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From the Desk of Editor-in-Chief

We are delighted to inform that the 6th issue of the Dhaka Central International Medical College Journal (DCIMCJ) is going to be published very soon. We are grateful to Almighty Allah. We are sending the complimentary copies of the journal to the libraries of most of the medical college and other medical institutions in Bangladesh. Already our journal has been approved by Bangladesh Medical & Dental Council (BMDC). We invite the doctors of medical colleges and institutes to submit their research articles to the journal committee for publication. We accept both hard & soft copies of the articles. We go through the papers and if necessary, communicate the authors. We also thank all the authors for giving us opportunity to publish their research papers in this journal. We have tried our best to avoid erroneous information. We like to add here that DCIMC Journal and its editorial board accept no liability for any inaccurate and misleading information, opinion and statements. It is the responsibility of the individual author (s). We have mentioned the instruction for the authors in this issue. We request the contributing authors to follow the instructions for their manuscripts. We appreciate our chairman, editors, members and advisors for their encouragement and also appreciate the contributors and reviewers for their participation. Last of all we welcome valuable suggestion, opinion, advice and constructive criticisms for improvement of` the quality of the journal.

Prof. Md Azizul Islam.
Editor-in- Chief

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Guidelines for the Authors:

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Electronic submission of manuscripts is strongly encouraged, provided that the text, tables, and figures are included in a single Microsoft Word file (preferably in Arial font).

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A manuscript number will be mailed to the corresponding author within two working days. The cover letter should include the corresponding author`s full address and telephone / fax numbers and should be in an e-mail message sent to the editor, with the file, whose name should begin with the first author`s surname attachments or triplicate Hard copy with a soft copy.

Article types:

Five types of manuscripts may be submitted:

Editorials: It will be preferably written invited only and usuallycovers a single topic of contemporary interest.

Original articles: These should describe new and carefully confirmed findings, and experimental procedures should be given in sufficient detail for others to verify the work. The length of a full paper should be the minimum required to describe and interpret the work clearly.

Short communications: A Short Communication is suitable for recording the results of complete small investigations or giving details of new models or hypotheses, innovative methods, techniques, images in clinical practice, letter to editors, short reports or apparatus. The style of main sections need not conform to that of original article.Short communication are 2 to 4 printed pages (about 6 to 12 manuscript pages) in length.

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Case reports: This should cover uncommon and /or interesting cases with appropriate confirmation process.

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I. A. Preparing manuscript for submission toDCIMCJ Editors and reviewers spend many hours

reading manuscripts that are easy to read and edit. Much of the information in this journal`s Instructions to Authors is designed to accomplish that goal in ways that meet each journal`s particular editorial needs. The following information provides guidance in preparing manuscripts for this journal.

Condition for submission of manuscripts:

- All manuscripts are subject to peer-review.
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1. Manuscript should be written in English and typed on one side of A4 (29 x 21cm) size white paper.
2. Margin should be 5 cm for the header and 2.5 cm for the remainder.
3. Style should be that of modified Vancouver.
4. Each of the following section should begin separate page :
   - Title page
   - Summary/abstract
   - Text
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   - References
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Page should be numbered consecutively at the upper right hand corner of each page beginning from the title page

I. A. 1.a. General Principles:

- The text of observational and experimental articles is usually (but not necessarily) divided into the following section: Introduction, Methods, Results, and Discussion. This so-called "IMRAD" structure is a direct reflection of the process of scientific discovery.
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- Electronic formats have created opportunities for adding details or whole sections, layering information, cross linking of extracting portions of the articles.
- Authors need to work closely with editors in developing or using such new publication formats and should submit supplementary electronic material for peer review.

- Double-spacing all portions of the manuscript- including the title page, abstract, text, acknowledgments, references, individual tables, and legends- and generous margins make it possible for editors and reviewers to edit the text line by line and add coments and queries directly on the paper copy.

- If manuscripts are submitted electronically, the files should be double-spaced to facilitate reviewing and editing.

- Authors should number on right upper corner of all of the pages of the manuscript consecutively, beginning with the title page, to facilitate the editorial process.

I. A.1.b. Reporting guidelines for specific study designs:

Research reports frequently omit important information. Reporting guidelines have been developed for a number of study designs that DCIMC journals ask authors to follow. Authors should consult the Information for Authors of this journal. The general requirements listed in the next section relate to reporting essential elements for all study designs. Authors are encouraged also to consult reporting guidelines relevant to their specific research design. A good source of reporting guidelines in the EQUATOR Network (http: //www.equator-network.org/home/) or CONSORT network (http://www.consort-statement. org).

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1. Article title. Concise title is easier to read than long, convoluted ones. Titles that are too short may, however, lack important information, such as study design (which is particularly important in identifying type of trials). Authors should include all information in the title that will make electronic retrieval of the article both sensitive and specific.

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- Should be limited to 250 words

- The abstract should provide the introduction of the study and blinded state and should state the study's purpose, basic procedures (selection of study subjects or laboratory animals, observational and analytical methods), main

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- Provide a context or background for the study (that is, the nature of the problems and its significance) It should be very specific, identify the specific knowledge in the aspect, reasoning and what the study aims to answer.

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- Both the main and secondary objectives should be clear.

- Provide only directly pertinent primary references, and do not include data or conclusions from the work being reported.

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- Authors submitting review article should include a section describing the methods used forlocatin, selection, extracting, and synthesizing data. These methods should also be summarized in the abstract.

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- Describe statistical methods with enough detail to enable a knowledgeable reader with access to the original data to verify thereported results. When possible, quantify findings and present them with appropriate indicators of measurement error or uncertainty (such as confidence intervals).

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- Link the conclusions with the goals of the study but avoid unqualified statements and conclusions not adequately supported by the data. In particular, avoid making statements on economic benefits and costs unless the manuscript includes the appropriate economic data and analyses. Avoid claiming priority or alluding to work that has not been complete. State new hypotheses when warranted, but label them clearly as such.

I. A 9. References:

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3. Manuscript

- Sample of the above document is available in the following links: http://www.dcimc.com

- If you have submitted mentioned document (1, 2, 3) above, when you first submitted your article then you don't need to re-submit but if there is change in the authorship or related then you have to re-submit it.

General outline for article presentation and format:

- Double spacing
- Font size should be 12 in arial

- Margins 5 cm from above and 2.5 cm from rest sides.
- Title page contains all the desired information (vide supra)
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- Headings in title case (not ALL CAPITALS, not underline)
- References cited in superscript in the text without brackets after with/without comma (,) or full stop (.)
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Language and grammar:

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- **Abstract**
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- **Introduction:**
  - Word limit 150-200 words
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- **Material and Methods**
  - Study Design
  - Duration and place of study
  - Ethical consent
  - Patient consent
  - Statistical analysis and software used.

- **Result**
  - Clearly present the data
  - Avoid data redundancy
  - Use table information at the end of the sentence before full stop between the small bracket

- **Discussion**
  - Avoid unnecessary explanation of someone else work unless it is very relevant to the study
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  - Mention about limitation of your study

- **Conclusion**
  - Give your conclusion
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  - Acknowledge any person or institute who have helped for the study

- **Reference**
  - Abide by the Vancouver style
  - Use reference at the end of the sentence after the full stop with superscript

- **Legends**
  - Table
  - Figures

The editor reserves the right to style and if necessary, shorten the material accepted for publication and to determine the priority and time of publication.

DCIMC

Editorial

Novel Treatment of Diabetic Nephropathy

Chowdhury MAH[1], Nomany BMS[2]

Introduction:

Diabetic nephropathy (DN) is one of the most significant complications of diabetes mellitus. It is the leading cause of CKD and ESRD in the western world and second cause in the developing countries, like Bangladesh. Its incidence is rising in developing countries due to increased incidence of T2DM.

DN develops in 20 – 30% of patients with diabetes mellitus. Patients who have no proteinuria after 25 years of diabetes have only a very small risk (<1%) of developing DN. Microalbuminuria will develop in 20 – 30% of patients of type-1 DM after 15 years. Without treatment, overt nephropathy will develop over 10 – 15 years. In contrast, only 3% of patients will have overt DN at the time of diagnosis of type- 2 DM. Without treatment, 20 – 40% of those with microalbuminuria will progress to overt DN. But these numbers are hugely significant because type-2 DM is more prevalent than type-1.

