easily included in the existing clinical practice.

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Surgical Audit of Urological patients admitted in Satkhira Medical College Hospital

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ABSTRACT:

Objectives: Analysis of various patients admitted into Urological unit of Satkhira Medical College Hospital, Satkhira, Bangladesh. **Methods:** This cross sectional retrospective study was conducted from January 1st to December 31st 2019 in the department of Urology, Satkhira Medical College Hospital. All data was collected on a specially designed form. Basic information of patients like demographic characters, management i.e. operative or conservative treatment, the presence of comorbidities, and the outcome of management i.e. discharge, post operative complications and death were recorded. Data was analyzed by using Microsoft XL 2010. **Results:** Total number of admissions during study period was 169, out of these 117 (69.23%) were males and 52 (30.77%) were females. The mean age of the patients was 56.25 years. Transurethral resection of prostate (TURP) was the commonest (22.49%) procedure followed by urethroplasty (11.24). Most of the patients had uneventful recovery. Death rate was only 0.59 % (1/169). **Discussion:** Most of the patients were managed by surgery. TURP was the commonest operation followed by urethroplasty. Similar results were found in most of the literature. **Conclusion:** Surgical audit is needed for proper planning and better outcome of health care system.

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Introduction

The surgical audit is an important strategy to maintain standards in surgical care. This is systematic, critical analysis of the quality of surgical care that is reviewed by

peers against explicit criteria or recognized standards, and then used to further improve surgical practice.

The word audit comes from the Latin word *audire* meaning "to hear" [1]. Clinical

audit is quality improvement process that seeks to improve patient care and outcome through systematic review of care against explicit criteria and the implementation of change. Adapting audit system for the diversified field of surgery makes possible to analyze huge data and identify areas for improvement [2]. It may help in estimation of work burden, sorting of common problems and preparing for their management and improvement in future.

In surgical audit, it is difficult to set standards and apply, so we need to measure the variations in outcome. It is non putative, an educational process aimed at improving the outcome of patients. Locally relevant criteria should be compared to guide local resource allocation, surgical practice and decision making. A good surgeon must never hide his/her faults but should learn from them in order to serve patients and improve practices [3].

In our country, a structured program for clinical audit is not available. It is not a regular practice to conduct surgical audit routinely. Therefore, proper clinical data is not available, which can be reviewed and analyzed in terms of morbidity, mortality and other clinical outcomes.

The aim of this study is to measure outcomes, to improve service and innovation of techniques for the benefit of patients in Satkhira Medical College Hospital, Satkhira, Bangladesh.

Methods:

This cross sectional retrospective study was conducted at Department of Urology in Satkhira Medical College Hospital from January 1st to December 31st 2019. All urological patients were admitted via Resident Surgeon in working days or referred from other disciplines. There are two ultra-clean operation theaters and two

modern operation theaters at the third floor in this hospital and operation days are twice in a week. Demographic data were collected from admission register. Details of the surgical procedures were recorded from Operation Theater (OT) register. All data were compiled in spread sheets and analyzed by Microsoft XL-2010.

Results:

A total number of 169 patients were admitted in Urology unit of Satkhira Medical College Hospital from January 1st to December 31st 2019. Among them, 117 (69.25%) were males and 52 were females (30.77%). The mean age of the patients was 56.25 years. The minimum hospital stay was 2 days and maximum was 14 days. Operative procedure was done in 154 (91.12%) and conservative management was given in 15 (8.88%). Among the operative managements there were Transurethral resection of prostate (TURP) in 22.9% (38), urethroplasty in 11.24% (19), cystoscopy in 10.39% (16), Nephrectomy in 7.14% (11), ureterorenoscopy with intracorporeal pneumatic lithotripsy (URS with ICPL) in 6.49% (10), Transurethral resection of bladder tumor (TURBT) in 2.60% (4); and 39.65% (56) was other procedures. TURP was the commonest procedure (22.49%) followed by urethroplasty (11.24%). A significant number of patients were admitted with diabetes mellitus (DM) 23.08% (39/169), hypertension (HTN) 11.24% (19/169), chronic obstructive pulmonary disease (COPD) 8.90% (15/169), chronic kidney disease (CKD) 7.10% (12/169) and cerebrovascular disease (CVD) was 4.14% (7/169). The post-operative recovery was uneventful except urinary tract infection (UTI) 12.33% (19/154), wound infection 3.90% (6/154) and pulmonary atelectasis 1.95%

(3/154). The mortality was only 0.59% (1/169).

Table I: Data regarding Demography, name of operation, comorbidities and post-operative complications of patients admitted in Satkhira Medical College Hospital from January 1st to December 31st 2019.

1. Total Number of patients	Male	Female
169	117 (69.23%)	52 (30.77%)
2. Procedure	Operative 154 (91.12%)	Conservative 15 (8.88%)
3. Name of operation	Number	Percentage (%)
TURP	38/154	22.49%
Urethroplasty	19/154	11.24%
Cystoscopy	16/154	10.39%
Nephrectomy	11/154	7.14%
URS with ICPL	10/154	6.49%
TURBT	4/154	2.60%
Other operations	56/154	39.65%
4. Major Comorbidities		
DM	39/169	23.08%
HTN	19/169	11.24%
COPD	15/169	8.90%
CKD	12/169	7.10%
CVD	7/169	4.14%
5. Post operative complications		
UTI	19/154	12.33%
Wound infection	6/154	3.90%
Pulmonary atelectasis	3/154	1.95%
6. Mortality	1/169	0.59%

Table showing data regarding Demography, name of operation, comorbidities and post-operative complications of patients admitted in Satkhira Medical College Hospital from

January 1st to December 31st 2019.

Discussion:

The surgical audit has become an important part of modern urological practice and integral requirement for the surgeons for continuing professional development. In our study, a total number of 169 patients were admitted in our hospital. This is higher than Waker SH. et al [4]. There was male predominance (69.23%); a slightly higher than Skaikh M. et al (56%) [5]. The mean age of the patients was 56.25 years and this finding is higher than the study done by Jawid M. et al [6]. The cause of disparity is due to most patients with prostatic enlargement and bladder tumor belong to older age group. TURP operation was the principal operation in our study; similar to almost all other studies. Qureshi et al [7] and Bhatti et al [8] reported urethroplasty was their main operation. This disparity is due to case selection from paediatric age group. The co-morbid diseases were higher in the study by Waqar et al. One (01) patient died in this study due to electrolyte imbalance from hyponatremia due to fluid overload. The mortality rates was (0.59%) (1/169) which was lower than other study.

Conclusion:

The proper structural surgical audit is needed for a good urological practice. Knowledge of the current pattern of admissions, disease spectrum, surgical expertise, modern instruments and health care resources will be beneficial for both the clinicians and patients. Accident and emergency department should be established for knowledge regarding urological casualty and further development.

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Ultra Sonic Evaluation of Thyroid Nodules in Satkhira Medical College Hospital

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ABSTRACT:

Introduction: Thyroid nodules are common in adults, with a reported prevalence of up to 50%. Furthermore, 9% to 15% of nodules identified during clinical examinations are diagnosed as malignant. It is generally accepted that sonography and sonographically guided fine - needle aspiration cytologic examination are the modalities of choice for differentiating benign and malignant thyroid nodules. Thyroid ultrasonography (USG) is the major diagnostic modality for evaluating thyroid nodules. Using USG, a thyroid nodule appears as a nodular lesion within the thyroid gland that is distinguishable from the adjacent parenchyma. Several USG features, such as marked hypoechogenicity, irregular margin, micro calcifications, and a taller - than - wide shape have been introduced as potential predictors for the presence of thyroid malignancies. **Aims & Objectives :** The aim of this study was to assess the accuracy of USG diagnosis for thyroid nodules. **Materials & Method:** The present study was conducted in the Department of Radiology & Imaging, Satkhira Medical College Hospital, Bangladesh. Patients under the study were referred from department of ENT, Surgery, Paediatrics, Medicine, ENT, Gynaecology and Obstetrics from January 2017 to January 2019. Patients for the study were evaluated by Clinical & Radiological examination. The total number of patients were 120. **Results:** On clinical examination, multiple nodules were found only in 17% of cases, whereas on USG, multiple nodules were found in 58%. 50% of clinically solitary nodules were demonstrated to be multiple on USG. **Conclusion:** In conclusion, similar to the recent literature reviewed so far, for a large majority of patients, diagnosis changed after ultrasonography, so the results necessitate the use of ultrasonography, which is a non invasive method, as a complementary method to physical examination in the diagnosis of thyroid diseases, especially thyroid nodules.

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Introduction

Thyroid nodules come to clinical attention when noted by the patient, as an incidental finding during routine physical examination, or during a radiologic procedure. Thyroid nodules are common in adults, with a reported prevalence of up to 50%. [1–5]. Furthermore, 9% to 15% of nodules identified during clinical examinations are diagnosed as malignant [6–8].

Nodules are more common in iodine-deficient areas, in women, and with aging. Women are two to three times as likely to develop radiation-induced thyroid nodules as compared to men [9-10]. Palpation is insensitive for detection of thyroid nodules, as shown by a study in which up to half of patients with normal neck examinations were found to have nodules when imaged with ultrasonography [11]. Most palpable nodules are >1 cm in diameter, but the ability to feel a nodule is influenced by its location within the gland (superficial versus deeply embedded), the anatomy of the patient's neck, and the experience of the examiner. Non palpable nodules have the same risk of malignancy as have a greater potential to be clinically significant. Occasionally, there may be nodules <1 cm that require evaluation because of suspicious US findings, associated lymphadenopathy, a history of head and neck irradiation, or a history of thyroid cancer in one or more first-degree relatives. Following initial evaluation, the use of selected radiographic studies can be helpful in managing thyroid masses. Thyroid ultrasound (US) is the major diagnostic modality for evaluating thyroid nodules. It is noninvasive, may be more readily available than the FNAB in a primary care setting, and provides information that may suggest malignancy or benign. High-resolution thyroid US is the most useful diagnostic tool for evaluating thyroid nodules. Many studies report variability in the diagnostic accuracy or a considerable overlap in the appearance for distinction between benign and malignant thyroid nodules. The evaluation of a thyroid nodule is stressful for most patients. They are concerned about the possibility of thyroid