There are 5 stages of DN, namely-hyperfiltration, normoalbuminuria, microalbuminuria, overt proteinuria and renal failure. In clinical practice, the earliest evidence of diabetic renal disease is the microalbuminuria (Urine albumin ≥ 30mg/day). Patients with microalbuminuria are often said to have 'incipient' nephropathy. DN ('overt' nephropathy) describes a clinical syndrome characterized by: persistent albuminuria (>300mg/day) on at least two occasions, 3 months apart, high BP, progressive low GFR. Histologically there are Mesangial expansion (leading tointercapillary, or Kimmelstiel–Wilson nodule formation), glomerular and tubular basement membrane thickening, nodular glomerulosclerosis, arteriosclerosis, afferent and efferent arteriolar hyalinosis, tubular atrophy and interstitial fibrosis.Hyperglycemia can cause glomerular damage in a variety of ways, including ─ stimulation of mesangial cell matrix production and cell growth, increasedoxidative stress, advanced glycationend─product (AGE) formation, increased activity of protein kinase C, increased production of glomerular TGF─ B leading to increased collagen synthesis and matrix deposition, increased VEGF production leading to endothelial injury and podocytopathy. A genetic predisposition also appears to operate.

Management of diabetic nephropathy is challenging, and includes screening for early diagnosis, prevention of progression from microalbuminuria to macroalbuminuria, preventing progressive decline in renal function in patients with macroalbuminuria, and preventing cardiovascular events. Optimum management of diabetes is essential. Insulin regime needs to be reviewed, based on the stage of CKD. Most oral antidiabetic agents need dose reduction, while some are contraindicated. Hypertension, if present, should be controlled, preferably with an ACE inhibitor or ARB, due to their additional 'renoprotective' benefit, independent of BP reduction. ACE-I or ARBs should also be used in normotensive patients with micro- or macroalbuminuria.

Better understanding of DN has led to novel therapeutic strategies, particularly with respect to the effects of hyperglycaemia. Some show promise in both experimental models and clinical trials. In all cases, larger studies will be necessary. One of these agents is Pyridoxamine, a member of the vitamin B_6 family that inhibits AGE formation. It ultimately reduces mesangial expansion, decreases albuminuria, and slows rise of serum creatinine in animal models. Clinical studies suggest promise for early intervention in DN. Another promising drug is Ruboxistaurin, a selective protein kinase C inhibitor that reduces albuminuria in type-2 diabetes with DN. In a randomized, double-blind, placebo-controlled, multicenter, pilot study by Tuttle et al, there was significant decline in urinary ACR in patients treated with ruboxistaurin for 1 year, and no significant decline in eGFR[1].

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Diabetic mice lacking vitamin D receptors show RAS up-regulation, glomerulosclerosis and albuminuria. The administration of an active vitamin D analogue paricalcitol has been shown to significantly reduce this albuminuria. DeZeeuw et al showed in their study that addition of 2 µg/day paricalcitol to RAASinhibition safely lowers residual albuminuria in patients with diabetic nephropathy[2].

Pirfenidone, an anti-fibrotic (via low TGF- B production) and a free radical scavenger, reduces mesangial expansion and collagen gene expression in animals. Clinical trials suggest it may improve GFR. In a randomized, placebo-controlled trial, Sharma et al found that Pirfenidone 1200 mg /day increased GFR by 3.3 ± 8.5 ml/min per 1.73 m^2 in a 24 week period[3]. Another anti fibrotic agent, Tranilast, has also shown beneficial effects in clinical trials. Soma et al showed that Tranilast can decrease the urinary albumin and type-IV collagen excretion, although there is no change in serum creatinine level[4].

Atrasentan is a selective endothelinA receptor antagonist, which reduces albuminuria in patients with DN. De Zeeuw et al found in their study that compared with placebo, 0.75 mg and 1.25 mg atrasentan reduced urine albumin/creatinine ratios by an average of 35% and 38% respectively. Unfortunately, use of atrasentan was associated with a significant increase in weight and a reduction in hemoglobin[5].

Before advocating widespread use of these drugs, we need data from even larger trials. But it is reasonableto hope that at least one or more of these will prove their efficacy, and help us to change the gloomy outlook of DN treatment currently we have.

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Original Article

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Variation of Transverse Diameter of Dry Ossified Human Atlas Vertebra of Male and Female

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Abstract:

Context: Study of skeleton has provided an opportunity to understand better differences among human races and sex.In establishing the personal identity in respect to sex, age and stature, forensic experts, anatomist and anthropologist use the skeletal materials for giving their opinion. Study regarding different transverse diameter of atlas vertebra between male and female can help forensic experts, spine surgeons, orthopedic surgeons and radiologists to adopt appropriate plans for diagnosis & treatment. Materials and Methods: A cross – sectional, analytical type of study was conducted in the Department of Anatomy, Dhaka Medical College, Dhaka from January 2012 to July 2013. Transverse diameter of atlas vertebra was measured with the help of digital slide calipers. Result: There was no significant difference (P>0.10) in the mean transverse diameter of atlas vertebra of male and female.

Keywords: Atlas vertebra, Transverse Diameter

Introduction:

The vertebral column forms the central axis of the skeleton. Vertebral column consists of 33 vertebrae. There are seven cervical vertebrae, among them atlas is the first[1]. It is ring shaped and does not have a body and spinous process like other cervical vertebrae[2]. The vertebral arch becomes modified to form a thick lateral mass on each side joined at the front by a short anterior arch and a longer posterior arch at back.The posterior arch forms three fifth of the circumference of the atlantal ring[1]. In establishing the personal identity in respect to sex, age and stature, forensic experts, anatomist and use theskeletalmaterials for giving their opinion. Moreover the anatomy of the atlas vertebrae is needed in various operative procedures such as lateral mass screw fixation, atlanto occipital transarticular approach, etc[3]. So the findings of the present study may be helpful to the spine surgeons, radiologists and orthopedic surgeons for proper management in their respective field of practice. So far it is known that the atlas vertebrae collected from Bangladesh have not yet been studied. Hence the present study was undertaken to find out morphometric variation of the transverse diameter of atlas vertebrae collected from Bangladesh.

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Materials and Methods:

152 atlas vertebrae were collected from Department of Anatomy of Dhaka Medical College and other government and non-government medical colleges in Dhaka city.

A total 152 fully ossified and dried human atlas vertebrae of unknown sex were collected. Then the sex of collected bones was determined by a multivariate linear discriminant function analysis technique[4]. This multivariate linear discriminant analysis technique was applied to the collected data. By discriminant analysis technique and also with the help of various metric methods used by different authors, the sex was determined and the grouping was done (Table-I).

Table I: Grouping of the sample: (N=152)

Sex	Number of atlas vertebrae
Male	81
Female	71



Fig. I: Photograph showing the measurement of transverse diameter of atlas vertebra by using digital slide calipers. Red dot indicates tip of the right transverse process of atlas vertebra and blue dot indicates tip of the left transverse process.

To measure the transverse diameter of the atlas vertebrae tip of the right and left transverse processes of atlas vertebrae were determined and marked by a red and a blue dot respectively (Fig I). With the help of digital slide calipers transverse diameter of atlas vertebrae was measured as distance between the determined two points and the reading was recorded following the method of Senguland Kadioglu[5].

Ethical clearance: This study war approved by the Ethical Review Committee of Dhaka Medical College.

Results: The results are shown in table II.

Table-II

Transverse diameter of atlas vertebrae of male (n=81) and female (n=71)

Sex	Diameter (mm) (Mean±SD)
Male	72.24±5.68 (57.50-87.10)
Female	70.89±5.68 (56.33-82.71)
P value	0.148[ns]

Figures in parentheses indicate range. Comparison between sex done by unpaired Student's't' test, ns = not signific

Discussion:

In the present study there was no statistically significant difference (p>0.10) between the mean transverse diameter of male and female atlas vertebrae. Sharma et al.[6] collected atlas vertebrae from Punjab, India for their study and reported that the mean transverse diameter of male atlas vertebrae was significantly greater than female (p<0.001).This dissimilarity might be due to ethnicity and variation of race.Sengul and Kadioglu[5] measured atlas vertebrae of unknown sex collected from Turkey. The mean transverse diameter of their study was found similar (p>0.1) with male value of present study and female value of present study was found less (p<0.01) than the mean transverse diameter of atlas vertebrae reported by them. Mean transverse diameter of atlas vertebrae of the study reported by Gosavi and Vatsalaswamy[7] was less (p<0.01) than the male value of present study and female atlas vertebrae of present study was found similar (p>0.1) with the findings published by them. Naderi, et al., [8] carried out a study on atlas vertebrae of Turkish population of unknown sex and their value was greater than (p<0.001) the mean transverse diameter of male value of present study and female value of present study was significantly less than the value published by Naderi, et al[8].This dissimilarity in the findings of transverse diameter of atlas vertebrae might be due to racial variation and different measurement technique.

Conclusion:

In the present study there was no difference between the mean transverse diameter of male and female atlas vertebrae. Further radiographic and computed tomographic study of living atlas vertebrae and comparison between the radiographic findings with the morphometric study of human dry ossified atlas vertebrae are recommended.

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DCIMC

Original Article

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Incidence of Malignancy in Thyroid Nodules

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Abstract:

Thyroid nodules refer to an abnormal growth of thyroid cells that forms a lump within thyroid gland. Although the vast majority of thyroid nodules are benign, a small proportion of thyroid nodules do contain thyroid cancer. The purpose of thiscross sectional study was to find out the incidence of malignancy in thyroid nodules. The study was done in the department of ENT and head neck surgery, Dhaka Medical college hospital and BSMMU, Dhaka from April to September 2013. Fifty patients of thyroid nodules were studied by detailed history, clinical examination, thyroid hormone assay, ultrasonogram, FNAC and histopathological examination. In this study female was predominant, male female ratio was 1:3.54. Forty one cases were benign and 9 were malignant. Out of 41 benign cases firm swellings were 36 and cystic 5. Out of 9 malignant cases 8 were firm and 1 was cystic. All patients were complaints of swelling infront of neck, among them cervical metastasis were 12%. Ultrasonograms were done in all cases. FNAC done in all 50 cases, out of 50 cases, 27 were benign, cellular follicular lesion 15, papillary carcinoma 6, medulary carcinoma 1 and suspicion for malignancy 1. Final histopathology reveals 54% cases were nodular goitre followed by follicular adenoma 26%, Auto immune thyroiditis 2%, papillary carcinoma 14%, follicular carcinoma 2% and medullary carcinoma 2%. The results of this study were compared with different series found in the literature and it was found to be consistent with other series. It is important message to get appropriate medical attention for early diagnosis and proper management to reduce the morbidity and mortality.

Keywords: Thyroidnodule, Thyroid malignancy

Introduction:

The National Cancer Institute indicates that thyroid cancer is the most common type of endocrine-related cancer and estimates 64,330 new cases in 2016. Thyroid cancer represents approximately 3.8% of all new cancer cases.[1] Although a diagnosis of thyroid or any type of cancer is frightening, the vast majority of thyroid cancers is highly treatable and in most cases curable with surgery and other treatments.[2] Thyroid nodule is a discrete lesion in the thyroid gland that isradiologically distinct from the surrounding thyroidparenchyma[3]. Thyroid nodules are common; their prevalence in the general population is high, thepercentages vary depending on the mode of discovery: 2–6 % (palpation), 19–35 % (ultrasound) and 8–65 % (autopsy data)[4-6].Per the 2015 ATA guidelines, nodules with high suspicious US pattern should have repeat US and FNA within 12 months; while those with low to intermediate suspicious US pattern should have repeat US in 12–24 months. The decision to repeat FNA or observe with repeat US is based on > 20 % growth in at least 2 nodule dimensions or > 50 % increase in nodule volume or the appearance of new suspicious US pattern. Nodules with very low suspicious patterns should have US repeated at 24 months or more. Continued surveillance for a nodule with repeat second benign cytology is not needed[6].Surgical removal may be needed for benign nodules if they are causing pressure or structural symptoms. TSH suppressive therapy has no role in the management of benign nodule. Percutaneous ethanol ablation can be considered for thyroid cysts and certain complex thyroid nodules[7,8]. The prevalence of thyroid nodules detected by US has been reported as 19% to 68% depending on the study population[9], which resulted in an increase in the incidence of thyroid cancer since 5% to 15% of the identified nodules are malignant.

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Despite the steep increase in its incidence, the age-standardized mortality rate of thyroid cancer has remained stable[10], which leads to a shift toward more conservative approaches to the diagnosis and treatment of this disease in the latest American Thyroid Association (ATA) guidelines for thyroid nodules and differentiated thyroid cancer (DTC) published in early 2016[3].The importance of thyroid nodule lies in the significant risk of malignancy compared with other thyroid swelling. So, proper diagnosis and appropriate treatment of thyroid nodule is mandatory[11].The attending patients of these hospitals are from all the corners of the country (both endemic and non endemic area) which are more or less representative of all the head-neck cancer population of Bangladesh. This study tries to find out the incidence of malignancy in thyroid nodule in Bangladeshi population.

Materials and Method:

This observational type of cross sectional study was carried out in the Department of ENT and head neck surgery in Dhaka Medical College Hospital and BSMMU during April2013 to September2013. All patients with thyroid nodule of both sex and all age group were included. Mentally ill patients, patients with diffuse enlargement of thyroid and patients with physiological enlargement of thyroid gland were excluded from this study. Data were processed and analyzed by using computer based programmed SPSS-19 (Statistical Package for Social Sciences). The quantitative data were analyzed by mean, standard deviation. The qualitative data were analyzed by Pearson Chi-square(x^2) test with 95% confidence interval to make inference. For all analytical tests, the level of significance was set at 0.05 and p-value equal or less than 0.05 was considered as significant, less than 0.01 was considered as very significant and less than 0.001 was considered as highly significant. P-value more than 0.05 was considered as not significant.

Results

The mean (±SD) age of the study subject was 35.60(±13.54) years. Eleven (22%) were male and 39(78%) were female. Male, Female ratio was 1: 3.54(Table 1). All the patients had one single common presentation that is swelling in front of the neck 50(100%), some patients presented with other symptoms like cervical lymphadenopathy 06(12%), dysphagia due to pressure effect or oesophsgeal invasion 01(2%), dyspnoea due to pressure effect or tracheal invasion 01(2%), hoarseness of voice due toinvolvement of recurrent laryngeal nerve 01(2%)(Table-2).Out of 50 cases most, 28(56%) nodules were found in the right lobe of thyroid gland (Table-3). Out of 41 cases of benign lesion, 17 (41.46%) cases presented within 2-5 yrs period of time. On the other hand out of 9 cases of malignant lesion, 05(55.56%) cases presented within 1-2 yrs period of time. ($p < 0.05$) that was statistically significant. Malignant cases took lesser time to develop than benign lesions (Table 4). Out of 41 cases of benign lesion, most commonconsistancy was firm 31(75.61%) & next was cystic 05(12.19%). Out of 9 cases of malignant lesion, most common consistency was also firm 06(66.7%).Chi-square test shows significant association between malignancy & hardness of thyroid nodules ($p < 0.05$) (Table 5). Out of 50 cases in FNAC, 42(84%) cases were benign & 08(16%) cases were malignant. Histopathological diagnosis was the final diagnosis. Out of 9 malignant cases of histopathological diagnosis, 08 corresponded with FNAC diagnosis. Chi-square test shows significant correlation between FNAC and histopathologicaldiagnosis (Table-6). Regarding histopathological findings of the study subjects out of 50 cases, benign lesion was found in 41(82%) subjects & malignant lesion in 09(18%) subjects. Benign lesion is higher than malignant lesion in thyroid nodule (Table-7). Out of 9 malignant cases most 07(77.77%) of them were papillary carcinoma, Follicular 01(11.11%) & Medullary carcinoma was 01(11.11%). Papillary carcinoma was common among all the malignant cases (Table-8). Most of the nodules 44(88%) were solid in nature irrespective of benign & malignant lesion. Out of 9 malignant cases 08(88.8%) were solid but cystic were 01(11.11%). Chi -square test shows that malignancy is significantly more in solid than cystic solitary thyroid nodule ($p<0.05$)(Table-9).

Table 1: Demographic Characteristics of theStudy Population (N=50)

	Number	Percentage
Age in years (Mean ±SD)	35.60±13.54	Range 15-62 years
Sexn (%)		
• Male	11	22
• Female	39	78

Table-2: Clinical Presentation of Cases of Thyroid Nodule (N=50)

Sign and symptoms	Frequency	Percent
Swelling in front of neck	50	100
Palpable cervical lymph nodes	06	12
Dysphagia	01	02
Dyspnoea	01	02
Hoarseness of voice	01	02
Bone pain	00	00

Table-3: Involvement of Site of Nodule in theThyroid Gland (N=50)

Site	Frequency	Percent
Right lobe	28	56.0
Left lobe	19	38.0
Both lobe	02	04.0
Isthmus with adjacent lobe	01	02.0
Total	50	100.0

Table-4: Distribution of Cases According to the Histopathology Report & the Time Elapsed After the Nodule Has Developed (N=50)

Duration of nodule development	Histopathological findings			
	Benign n (%)	Malignant n (%)	Total	p value
< 1 yr	05(12.19)	03(33.33)	08(16)	0.01^{S}
1-2 yrs	07(17.07)	05(55.56)	12(24)	
2-5 yrs	17(41.46)	01(11.11)	18(36)	
> 5 yrs	12(29.26)	00(00)	12(24)	
Total	41(100)	09(100)	50(100)	

Table-5: Association of Histopathological Findings with the Consistency of Thyroid Nodules. (N=50)

Consistency	Histopathological findings		p value
	Benign n(%)	Malignant n(%)	
Soft	04(9.75)	00(00)	0.37^{ns}
Cystic	05(12.19)	01(5.55)	0.34^{ns}
Firm	31(75.61)	06(66.7)	0.99^{ns}
Hard	01(2.43)	02(22.2)	0.009^{S}
Total	41(100)	09(100)	

Table-6: Results of FNAC & Corresponding Final Histopathology (N=50)

FNAC findings	Final histopathological findings		
	Benign	Malignant	P value
Malignant cell Absent	40(97.56)	02(22.2)	$<0.001^{S}$
Malignant cell present	01(2.43)	07(88.8)	
Total	41(100)	09(100)	

Table-7: Histopathological Findings of the Study Subjects (N=50)

Histopathological findings	Frequency	Percent
Benign	41	82.0
Malignant	09	18.0
Total	50	100.0

Table-8: Pattern of Malignancy in Thyroid Nodule According to Histopathology (N=9)

Type of malignancy	No of cases	Percent
Papillary carcinoma	07	77.77
Follicular carcinoma	01	11.11
Medullary carcinoma	01	11.11
Total	09	100

Table-9: Distribution of Final Benign & Malignant Lesion According to Preoperative Solid & Cystic Findings (N=50)

Histopathological findings	USG findings		Total	p value
	Cystic	Solid		
Malignant	01(11.11)	08(88.8)	09(100)	$<0.001^{S}$
Benign	05(12.19)	36(87.80)	41(100)	
Total	06(12)	44(88)	50(100)	

Discussion:

For this study, 50 patients of thyroid nodules were studied by detailed history, clinical examination, thyroid hormone assay, ultrasonogram, thyroid scan, FNAC and histopathological examinations.