cancer. It is constructive, therefore, to review the diagnostic approach and to reassure patients when no malignancy is found. When a suspicious lesion or thyroid nodule is identified, an explanation of the generally favorable prognosis and available treatment options should be provided. The prevalence of cancer is higher in several groups: Children, Adults less than 30 years or over 60 years old, Patients with a history of head and neck irradiation Patients with a family history of thyroid cancer The aim of this study is to assess the accuracy of US diagnosis for benign and malignant solid thyroid nodules.

Material & Methods:

Clinical material (patients/subjects) made available in this study is the result of continuous referral of patients (for more than last two years, January 2017 to January 2019) in the department of Radio-diagnosis for radiological evaluation by faculty members of department of Surgery, Paediatrics, Medicine, ENT, Gynaecology and Obstetrics in Satkhira Medical College & Hospital on 120 patients.

Every patient examined in this study gave his/her consent. In case of minor consent from guardians was taken. Institutional Ethical and research committee approval was taken prior to start the study. Female subjects were examined in presence of female nursing staff and one female attendant. A detailed clinical history was taken from all the cases and thorough general physical & local examination was carried out. Relevant laboratory investigations were done.

Results:

In this study total no of cases was 120. male patient was 50(41%), Female patient was 70 (69%). maximum age group was in 21 to 40 years. Solitary nodule on clinical palpation was 100(83%), and multiple 20(17%), on histological findings benign diseases 80(66.6%) and thyroid Malignancy was 40(33.3%)

No of nodule	On clinical palpation	On USG
Solitary nodules	100(83%)	50 (42%)
Multiple nodules	20(17%)	70(58%)

Table 1: Detection of Thyroid nodules Clinically & Sonologically

Nature of the lesion	No of case
Consistency	
Solid	20(29%)
Mixed	40(57%)
Predominantly Cystic	10(14%)
Ecchogenecity	
Hypoechoic	30(43%)
Heteroechoic	40(57%)
Halo	
Thin, complete, regular	40(57%)
Thick, incompleteir, regular	20(29%)
Absent	10(14%)
Calcification	
Coarse	50(71%)
Micro	10(14%)

Table -2 USG findings for thyroid nodules.

Discussion : Fundamental to evaluation of the thyroid nodule is differentiating medical from surgical disease. Although not mutually exclusive, five categories of thyroid nodules classify this broad spectrum of pathology — hyperplastic, colloid, cystic (containing fluid), inflammatory, and neoplastic, [12] with the last being the most feared. Due to anatomic factors, approximately 90% of all thyroid nodules are not palpable [2, 4]. An earlier perception that solitary nodules are more likely malignant than a nodule within a goiter is now replaced with a general acceptance that the risk of cancer is similar in patients with solitary or multiple nodules [7, 13, 14].

Evaluating the thyroid nodule is an involved process that begins with taking a history, performing the physical examination, and then choosing appropriate additional tests. Ultrasound (US) and computed tomography

(CT) are two noninvasive techniques which are widely used in the evaluation of solid and cystic neck masses. The role of sonography in the neck region has become increasingly important with the advent of high frequency probes. Specifically, thyroid ultrasound (US) is an invaluable instrument in evaluating thyroid nodular disease. It is non invasive, may be more readily available than the FNAB in a primary care setting. The exquisite sensitivity of sonography often leads to the discovery of non palpable thyroid nodules during routine sonography of head and neck and these lesions are colloquially termed "incidentalomas". The incidentally discovered nodules in this case were less than 1 cm in diameter and appeared benign in nature. Similar observations have been made by . The age range of patients was 7-72 years in this study. A female preponderance was noted in patients as male to female sex ratio was 1: 1.4. Similar female preponderance was seen (83.3%) patients were clinically found have solitary nodules. However US revealed only five (50%) cases to be solitary. On Ultrasonographic study the thyroid nodules showed heterogeneous echo-texture in two thirds (66%) of the cases with both solid and cystic components. The cystic degeneration was seen as irregular anechoic areas. A complete, well defined, halo could be seen in (40%) cases. There were (58%) cases showing multi-nodular thyroid disease. Majority of the cases (57%) exhibited a heterogeneous echotexture with areas of cystic change and calcification. The peripheral halo was seen as a rim in 57% of cases. 29% of cases showed incomplete rims. A distinct margin was absent in 14% of cases. Differentiation between adenomatous nodules of a multi-nodular goiter and true adenomas can be difficult on imaging and pathologically as well . Forty cases of thyroid masses were found to be malignant in the present study. Thirty cases were of follicular carcinoma and ten of medullary carcinoma. Malignancies represented 25% of all thyroid masses. Peak incidence of thyroid malignancy has been described in the 3rd and 4th decades. Of the thirty adults cases, twenty were females and ten male. A female