In our study mean age of the patients of thyroid nodule was 35.6±13.54 years and the highest frequency (38%) was within 21-30 years of age. Venkatachalapathy et al.[12] found the age range of their patients were 11-70 years of age. The youngest patient in our study was a boy of 13 years with a papillary carcinoma and the oldest patients was a man of 75 years with medullary carcinoma. The youngest patient and oldest patients of this study both had been suffering from malignant thyroid disease, the extreme of ages show less incidence of thyroid disease but has a more chance to be malignant.

In this series, out of 50 patients, male were 11 (22%) and female were 39 (78%). Male female ratio was 1: 3.54. In the study of Venkatachalapathy et al.[12], thyroid nodules were more common in female, where male female ratio was 1:2.2. This female preponderance is reflected in all studies including the present. The cause of high male to female ratio in this series can be explained by most of the patients are from nonendemic area[13]. Here we may recall the findings of Kilopatric et al. who found a female to male ratio of 4:1 in nonendemic area[14]. It is due to fact that thyroid disorder is female prone owing to the presence of estrogen receptors in the thyroid tissue[15].
All thyroid nodules are not a single clinical entity. So it is very difficult to comments regarding the nature of thyroid nodules purely on the basis of clinical ground.But hoarseness of voice, hard irregular nodule, palpable cervical lymph node, extreme of age, male sex are always suspicious for malignancy in solitarythyroid nodule[16]. Regarding presenting complaints we have found that all of the patients with neck swelling presents within variable durations. Some patient also presented with other symptoms like cervical lymphadenopathy 06(12%) cases, dysphagia 01(2%), dyspnoea 01(2%), hoarseness of voice 01(2%) case & no bone metastesis found. Among 9 malignant cases 05(55.56%) cases presented within 2 years but out of 41 benign cases only 07(17.07%) cases presented within 2 years. It is well supported by others studies[17,18]. Where duration of swelling prior to the presentation was from 6 months to 3 yrs[12]. Nodular goiter with large swelling may be associated with difficulty in respiration or rarely in deglutition which is due to pressure on trachea or oesophagus.[19]

In this series we have seen that nodules were found more in right lobe than left. There is yet no reported predilection for any specific site and no reason has been put forward for such a predilection. Similar findings were noted by many authors[20,21]. We found 28 nodules in right lobe, 19 nodules in left lobe, 2 nodules in both lobes and 1 nodule in the junctional region between isthmus and one lobe.

Firm nodules are the commonest form of thyroid nodule. In this series of thyroid nodules constituted 73% were firm, 6% hard and 11% were cystic. Malignancy was found more in firm nodule 13(72.22%). Islam etal.[22] foundmajority of the nodules were firm (72.03%), others were hard (16.95%) and cystic (11.02%). Malignant lesion was more common in hard nodule (70%). Here hardness of nodule was due to malignancy and inflammatory conditions. Among 3 hard nodules, 2 were diagnosed as malignancy and 1 were diagnosed histopathologicallyas thyroiditis. So hardness in not conclusive but an important indication for malignancy. Hardness and irregularity, due to calcification, may simulate carcinoma[16] Investigations are essential to establish preoperative - ephysical, function status and cytopathological nature of solitary nodule of thyroid.[23]

All patients of this study have done thyroid hormone profile and show value within normal limit. Isotopes scanning of the thyroid gland were done to see the functional status of the nodule. We found most 48(96%) of the nodules were cold & 02(4%) were warm nodule. No hot nodule was found. In this study out of 50 thyroid nodular goiters 09(18.75 %) were malignant. Basharat et al.[24] showed in her study that on thyroid scan out of 40 patients (80%) having cold nodule &10 patients (20%) had hot nodule. Most of the nodules were cold (66.10%) among them 25.6% cases were malignant, followed by warm (30.5%) and hot (3.3%) [22].

Fine needle aspiration cytology (FNAC) is a very important, highly sensitive and minimally invasive preoperative diagnostic tool[19]. According to Chandanwale S et al.[25] FNAC is the gold standard for preoperative assessment of thyroid nodules. Early and accurate diagnosis reduces surgical intervention,

morbidity and mortality. In our study of FNAC of thyroid nodules we found colloid nodule 46%, throiditis 2%, colloid degeneration 6%, cellular follicular lesion 30%, papillary carcinoma 13%, medullary carcinoma 1% & non conclusive 2%. On FNAC majority of thyroid nodules were benign[12]. FNAC cannot distinguish between follicular adenoma and follicular carcinoma. In our study sensitivity & specificity of FNAC was 77.77% & 97% respectively. Where other study like Chandanwale S et al.[25] showed sensitivity and specificity of FNAC was 90% and 100%, respectively. Basharat R et al.[24] showed sensitivity & specificity of FNAC 80% & 97.7% respectively inher study. So FNAC is an important pre-operative diagnostic tool for thyroid nodules.

Final diagnosis in this study was on the basis of histopathological reports record. Out of 50 cases, 27 cases (54%) were proven as nodular goiter & 2% were thyroiditis in non-neoplastic lesion & in neoplastic lesion we found 13(26%) was benign (follicular adenoma) and 09(18%) cases were malignant. In our study among 09 malignant cases 07(77.77%) were papillary carcinoma, 01(11.11%) were follicular carcinoma and 01(11.11%) case was medullary carcinoma. In the study by Khairy G.A et al. 13.9% of patients of thyroid nodules was found to be malignant.[26] Tarraret al.[27] showed that 13.33% of thyroid nodules were found to have malignant lesions & 86.67% were benign. Papillary carcinoma was the most common malignancy (50%) found in his study. Male patients with solitary thyroid nodule showed a higher incidence of malignancy (17.65%) as compared to females (11.63%). In our study we found frequency of malignancy in case of male was 27.3% & in case of female 15.4 %. Venkatachalapathyet al.[12] found the incidence of malignancy in their series in thyroid nodules was 18%. Islam et al.[22] in their study found 18.65% of thyroid nodules to be malignant & out of them 16 (72.72%) cases were papillary carcinoma, 04 (18.18%) cases were follicular carcinoma and 02(9.1%) cases were medullary carcinoma**.** It showed a clear predominance of papillary over follicular and medullary carcinoma. According to Watkinson[28], frequency of papillary carcinoma is 80% and follicular carcinoma is 10%. Shaheen showed that papillary carcinoma comprises about 60% of all thyroid cancer and follicular carcinoma comprises 18% of all malignant thyroid neoplasm[15,29]. So, papillary carcinoma was more common among all thyroid malignancies in patients with solitary thyroid nodule.

Ultrasonography is used to establish physical characteristics of nodule like the size, echo-structure (solid or cystic), shape and number of nodule(s), and extranodular thyroid tissue. In our study of ultrasonography we found 44(88%) nodules weresolid, 06(12%) were cystic. In our study, out of 44 solid nodule 36(72%) were benign & 08(16%) nodulewere malignant and out of 6 cystic nodule 05(83%) were benign & 01 (9.1%) was malignant. Our study showed, most of the benign & malignant nodules were predominantly solid. Study showed the malignancy is significantly ($p<0.001$) more in solid than cystic solitary thyroid nodule. Our study correspond with the study of Edith (1990) where he showed of cystic thyroid lesions, 4% were simple cysts, 82% were degenerating benign adenomas or colloid nodules and 14% were malignant compared with 23% of solid lesions that were malignant[30]. Doheny also mentioned in a web journal in 2012 that a solid thyroidnoduleis more likely than a cystic nodule to be malignant. More than 90% of all solid nodules, however, are benign[31]. Razaet al.[32] they found 9% incidence of malignancy in solid nodules & no malignancy in cystic nodules. Ergete&Abade found incidence of carcinoma in cystic lesion <2%[33].
As this study had been carried out over a limited period of time with a limited number of patients, it could not have been large enough to be of reasonable precision. All the facts and figures mentioned here may considerably vary from those of large series covering wide range of time, but still then, as the cases of this study were collected from tertiary level hospitals in our country, this study had somecredentials in reflecting the facts regarding distribution and type of malignancy in solitary thyroid nodules.