preponderance of thyroid malignancy is known [8]. Microcalcification could be appreciated in ten cases. Twenty cases exhibited coarse calcifications. In our study features commonly associated with malignant disease were hypoechogenicity, incomplete irregular haloes, ill defined margins, micro-calcifications, invasion of surrounding structure and presence of cervical metastasis. Our findings were similar to those of Sonography is the best known diagnostic tool for evaluation of thyroid nodules, and many suspicious sonographic findings predictive of the presence of a malignant thyroid nodule, such as microcalcification, marked hypoechogenicity, an irregular margin, a taller-than-wide shape, and macrocalcification, are well recognized [6]. Thyroid ultrasound (US) is the major diagnostic modality for evaluating thyroid nodules. Using US, a thyroid nodule appears as a nodular lesion within the thyroid gland that is distinguishable from the adjacent parenchyma. Ultrasonography is an ideal technique for establishing whether a palpable cervical mass is within or adjacent to the thyroid and for differentiating thyroid nodules from other neck masses. In addition, thyroid ultrasonography is particularly useful for measuring the size of the nodule and calculating the volume. Different formulas have been used for calculation of volume from the measured dimensions. Results also indicate that physical examination (a) works reasonably well for the detection of nodules in the isthmus of the thyroid but not for the far more common nodules lying deeper within the glands and (b) is an unreliable method for distinguishing solitary and multiple nodules.[9]

Conclusion: Clinical evaluation and epidemiologic studies of nodular thyroid disease stand to benefit from the greater sensitivity and specificity of ultrasonographic examination.

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Knowledge about the use of Contraceptive Methods in Rural Areas of Satkhira

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ABSTRACT:

Back ground: Bangladesh is a country having high density of population in the world. Its fertility rate ranges from 4.1 to 5.49 and life expectancy is 68 years while the total fertility rate of Asia is 2.2 and life expectancy 70 years. **Methodology:** This descriptive type of cross sectional survey was carried out among 100 married women of reproductive age, March 2017 at the village Narayanpur of Kaligonj Upazila, Satkhira. **Results:** Among 100 women of reproductive age group (15-49 years), 30% respondents were in the age group 20-24 years. The socio-demographic characteristics - more than 50% respondents were middle class. Age at marriage below 18 years is 76% ,40 have 3 child , among them 71 % have neuclear family. 63% have knowledge about Family planning. Most common Family planning method is oral contraceptive pill 77%, 54% get the family planing materials from govt supply, 59% have knowledge about side effect of contraception, 81% have no experience of religious constrain. **Conclusion:** Desire for larger family, marriage at early age, religious concerns and fear of side effects were the main factors responsible for non users. Religious scholars must play their role in clarifying many aspects regarding contraceptives.

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Introduction

A contraceptive method is one which helps the women to avoid unwanted pregnancy resulting from coitus. There are many methods of contraception. Each has got its own merits and demerits. An ideal contraceptive method is

one which is safe, effective acceptable, inexpensive, reliable, reversible, simple, long lasting, independent of coitus and requires less medical supervision. A method suitable for one group may not be suitable for another group because of different cultural

background, religious beliefs and socio-economic status. Thus there can never be an ideal contraceptive method [1]. Of the world population, 75% live in developing countries characterized by high fertility rates, high maternal and infant mortality and low life expectancy[2]. In the developing world, 1/3rd of all healthy adult women are lost due to reproductive health problem[3]. Female population is about 60.26 million in Bangladesh and married women of reproductive age group constitute 51.7% of all total female population[4]. More than 5,00,000 women die every year due to pregnancy related complications in the developing world[5]. Although the average age at marriage is 18 years for females and 27 years for males, rural females tends to marry even earlier[5]. Approximately 75% of the girls are married before the age of 16 and only 5% are married after 18 years which is the legal age of marriage for females in Bangladesh[6]. Like early marriage, early pregnancy is common in Bangladesh. The adolescent fertility rate in the country is one of the highest in the world with 147 birth per 1000 women age <20 years.[7]

Methodology:

This descriptive cross sectional study was conducted during the period of March 2017 to assess the contraceptive practice among the married women in Narayanpur village of Kaligonj Upazila, Satkhira. The respondents were married women of reproductive age were selected purposively on the basis of selection criteria from rural households of Kaligonj Upazila, Satkhira. Descriptive statistics were run based on respondent's socio-demographic characteristics, reproductive health problems and contraceptive practices. Data were analyzed by windows MS excel.

Results: Among 100 women of reproductive age group (15-49 years), 30% respondents were in the age group 20-24 years. The socio-demographic characteristics - more than 50% respondents were middle class. Age at marriage below 18 years is 76% ,40 have 3 child , among them 71 % have neuclear family. 63% have knowledge about Family

method is oral contraceptive pill 77%, 54% get the family planing materials from govt supply, 59% have knowledge about side effect of contraception, 81% have no experience of religious constrain.

Table1. Level of education n=100

Level of education	Number
Illiterate	17
Primary	31
Secondary	29
Higher secondary	16
Bachelor and above	07

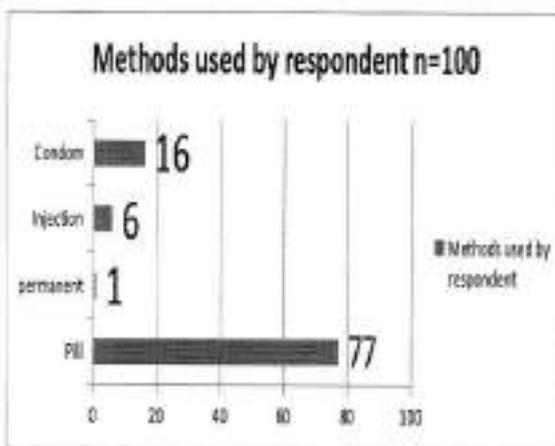


Figure1. Distribution of the respondent by methods of use

Discussion

Child birth is the leading cause of death among women of reproductive age as one in five women of reproductive age die due to child birth related complications.[3] In spite of the fact that more than 3000 family planning centers are working in the country, population growth rate is still 1.56% According to Bangladesh Demographic and Health Survey, maternal mortality can be reduced by 36% if CPR goes up to 55%.[4] Despite almost 3 folds increase in contraceptive use since last 20years, 25% of the currently married women have an unmet need of family planning services.[8-9] Among 100 women of reproductive age group (15-49 years), 30% respondents were in the age group 20-24 years. The socio-demographic characteristics -

50% respondents were middle class. Age at marriage below 18 years is 76% ,40 have 3 child among them 71 % have nuclear family. 63% have knowledge about Family planning. Most common Family planning method is oral contraceptive pill. 54% get the family planning methods from Govt. supply, 59% have knowledge about side effect of contraception, 81% have no experience of religious constrain. Mean age at marriage in our study about 17, 18years. Same has been reported by PDHS3. Contraceptive use is less in our study supporting the work of others .Commonly used contraceptives were OCP, Injectable which is different from the work of seema at el [7] while supported the work of Solomon Avidime et al.The 3rd major side effects after menstrual irregularities and weight changes was the feeling of guilt with the use of contraceptives which reflects their religious opinion regarding contraception. Learned and authentic scholars should play their role to clarify the minds, reflecting the culture, historical background and typical male dominant society of Bangladesh

Conclusion:

Frequency of contraceptive use was comparatively low among the rural married women despite level of awareness. Desire for larger family, pressure from the husband, marriage at early ages ,religious concerns and fear of side effects were the main reasons that contribute to contraceptive non-use and be addressed as per recommendation of the study finding.

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Exchange Nailing for Non-Union of Femoral Shaft Fractures in District Level in Bangladesh

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ABSTRACT:

Background: There are many ways to treat aseptic non-union of femoral shaft fractures with reported varied success rate. Amongst all these, Exchange nailing is the simplest and most successful technique for treating aseptic non union of femoral shaft fractures. **Methods:** Forty-three femoral shaft aseptic non-unions in 41 consecutive patients were treated using exchange IM nailing, from January 2016 to December 2018 to analyse the role of exchange nailing for aseptic non union of femoral shaft fractures in Satkhira Medical College & other Private Clinics. The inclusion criteria for patients in the study was a femoral shaft fractures' aseptic non-union, has less than 1 cm shortening with no segmental bone defect, and a radiolucent line of the non-union, and which had previously been treated by intra-medullary nail. The surgical technique included removal of previously inserted intra-medullary nail, reaming of medullary cavity up to 2 mm above the previous size, and re-insertion of statically locked exchange intra-medullary nail. **Results:** Forty-three femoral shaft aseptic non-union in 41 patients were treated; the mean age of the patients was 38.81 ± 13.75 years. Thirty-nine non-union out of total 43 cases (39/43) had healed giving a union rate of 90%. Non-union persisted in the remaining four cases (4/43) in spite of extended post operative follow up of these patients for 18 months. Mean union was 4.97 ± 1.53 months. No major surgical complications were noted. **Conclusion:** Exchange nailing is a simple technique for treating aseptic non union of femoral shaft fractures. Based on the results of our study, we recommend it as the procedure of choice for non comminuted, aseptic non union of femoral shaft fracture.