Conclusion:

We have observed worldwide malignancy in thyroid nodules ranging from 16-30%.We found in our series containing 18% malignancy in solitary thyroid nodule. So significant percentage of malignancy in thyroid nodules is very important though it is a small noduler lesion. As small lesion of thyroid nodules sometimes is overlooked, so it is an important message to our fellows and practitioners to get appropriate medical attention for early diagnosis & proper management to reduce the morbidity and mortality.

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Original Article

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Dyslipidemia and Atherogenic Index among the Young Female Doctors of Bangladesh.

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Abstract:

Background: The atherogenic index of plasma (AIP) is defined as logarithm [log] of the ratio of plasma concentration of triglycerides to high-density lipoprotein (HDL) cholesterol. AIP can be easily obtained from lipid profile. Objective: This study was done to assess the lipid profile and atherogenic index among the young female doctors of Bangladesh. Methods: It was a cross sectional study carried out in various departments of different medical college hospitals and BSMMU during the period of January 2010 to December 2011. Through purposive and convenient sampling 300 doctors of age 30-45 years having minimum MBBS degree were enrolled in the study. According to age we divided them into Group-I (age 30-37yrs) and Group-II (age 38-45 years). In laboratory, from blood sample lipid profile was analyzed. Then atherogenic index was assessed by AIP calculator. Results: Among the doctors 16.3% had increased TC, 15% increased LDL, 17.6% increased TG and 27.6% decreased HDL. According to the AIP calculator among the 300 doctors 39 presented with low risk, 50 with intermediate risk and 211 with high risk. The prevalence were 13%, 17% & 70% respectively. Frequency and prevalence of the pattern of atherogenic index were calculated at 95% CI. Comparison of the two group of doctors were done by chi square test to see the level of significance, but no significant difference found between them. Conclusion: Majority of the young female doctors had high risk type of atherogenic index.

Keywords: AIP, Dyslipidemia

Introduction:

In recent years there has been striking increase in number of metabolic disorders in the developing world. Urbanization, modern lifestyle, change of food habit cumulatively contribute for development of these disorders. Dyslipidemia has been identified as one of the most important risk factor associated with coronary artery disease by the INTERHEART-South Asia study.[1]Dyslipidemia implies the presence of anincreased number of atherogenic lipoproteins eg. LDL and /or a reduced antiatherogenic HDL beyond what is optimal. Cardiometabolic risk patients frequently have dyslipidemia (low HDL cholesterol, increased triglycerides, and/or increased number of small LDL particles)[2].

The atherogenic index of plasma (AIP), defined as logarithm [log] of the ratio of plasma concentration of triglycerides to high-density lipoprotein (HDL) cholesterol, has recently been proposed as a predictive marker for plasma atherogenecity and is positively correlated with cardiovascular disease risk[3].

The ratio log (TG/HDL), which is called AIP correlates well with the size of HDL and LDL particles and with the fractional esterification rate of cholesterol by lecithin: Cholestaryltransferase in plasma. The ratio accurately reflects the presence of atherogenic small LDL and HDL particles,is a sensitive predictor of coronary atherosclerosis and cardiovascular risk and a useful surrogate for insulin resistance. People with high AIP have a higher risk for coronary heart disease (CHD) than those with low AIP.[4] AIP is useful in predicting atherogenecity.[5] Triglycerides and HDL-cholesterol in AIP reflect the balance between the atherogenic and antiatherogenic lipoproteins respectively[6]. It is characterized by high low density lipoprotein cholesterol to high density

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lipoprotein cholesterol ratio and increased level of triglyceride[7]. Practicing physicians involved with health care are an important segment of public health service providing system. It has been observed that the prevalence of metabolic syndrome and cardio metabolic risk factors are more in people used to sedentary life. Nature of profession makes the doctors to lead sedentary life because they are awefully burdened with institutional and private practice. They always lead stressful life. Most studies from the developed countries showed that doctors, generally do not take care of their health[8-10].

Materials and Method:

This observational cross sectional study was carried out in the Department of Biochemistry, BSMMU, Dhaka during the period from January 2010 to December 2011. Total 300 young female doctors (aging 30-45 years) from various medical college hospitals and BSMMU were enrolled in this study. They had a minimum of 5 years experience. After 10-12 hours of overnight fasting, 5ml of venous blood was collected from median cubital vein of each study subjects by disposable syringe with all aseptic precautions. Lipid profile study were performed in the Department of Biochemistry, BSMMU, Dhaka by auto analyzer.

Laboratory method.

1) Estimation of fasting serum total cholesterol was done by enzymatic end-point (CHOD-PAP) method.

2) Estimation of fasting serum triglycerides (TG) was done by enzymatic (GPO-PAP) method.

3) Estimation of fasting serum high density lipoprotein (HDL) cholesterol was done by enzymatic end point (CHOD-PAP) method.

4) Estimation of fasting serum Low-density lipoprotein (LDL) cholesterol was calculated by using Friedwald's formula.

- **Atherogenic Index** : After getting TG and HDL-C value we assessed the Atherogenic index by AIP calculator

Formula: Log (TG/HDL-C)

AIP< 0.11- low risk

AIP (0.11-0.21)-intermediate risk

AIP>0.21- increased risk.

Data were analyzed using the software-SPSS (Statistical Package for Social Sciences) for windows version 16.0. The results were expressed as mean ±SD (Standard deviation). Frequency of dyslipidemia measured at 95% CI. Comparisons between the different parameters of the lipid profile in the two groups were done by unpaired t test. Status of atherogenic index were assessed among the study subjects. Comparison of the status of atherogenic index of two group doctors were done by chi square test. But there is no statistically significant difference found between them. The p value of <0.05 was considered statistically significant.

Results:

Table I: Frequency and prevalence of the different components of lipid profile among the Doctors

Parmeter	Frequency	Prevalence
TC(>200 mg/dl)	50	16.3%
LDL(>130mg/dl)	45	15%
TG(>150mg/dl)	53	17.6%
HDL(<40mg/dl)	83	27.6%

Table I showed the frequency of any alteration of the different components of lipid profile among the study subjects. The prevalence of decreased HDL was more than the other parameters. It was found 27.6%.

Table II: Comparison of the lipid profile compo-nents among the two groups of doctors (N=300):

Parameter	Age (years)		p value
	Group I (30 – 37)	Group II (38-45)	
TC (mg/dl)	176.5 ± 34.3	177.8 ± 32.3	0.738
LDL-C (mg/dl)	111.0 ± 29.6	109.1 ± 26.5	0.576
TG (mg/dl)	108.4 ± 54.5	119.7 ± 62.4	0.098
HDL-C (mg/dl)	44.1 ± 8.3	44.6 ± 8.7	0.625

Unpaired t test was done to measure the level of significance
Table-II showed the comparison of the different components of lipid profile between the two groups of doctors. There were no significant difference found between them.

Table-III: Atherogenic index among the young female doctors (N=300):

Parameters	Total study subjects (n=300)		
Pattern of atherogenic index	Frequency	Prevalence	95% CI
Low risk	39	13%	12.3-16.3
Intermediate risk	50	16.7%	14.8-19.1
High risk	211	70.3%	65.1-71.3

Table-III showed the pattern of atherogenic index among the doctors. Majority of them had high risk type of atherogenic index and the prevalence were 70.3%.

Table IV: Comparison of the status of AIP among the two group of doctors (N=300):

AIP	Age (years)		p value
	Group I (30 – 37)	Group II (38-45)	
Low risk	22 (12.8%)	17 (13.3%)	0.901
Intermediate risk	34 (19.8%)	16 (12.5%)	0.095
High risk	116 (67.4%)	95 (74.2%)	0.204

Chi-square test was done to measure the level of significance

Table-IV showed the comparison of the status of atherogenic index among the two group of doctors. There were no significant difference found between them.