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Introduction

Exchange IM nailing for the treatment of a non-united long bone fracture involves removal of the current IM nail, reaming of the medullary canal, and placement of a new larger diameter IM nail.[1,2] Femur fractures

are commonplace due to increasing exposure to environmental and professional hazards during work and leisure activities. Treatment of femoral shaft fractures has evolved with time. However surgeons around the world currently treat these fractures which are either

closed or grade 1 or 2 Gustilo type open fractures, by closed interlocking IM nails with high success rate in terms of fracture healing and fewer complications.[3] Even severe open femoral shaft fractures which have been initially fixed with external fixator may later be converted to reamed interlocking IM nails as advocated by many authors.[4,5] Although, a high union rate with a low complication rate can be achieved with closed intra-medullary nailing of long bone fractures like femur. Closed interlocking IM nailing of these fractures necessitates use of image intensifier and costlier fracture table which are not ready to hand in many hospitals in the developing countries. Under the circumstances many orthopaedic surgeons from these countries still carry out open IM nailing for these fractures with resultant increase in the rate of nonunion.[6] Non-union of fractures shaft femur are not uncommon. The non-union leads to serious morbidity and considerable family burden. Many orthopaedic surgeons are faced with dilemma as to effective treatment for the non-union of femoral shaft fractures. Treatment options range from bone grafting alone to plate osteosyntheses and IM nailing with or without supplementary bone grafting to the now widely practiced closed exchange interlocking IM nail.[7,8] Many researchers believe that exchange interlocking IM nailing is safe, simple and cost effective way of addressing this issue, and has yielded high success rate with few complications[9,10] Exchange closed interlocking nailing provides biological and mechanical effects that promote osseous healing. Reaming of the medullary canal leads to increased periosteal blood flow, stimulates periosteal new-bone formation, and delivers internal bone graft to the non-union site, all in turn aid in healing of the nonunion.[11] likewise improved mechanical stability due to use of larger size IM nail also leads to accelerated healing at the non-union site.[11,12] High incidence of femoral shaft fractures and their non-union plus paucity of research study on the issue has prompted us to carry out a prospective study on exchange interlocking IM nailing on the perplexing issue of aseptic non-union fractures shaft of

femur which have failed to heal by the prior IM nails. The aim of this study was to determine the management outcome of non-union femoral shaft fractures with exchange interlocking nailing in term of radiological bone healing.

Material and Methods :

Forty-three consecutive cases of non-union fractures shaft of femur were admitted to the Department of Orthopaedics, Salkhira Medical College & Hospital and 3 private clinics in Salkhira. This hospital-based descriptive study recruited patients from January 2016 to December 2018, and their informed consent obtained for the procedure based upon inclusion and exclusion criteria.

A small incision was given extending five cm up from the tip of greater trochanter. A guide wire inserted into the medullary canal of femur antegrade way, previous IM nail was removed, and medullary canal of the femur reamed in gradual increments up to 2 mm above the previous nail size using flexible reamers. Lastly a proper size interlocking IM nail, one mm smaller diameter than the last reamer used, was inserted over the guide wire using interlocking nail assembly. Proximal locking was done using the jig and distal screws for locking were inserted free hand way under image intensifier. We used static interlocking for all the cases in our study in order to provide added stability to the construct. Patients were given intravenous antibiotics, i.e., 1.5 gram of Cefuroxime and 80-120 mg of Gentamicin at induction of anaesthesia. These antibiotics were continued for five to seven days postoperatively. Check x-ray of the operated site for all patients were done on the 1st postoperative day to reconfirm fracture reduction and nail locking, counselling of and showing it to patients, and as guideline for comparison with later x-rays during follow-up period. Postoperatively, all patients were permitted to ambulate with protected weight bearing as soon as possible. Quadriceps as well as knee range of motion exercise was encouraged. Patients were discharged home on 3rd to 5th postoperative day. All operated patients were followed-up in

the outpatient department at 2 weeks for suture removal and wounds examination. Patients were followed up subsequently for clinical and/or radiological check up at one month intervals for minimum period of one year after the surgery or till time when bone healing at non-union site has occurred. The fracture showing radiological evidence of healing, as confirmed by independent radiologist, was considered healed. Data regarding patients' age and gender and other characteristics like femur fracture location, type of non-union as to whether hypertrophic or atrophic and injured side as to left or right, duration of fracture healing after exchange interlocking nailing, period of postoperative follow up period and complication were recorded and analysed using SPSS-10.

Results:

Forty-three non-union cases were treated with exchange interlocking IM nail in one year study time. The patients' age was 38.81 ± 13.75 years. The age graph shows predominantly bimodal age distribution of fracture femur with peak concentrations around age groups of 31 and 52 years. The male to female ratio was 2.34:1. Fractures were more common on left side than right. The type of non-union of femur and its correlation with bone healing using pre- and postoperative x-rays of the femur was analysed. Postoperative follow-up period ranged from 6 to 18 months (Mean 10.19 ± 1.99 months). Thirty-nine out of 43 cases (90%) healed uneventfully in a mean period of 4.97 ± 1.53 months (Range, 3–10 months). Except for 4 out of 43 cases (10%) of persistent non-union, no significant complications occurred.