Discussion:

Lipid profile refers to some routinely done biochemical tests to assess the atherogenic status of individuals at risk of coronary artery disease. Lipid profile and atherogenic index have been shown to be weighty(significant) predictors for metabolic disturbances including dyslipidemia, atherosclerosis , hypertension and cardiovascular diseases.The atherogenic lipid profile, consisting of hypertriglyceridemia, low levels of high-density lipoprotein (HDL)-cholesterol, and high levels of low density lipoprotein (LDL)- cholesterol, in particular small and dense LDL particles, has been tied to abdominal obesity, insulin resistance and cardiovascular related mortality. Additionally, levels of apoprotein-B, the apolipoprotein moiety of the atherogenic lipoproteins (Very low-density lipoprotein, intermediate density lipoprotein, and LDL) have been shown to predict CVD and related events, independent of traditional risk factors[11]. Atherogenic index of plasma (AIP) reflect the balance between the atherogenic and protective lipoproteins. AIP correlates with the size of pro- and antiatherogenic lipoprotein particles. Clinical studies have shown that AIP is an easily available cardiovascular risk marker and an useful measure of response to treatment.[5,6]

For proper health care delivery system healthy doctor's community is essential. They do not have enough time for physical exercise, more over they bear high stress out of professional intricacy. Metabolic disorders seems to be increasing among the doctors which is alarming and may reduce long term working ability of them that could affect the health service delivery system. Because these disorders give rise to various life threatening medical problems like diabetes mellitus, cardiovascular disease, stroke, chronic kidney disease, and polycystic ovary syndrome etc.

Most studies from developed countries also showed that doctors, generally do not take good care of their health. So they are easily prone to develop any type of metabolic disorders. Some studies showed that doctors are suffering from metabolic disorders as well as dyslipidemia. In India Ramachandan conducted a study among 2499 Indian physician of mean age 39.0±9.0 years and found the prevalence of metabolic syndrome 29%, diabetes 13.3%, impaired glucose tolerance 10.7%, hypertension 35.6% and obesity 55.5%. They concluded that in India, doctors had high prevalence of cardiometabolic risk factors and metabolic syndrome than general population. They also showed that the prevalence of MS was higher among female doctors (25.3%)[12]. In another south Indian study of Madurai among 1433 physician in the year 2009 aged 35-65 years 23% of female doctors were hypertensive, 49% had MS with IDF criteria, 39% had MS using ATP III guidelines, 82% had abdominal obesity, 76% exhibited an HDL abnormality & 33% of the female doctors had hypertriglyceridemia. HDL abnormality and abdominal obesity found more in females than males. [13] Another study among Indian Physicians in Jaipur in 2001 also showed high prevalence of coronary risk factors. They found prevalence of obesity 51.4%, hypertension 20%, diabetes 12.9%, high total cholesterol 32.3%, high LDL cholesterol 29% and high triglyceride 12.9% in female doctors[14]. In our study among the doctors 16.3% had increased TC, 15% increased LDL, 17.6% increased TG and 27.6% decreased HDL. In case of atherogenic index according to the AIP calculator 39 presented with low risk, 50 with intermediate risk and 211 with high risk. The prevalence was 13%, 17% & 70% respectively. So the doctors having dyslipidemia must have high atherogenic index. Illnesses among doctors include all the categories for the general population at large such as cardiovascular diseases, respiratory disorders, musculo-skeletal disorders, cancer and psychiatric illness[10] .A study among the medical students of Karachi, Pakistan showed general neglect of their health and highlighted the urgent need to promote preventive knowledge and practice among them[15].

A study among the doctors of Bangladesh done by Baul in 2010 at BSMMU, Dhaka from July 2009 to June 2010 documented high prevalence of Metabolic syndrome and the proportion was higher in female than male doctors (42.8% vs 36.8%)[16]. A study among the medical students of Bangladesh done by Nazneen in 2009 in BSMMU, Dhaka from July 2008 to June 2009 documented high prevalence of obesity and atherogenic phenotype positivity among the female students than male (22% vs16%)[17].

Conclusion:

The young doctors of Bangladesh has dyslipidemia and the doctors having high atherogenic index must need more motivation to follow good health care practices for their longevity. AIP can be easily

calculated from lipid profile and can act as an adjunct that significantly adds predictive value for metabolic disorders beyond the individual lipid parameters.

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Original Article

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A Study on Stroke in Young Patients Due to Cardiac Disease in a Tertiary Care Hospital in Dhaka City

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Abstract:

Stroke is an important cause of morbidity and mortality. Causes of stroke in young patients are different than those of the elderly. Cardiac diseases are important cause of stroke in young patients. This non randomized prospective hospital based observational study was carried out to analyze prevalence of cardiac diseases for stroke in young adults (18-45years) in hospitalized patient in tertiary care hospital. Fifty patients were purposively chosen for this study, of which 26(52%) patients were male, 24(48%) patients were female. Male: female ratio was 1.08:1. Highest incidence of stroke was in between 3rd & 4th decade. Patients came from both urban & rural areas & most belonged to the low income group. Most of them were housewife (28%). Most of the study subjects were literate (88%). CT scan & MRI study revealed that the incidence of ischemic stroke was 46(92%) & hemorrhagic stroke was 4(8%). Cardio embolism was the major (42.1%) risk factor for ischemic stroke. Among the cardiac risk factors, there were valvular disease (64%), MI (16%), & IHD (12%). Eight (33.33%) women with cerebral infarction were using OCP. Majority of the patients in this study were sedentary worker (45%). Among the stroke patients 8% & 10 % had previous history of stroke & TIA respectively. Most of the patients were awake while they suffered stroke.

Keywords: Young stroke, Cardiac Disease

Introduction:

Stroke is a major cause of morbidity & mortality[1]. It is one of the most common neurological disorders & the third most common cause of death worldwide[2].The world health organization defines stroke as the rapidly developing clinical symptom and / or sign of focal (at times global) disturbances of cerebral function, with symptoms lasting more than 24 hours or leading to death with no apparent cause other than that of vascular origin[3]. Stroke may be ischemic or hemorrhagic & usually occurs in the elderly & middle aged. The occurrence of stroke in the age group of 15 to 45 years is called stroke in young adults[2]. In western countries, <5% of all stroke occur in subjects < 45 years of age. Higher proportions, (between 19% and and 30%) are reported in developing countries, and isheterogeneous & often poses a diagnostic challenge. Western reports show that in young age group,more common in the men than women [4-6]. In terms of risk factors stroke in young adults is remarkably. Cardioembolization & non-atherosclerotic vasculo- pathies are rarely important cause of ischemic stroke as compared to atherosclerotic vasculopathy& small artery occlusion. Regarding hemorrhagic stroke in young adults subarachnoid &intracerebral hemorrhage is more common than the elderly[7,8]. However, cardio-embolic sources of ischemic stroke are often occult, and have important treatment implications. When the cause of ischemic stroke in young person is unclear after a thorough initial diagnostic evaluation, it is worthwhile to take a second look to the heart. Therefore, this study aims to find out the frequency of cardiac diseases as risk factor associated with occurrence of stroke in the young in a tertiary care hospital.

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Materials and Methods:

This prospective observational study was done in Medicine, Neurology & Cardiology units of Dhaka Medical College Hospital from July to December 2009. Fifty patients of stroke (confirmed by CT or MRI) of both sexes were selected by purposive sampling. The inclusion criteria were: age<45 years, sudden focal neurological deficit persisting for >24 hours, and evidence of stroke on CT/MRI of brain. Patients who could't give history properly or having

no responsible attendant, patients with history of head injury, ICSOL, any demyelinating disease, bleeding disorder evident by history or by brain imaging were excluded from the study, as well as patients who died immediately after admission.The investigations performed in all the patients included CBC, urine routine examination, serum creatinine, blood glucose (fasting and 2 hours after breakfast), chest X-ray, ECG, fasting lipid profile, anti phospholipid antibody, protein C & S, echocardiography and CT scan or MRI of brain. Informed written consent was taken from the patient or the attendant, as appropriate. Ethical clearance was taken from the ethical review committee of Dhaka Medical College Hospital.

Results:

Most of the patients (36%) in this study were in between 41-45 years, followed by 22% between the age group of 36-40 years. There was a slight male preponderance with Male: Female ratio of 1.08:1. Most of the patients (56%) were from urban areas. Majority were from low income group (64%), whereas middle and high income groups comprised 32% and 4% respectively. Only 12% were illiterate, 32% went to primary school, 14%completd SSC, 22% completed HSC, and 20% completed graduation (Table-1).

Regarding occupation, majority patients were housewife (28%), followed by unemployed (16%), and service holder (12%) (Table-2).

In both sex, stroke incidence increased exponentially with increasing age (Fig-1). Majority of the strokes occurred at rest (56%) (Table-3). Regarding family history, 32% of the patients had family history of stroke, 20% had hypertension, 16% Diabetes mellitus, 12% Ischemic heart disease (Table-4).

Only 24 out of the 50 patients had hypertension. Of them 16(66.67%) patients were previously diagnosed whereas 8 (33.33%) were diagnosed on admission as hypertensive. Of the 16 patients with known hypertension, only 6 were regularly treated, and 10 patients were on irregular or no treatment (Table-5). Four patients (8%) had previous history of stroke, while 10% had history of TIA. Ten patients (20%) were smoker. Among the 24 female patients, 14 (58.33%) never used contraceptives. Eight of them (33.33%) were currently using contraceptives, while 2 (8.33%) had history of previous contraceptive use.

Of the 50 study subjects, 46(92%) suffered from ischemic stroke, and 4(8%) suffered from intracerebral hemorrhage (Fig-2).