Table No1. Side of fracture femur

Left femur	24	55.81%
Right Femur	19	44.19%
Total	43	100%

Table2 Complications of exchange Interlocking nailing

Minor complications	Frquency	Percentage
Discolour	03	7.0%
Pain	8	16.6%
Swelling	6	14.0%

Discussion : A non-union of long bones including that of shaft femur is a difficult proposition for orthopaedic surgeons. It has posed challenges to treating doctors over the years and still continues to be a dilemma. Femur being the strongest and the longest bone in the body, it not only takes the brunt of loads during everyday life, its fracture has serious morbidity like non-union. Such morbidity adds to family's burden too. Many treatment modalities from non-operative to range of surgical options have been tried for treating this difficult issue. Based on vascularity and osteogenic potential of fracture fragments' ends, Non-union has been classically classified into two types, i.e., hypertrophic (hyper-vascular) type and atrophic (avascular) type. This classification has both prognostic and treatment significance. The hypertrophic type has good healing potential and is often the result of poor fixation or loss of stability at fracture site. It benefits from stable fixation. The avascular type of non-union lacks osteogenic potential beside loss or lack of stability at the fracture site and requires bone grafting in addition to stable fixation.[13] During the past several years, methods for non-union treatment have continuously developed[14-17]. Various non-operative or operative techniques are available. However, maintenance of sufficient stability with supplementation of cancellous bone grafts has been the most convincing and has achieved the highest success rate. According to reports in the literature, Exchange Intra-Medullary Nailing provides both stable fixation and internal bone grafts to the non-union site and is the superior method of treatment for femoral shaft non-union.[18] Our data suggest that exchange interlocking nailing is effective in achieving union in both hypertrophic and atrophic non-union cases of femoral shaft fractures. Our study support the literature review of Brinker et al that exchange

nailing of an atrophic non-union may stimulate a healing response in addition to augmenting mechanical stability. Our study also supports the reports by other authors that hypertrophic non-union is best treated by exchange nailing because it augments mechanical stability at the non-union site which is the major factor for achieving osseous union.¹³ The reported success rate of exchange nailing to treat femoral shaft delayed unions or non-unions is 53–100%. Our data shows a healing rate of 90% for non-union of shaft femur fractures. The two remaining non-unions were associated with bone loss exceeding 30% of the cortical diameter. These non-unions underwent one exchange nailing and healed following a subsequent bone grafting procedure. Our study result shows that 39 patient healed uneventfully while 4 patients had failed to unite even at the end of extended follow up for 18 months in these patients. Repeat or second exchange femoral interlocking nailing with or without bone grafting was not performed for any of these four patients due to patients' non-compliance for the same procedure even after considerable counselling. The advantages of closed interlocking exchange IM nailing have been advocated. The procedure entails only small wound(s) for nail and screws insertion with consequent shorter surgery time, lesser bleeding and wound complications.^[13] Our data concord with Yu wt et al^[13] as our study shows minimal complications. Factors favouring fracture healing are minimal gap at non-union site, provision of adequate stability, and blood supply to the fracture fragments' ends.¹⁴ The size of bone defects can affect the union rate.^[9] Our study support other authors' findings that exchange ILN enhances bone healing by both augmenting mechanical stability and providing internal bone graft at the nonunion site provided there is lesser than one cm defect at the non-union site. Our study support that reaming of medullary canal, for 2 mm above the previously used nail size, provides copious amount of bone graft at the non union site if the bone loss at non-union site is less than 1 cm. This finding concords with other literature reports. This study has

used only static locking for exchange nailing and healing response is comparable to the other study.¹⁸ Although a dynamic locked nail can provide the compressive force and further promotes fracture healing, dynamically locked exchange nailing was not found superior to the statically locked nailing.⁸ According to the study of Wu et al study that with cancellous bone grafts to promote fracture healing, added compressive force does not seem to be so critical.^[18] The methods for treatment of persistent nonunion after exchange nailing are many and all methods have individual advantages and disadvantages.^[13] Our study has not included those 4 patients who showed persistent non-union in spite of the first exchange interlocking nailing procedure due to compliance reasons. Repeated exchange nailing has been reported with success and technique is the simplest.^[8,9] As for conversion to plating, a large wound with extensive soft tissue dissection may introduce more complications. Though our study has focused only on aseptic non-union exchange nailing but literature review showed that many authors have used exchange nailing to treat infected non-union and have shown success. In principle, exchange nailing should not be used in patients with acute infections. For those with acute infections, staged operations with conversion to external fixation may be more suitable.

Conclusion

Exchange femoral interlocking intra-medullary nailing is a simple technique with minimal complications. Therefore this treatment modality should be considered as the treatment of choice for aseptic, non-comminuted diaphyseal femoral non-unions which have bone gap of less than 1 Cm. We recommend static locked exchange interlocking intra-medullary nailing for the mentioned aseptic non-union of femoral fracture.