Out of 50 patients, 64% of the patients were suffering from valvular heart disease and 16% patients were suffering from myocardial infarction (Table-6).

During discharge 76% of the patient was improved, 6%were static & the remaining 8% were deteriorated.

Table-1: Demographic characteristics of the study population (N=50)

	Number (n)	Percentage (%)
Age		
• 18-23	2	4
• 24-29	9	18
• 30-35	10	20
• 36-40	11	22
• 41-45	18	36
Sex		
• Male	26	52
• Female	24	48
Residence		
• Urban	28	56
• Rural	22	44
Economic status		

• Low (up to TK 60,000 per annum)	32	64
• Middle(TK 60,000-180,000per annum)	16	32
• High (>TK 180,000)	2	4
Literacy		
• Illiterate	6	12
• Primary	16	32
• SSC	7	14
• HSC	11	22
• Graduate	10	20
Total	**50**	**100**

Table-2: Distribution of patients in occupational categories (N=50)

Occupation	Number (n)	Percentage (%)
Service	6	12
Business	4	8
Student	8	16
Labourer	4	8
Cultivator	3	6
House wife	14	28
Unemployed	8	16
Retired	0	0
Others	3	6
Total	**50**	**100.00**

Table-3: State of patient during onset of stroke (N=50)

State of patient	Number (n)	Percentage (%)
Sleep	8	16.16%
Work	8	16.16%
Excitement	1	2
Rest	28	56
Others	5	10
Total	**50**	**100**

Table-4: Family History of Stroke, Hypertension, Diabetes mellitus, IHD in the study subjects (N=50)

Family History	Number (n)	Percentage (%)
Diabetes mellitus	8	16
Hypertension	10	20
Ischemic heart disease(IHD)	6	12
Stroke	16	32
No history	10	20
Total	**50**	**100**

Table-5: Stroke with hypertension (n=24)

Hypertension	Number (n)	Percentage (%)
Previously known	16	66.67
• Regularly treated	06	37.5
• Irregular/no treatment	10	62.5
Diagnosed on admission	08	33.33
Total	**24**	**100**

Table-6: Frequency of different heart diseases in the study subjects (N=50)

Diseases		Number (n)	(%)
Myocardial infarction (MI)	Anterior	6	16
	Inferior	2	
Ischemic heart disease (IHD)	Inferior ischemia	1	12
	Anterior ischemia	4	
Valvular heart diseases	Mitral stenosis(MS)	24	64
	Mitral stenosis with mitral regurgitation	7	
	Mitral stenosis with Aortic stenosis	1	
Atrial fibrillation		4	8
Total		**50**	**100.00**

Table-7: Outcome of stroke patients during discharge (N=50)

Outcome	Number (n)	Percentage (%)
Improved	38	76
Static	8	16
Deteriorated	04	8%
Total	**50**	**100**

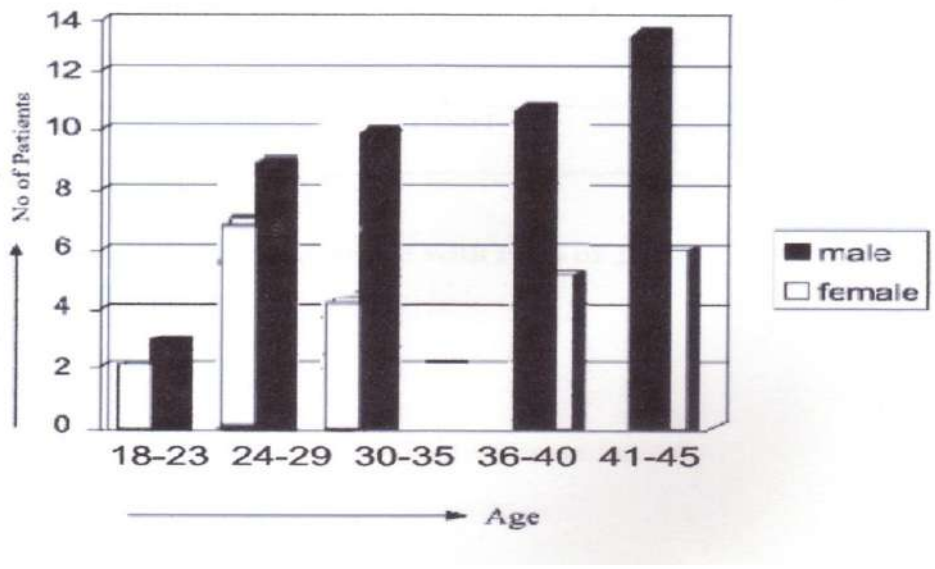


Figure-1: Distribution of study subjects according to age and sex (N=50)

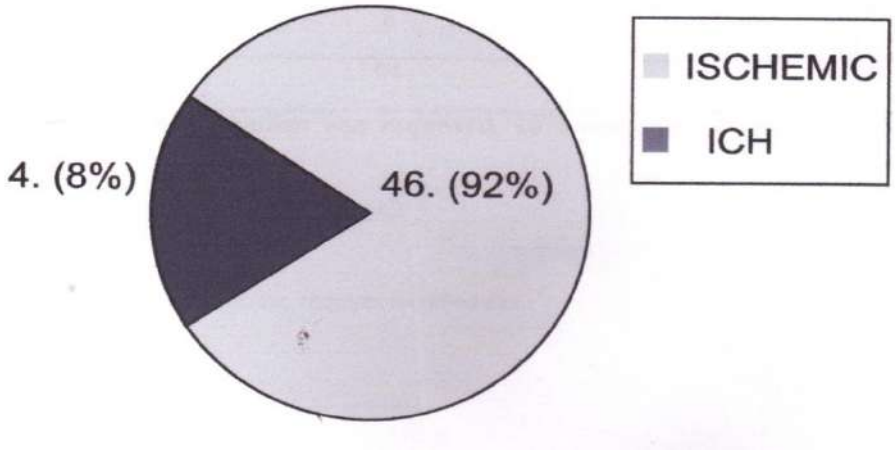


Figure-2: Types of stroke in the study subjects (N=50)

Discussion:

This study was carried out to determine the cardiac causes of stroke in young adults (18-45 years) in hospitalized patients in a tertiary care hospital of Dhaka city during the period of July to December 2009. All the patients were grouped in five age groups. Majority of the study subjects were above the 41 years of age. Bevan et al in his study of stroke in young adults also found similar picture & showed that only 4% occurred in <20years & 36 % in 41-45 years[9].

In our study there is slight male preponderance. This finding coincides with the study of Chowdhury et al &Kurzke et al which showed that frequency of stroke is 30% higher in men than women[10, 11].

Of the study subjects, 46(92%) patients had ischemic stroke while 8% had hemorrhagic stroke. This is similar with the findings of Alam et al, who found the incidence of ischemic stroke to be 93% & hemorrhagic stroke 7% in 1020 patients of stroke in Dhaka Medical College Hospital[12]. Hayee et al in their study found the incidence of ischemic stroke to be 83.89%[13].

Present study shows that 20% of stroke patients were suffering from hypertension. Bevan et al in showed that 31% of the patient with cerebral infarction had hypertension[9]. This present study also correlates with the western study where 33.33% stroke patients were unaware of hypertension & 41% were on irregular treatment[7,8]. Chowdhury et al studied 74 hypertensive patients who suffered stroke & found that 34% of the patients were not aware that they were hypertensive & 60.7% were on irregular treatment[14].

The present study shows 20% patients were smoker. Multiple individual studies have demonstrated that the risk of stroke is increased among the cigarette smokers. Donan et al have shown strong association between cigarette smoking & stroke[15]. Similar studies in Copenhagen & Finlandhas shown increased risk of stroke in smokers[16,17].

There is little doubt that, regular use of estrogen is associated with increased risk of stroke[18]. In this study out of 24 female patients, 53.33% patient had no history of taking oral contraceptive pill; 33.33% of patient was currently taking oral contraceptive pill. The use of oral contraceptive pill is associated with nine fold increase risk of cerebral infarction in women[19].In our study only 8% patients had previous history of stroke & only 10% had previous history of TIA.

Walker et al shows that 26% patients suffered acute stroke had past history of one or more episode of stroke which is higher than this present study[20]. The reason may be that the previous stroke or TIA was minor or misdiagnosed as health facility access is difficult for our people.

In this study, only 16 % of the patients were in sleep during attack & the rest of the patients were awake. It suggested acute mental stress is either a precipitant of stroke or an important underlying cause. Hayee et al found his study that 61 % of his study subjects suffered from acute stressful events before the attack of stroke[13].

In this study 92% of stroke patient were suffering from various forms of heart diseases. The Framingham study revealed that over 75% of stroke victims also had some form of cardiac diseases. Rheumatic valvular heart disease plus atrial fibrillation increases the risk of stroke by 17 fold[15]. IHD definitely augments the risk of stroke [18]. In another study, it has been shown that 24% of stroke patient had evidence of recurrent MI[21].