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A study of causes of right Iliac fossa pain with comparison of operative vs conservative management

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ABSTRACT:

Background and Objectives: Patient with pain in the right iliac fossa (RIF) may confront the surgeon, Paediatrician, obstetrician and gynaecologist. Thorough understandings of the anatomy and pathological processes that may occur within the abdomen are essential for an accurate diagnosis and plan of treatment. Some patients will require immediate surgical intervention, whereas others will improve with conservative treatment. The purpose of the present study is to recognise certain well defined clinic- pathological entities, differential diagnosis of pain in the right iliac fossa and the relative incidence of various aetiologies. **Methods:** A prospective randomized study was conducted on 50 patients in Satkhira Medical College Hospital. All were indoor patients with a history of pain in right iliac fossa were included in the present study. A thorough clinical examination was undertaken in each patient, including rectal examination in all cases and vaginal examination in those women where indicated. **Results:** Out of the 50 patients, 20 were males and 30 were females, with a male: female ratio of 1:1.5 with all ranged patients. Acute appendicitis (36%), no doubt, is the commonest diagnosis of the patients, presenting with acute R.I.F pain followed by Non specific mesenteric lymphadenitis(16%) and right ureteric calculi (16%). 40 percent were successfully treated conservatively, whereas 60 percent failed conservative treatment and underwent surgery. The major complication seen after the operation was wound infection which occurred in 3 operative cases. Mean hospital stay duration was 2.83 days in conservative management and 4.5 days in operative cases. **Conclusion:** A number of gastrointestinal, urological, gynecological conditions can present as acute pain in the right iliac fossa. So, a sound knowledge regarding history taking, clinical examination, especially pelvic examination, relevant investigations and the principles of management of these conditions is mandatory before proceeding for any type of surgery for acute pain R.I.F especially for junior residents.

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lower quadrant of the abdomen [2]. The differential diagnosis of the patients presenting with acute pain R.I.F is not always straightforward and a number of conditions may be responsible for pain at this site. In most of the cases, first diagnosis to be considered is acute appendicitis, which is undoubtedly the most common surgical emergency [3]. Although appendicectomy is the most common emergency general surgical procedure performed in any hospital, its diagnosis still remains difficult and a negative appendicectomy rate of 15-30% rising up to 50% in women of reproductive age has been reported [4]. Several authors considered higher negative appendicectomy rates acceptable in order to minimize the incidence of perforation [5, 6, 7].

There is a long list of surgical and medical problems, including right ureteric colic, nonspecific mesenteric lymphadenitis, ruptured ectopic gestation, pelvic inflammatory disease, ruptured functional ovarian cysts, amoebiasis, viral gastroenteritis, acute cholecystitis, perforated duodenal ulcer, Crohn's colitis, right basal pneumonia etc which can present an acute pain in R.I.F and can create a diagnostic problem [8, 9, 10]. So the familiarity with the conditions other than appendicitis presenting as acute pain in R.I.F as well as their management is very important [11, 12]. This study is based on the evaluation of these facts, so that the rate of negative appendicectomies leading to financial constraints, both on the patients as well as hospitals can be minimized [13, 14].

Objectives of the Study

The aims and objectives of this study are to study various diseases presenting as pain in the right iliac fossa, their modes of management, to detect complication and to minimise the rate of unnecessary operation.

Materials & methods

Fifty patients of both genders and all ages reporting to the Satkhira Medical college Hospital, with a history of pain in right iliac fossa were included in the present study. With the help of history and physical examination, routine and special investigations, an attempt

to reach a definite diagnosis was made, and the patients were divided into 2 groups:

Group I: Conservative group - 20 patients (40%). These were the patients in whom conservative treatment was planned and carried out.

Group II: Operated group 30 patients (60%) These patients were explored after failure of conservative trial,

These patients in group I was managed conservatively by keeping NPO, administering I.V fluids and antibiotics (triple) gradually. The patients in each group were discharged when they were symptom free, afebrile, mobile, taking adequate amount of diet and passing stools and flatus.

Results and Discussion

Out of 50 cases, 30 were female and 20 were male with a female: male ratio of 1.5:1 with a pick incidence on 3th decade. The commonest presentation of the patients in this study was acute right iliac fossa pain (100%). Apart from pain, vomiting (50%), fever (40%), tenderness (70%), rebound tenderness (30%), constipation (10%), guarding (14%), rigidity (8%), anorexia (60%) were present. Final diagnosis of the patients in the study is described in the following table.

Aetiology	%
Acute Appendicitis	36%
Non specific Mesenteric lymphadenitis	16%
Right ureteric Colic	16%
Pelvic Ovarian Cyst	06%
Ruptured u ectopic pregnancy	06%
Ileocecal TB	06%

Appendicitis (36%) was the most common cause of RIF pain followed by mesenteric lymphadenitis (16%) and right ureteric calculi (16%).

Out of 50 patients, 30 patients (60%) were managed by operative and remain 20 patients (40%) were managed conservative. Mostly

lymphadenitis and stone patients were managed conservative and mostly patients who were diagnosed as appendicitis were managed operation either elective or emergency operation.

Conclusion

A number of gastrointestinal, urological, gynecological conditions can present as acute pain in the right iliac fossa. So, a sound knowledge regarding history taking, clinical examination, especially pelvic examination, relevant investigations and the principles of management of these conditions is mandatory before proceeding for any type of surgery for acute pain R.I.F especially for junior residents. Depending on the condition either surgical or conservative approach can be undertaken.

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