Cardiogenic cerebral embolus is one of the most common causes of ischemic stroke in this study, accounting for up to 92% of cases. Among the cardio embolic cause, the mitral valvular disease was the most common. Mitral valvular heart diseases were more prevalent in the female group in this study. Bevan et al showed that about 35.4% cerebral infarcts were due to cardio embolic source[9].

Limitations:

The study had several limitations. Protein C and Protein S could not be done in all cases. To detect cardiac mural thrombus, trans-esophageal echocardiography should have been done in all cases, which could not be arranged. Random sampling was not done, so there was chance of selection bias. Finally, the study was done in a hospital of the capital city, which may not reflect the picture of whole country.

Conclusion:

Stroke is one of the most important causes of morbidity and mortality in adults, and it imposes a significant burden on the person as well as the society when it occurs in the young. Therefore, it is of utmost importance to find out the causes of stroke in young age so that they can be prevented. The present study reinforces the previous knowledge that cardiac diseases are important risk factors for occurrence of stroke in young age. Therefore, in young patients with stroke, cardiac causes should be screened and appropriate measures should be taken topreventcardioembolization, thus to decrease the chance of recurrent stroke.

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Original Article

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Study on Health Effects of Teenage Pregnancies among the Patients Attending Antenatal Care Centre of Chittagong Medical College Hospital

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Abstract:

Teenage pregnancy is a public health concern both in developed and developing countries. This cross sectional descriptive type of study was conducted with a sample size of 150 from May 2013 to August 2014 in ANC centre of Chittagong Medical College. It is found that half of the respondents were from 15 -17 years age group, followed by 18 – 19 years (45, 30%). 20% of the adolescent mothers were below the age of 15 years. Only 46 percent of teenage pregnant women completed primary level of education followed by class eight (32%, 48) and 14% completed secondary level of education while 8% of them were illiterate. Most of the respondents (89.33%) were housewives and 71% got married below the age of 16 years followed by 16 -18 years (29.33%). About 40% of the respondents had a monthly family income from BDT 5,000 to 10,000, only 16% had monthly family income more than BDT 10,000. Among the respondents, 37.33% doesn't know how many ANC check up are needed for a mother and 40% knows that 4-5 times check up is essential during pregnancy. About three fourth (74.67%) of the respondents had no idea about Post Natal check-up (PNC). It is revealed from the study that most of them (32.67%) had sufficient knowledge about abortion, 23.33% know that prolonged pregnancy and 26% previous LUCS can pose risk to pregnancy, 38% respondents knew that smoking can be a risk factor for abortion, 23.33% and 20.67% respondents had idea that alcohol intake and heavy work might be risk factors for abortion respectively. It is evident that the strongest influencing factors on teenage pregnancy are poverty and education and decrease the opportunity of receiving health care facilities during pregnancy.

Keywords: Teen-age pregnancy, Antenatal care, Post natal care

Introduction:

Teenage pregnancy is a public health concernboth in developed and developing countries According to UNICEF and the Alan Guttmacher Institute more than 10% of all births worldwide occur to adolescent mothers[1,2]. Teenage pregnancies are considered problematic because complications from pregnancy and childbirth are the leading causes of death in teenage girls[3]. It is estimated that 70,000 female adolescents die each year because they are pregnant before they are physically mature enough for successful motherhood[4].

Bangladesh has a high maternal mortality ratio, with 170 deaths per 100,000 births[5]. Of those women who die, only one in four of babies will survive their first week of life. One in three teenage girls in Bangladesh is already a mother. Another 5 percent are pregnant with their first child. Maternal mortality for adolescents is double the national figure. The low status of women, poor quality and low uptake of services all add to this problem[6].

In Bangladesh risk of maternal mortality may increase fivefold among mothers aging between 10 and 14 years in comparison to adult woman[7]. Teenage pregnancies have become a public health issue both in developed and developing world[8-10]. According to UNICEF worldwide every 5th child is born to an adolescent mother. Young women are also at risk of unwanted pregnancies, sexually transmitted infections (STIs) and unsatisfactory or coerced early sexual relationships[11,12].

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Material and Method:

A Cross sectional descriptive type of study was conducted with a sample size of 150 from 1st May 2013 to 31 August 2014; all teenage pregnant women attending ANC centre of Chittagong Medical College Hospital were taken into consideration. Nonprobability purposive type of sampling technique was followed. Data were collected by face to face interview using pretested semi-structured questionnaire and document review. All collected data had been analyzed by statistical software SPSS version 16.

Result:

This cross sectional study was carried out in order to assess the health effects on teenage pregnancy among the patients attending ANC centre at Chittagong Medical College Hospital. A pre tested questionnaire was used to collect the information. It is found that half of the respondents were from 15-17 years age group followed by 18-19 years (45, 30%). 20% of the adolescent mothers were below the age of 15 years. Muslims were 92% (138) while only 12% of the young mothers were Hindu. Only 46 percent of teenage pregnant women completed primary level of education followed by class eight (32%, 48) and 14% completed secondary level of education while 8% of them were illiterate. Most of the respondents (89.33%) housewives and most of the respondents (71%) got married below the age of 16 years followed by 16 -18 years (29.33%). About 40% of the respondents had a monthly family income from BDT 5,000 to 10,000, only 16% had monthly family income more than BDT 10,000. Among the respondents, 37.33% doesn't know how many ANC check up are needed for a mother and 40% knows that 4-5 times check up is essential during pregnancy. From the above table 10 it is clearly we can say that most of the pregnant teenage mother doesn't have sufficient knowledge about antenatal check up. About three fourth (74.67%) of the respondents had no idea about Post Natal check-up (PNC). It is revealed from the study that most of them (32.67%) had sufficient knowledge about abortion, 23.33% know that prolonged pregnancy and 26% previous LUCS can poserisk to pregnancy, 38% respondents knew that smoking can be a risk factor for abortion, 23.33% and 20.67% respondents had idea that alcohol intake and heavy work might be risk factors for abortion respectively.

Table No. 1: Distribution of respondents by knowledge about danger signs during pregnancy (N=150)

Danger signs	Frequency	Percentage (%)
Hemorrhage	32	21.33
High fever	17	11.33
Sudden abdominal pain	11	7.33
Edema	27	18
Convulsion	45	30
Prolonged labor	18	12
Total	150	100

Table No. 2: Distribution of respondents in terms of decision making for using health care facilities during pregnancy (N=150)

Final Decisions on Health Care	Frequency	Percentage (%)
Respondents	35	23.33
Spouse	71	47.33
Respondent and husband jointly	48	32
Mother-in-law	69	46
Father-in-law	41	27.33

(Multiple response)

Access to mass media is an important determinant of health care services during the pregnancy. One in fourth of the respondents stated that they usually read newspaper/ magazine; similar percentage of the respondents (25.1%) listen radio and a vast majority (53.3%) of the respondents watch the TV.

Discussion:

A cross sectional study was carried out in order to assess the health effects on teenage pregnancy among patients attending ANC centre at Chittagong Medical College Hospital. The study population of this

descriptive study comprised 15-19 years teenage pregnant mother of Chittagong city. In the present study, the mean age of the teenage pregnant women was found to be 16.2 years. Majority of the respondents (50%) belongs to age group 15-17 years and 30% of them are in age group 18-19 years. It was found that the age of 20% of the teenage pregnancies were in between 12 to14 years which is much lower than the Bangladeshi legal age for marriage. Although for girls, the legal age for marriage in Bangladesh is 18, it is observed from this study that 38% of teenage pregnant women got married in between 13 to 15 years, 32.67% got married within 15 to 16 years i.e., more than 70% of the teenage pregnancies got married before their 17th birth day. A recent study in Rajshahi of Bangladesh reported that the median age at first marriage was found to be 16 years and median age at first conception among adolescent was 17 years[13]. Another study in the north-west districts of Bangladesh reported that the average ages at marriage was found to be 15.18 years and one half (50%) of the total population give first birth before the age of 19 years[14]. A large portion of marriages still take place before the legal age; around 79% of Bangladeshi women get married before the age of 20 years. Early marriage is a common phenomenon in Bangladesh with one-third of girls aged below 15 (33%) and nearly three- quarters aged below 18 years (74%) being married. Among the seven administrative divisions of Bangladesh, Rajshahi has the highest early marriage rate (81%) compared to the lowest in Sylhet (58%) [15]. Another study found that the mean age at first marriage was 16.57 years[16]. Socio-economic status, educational attainment, cultural factor and family structure were all identified as risk factors for teenage pregnancies in Bangladesh.[17] In a recent study it was demonstrated that the incidence of teenage pregnancies is significantly higher in the lower social classes (52%) than in the higher social classes (26%).[18] This study also found that Muslim teenagers are more likely to become pregnant than Hindu and Buddhist teenagers and most of the respondents are from low socio-economic status. Structural and social inequalities, poverty and gender all made young people extremely vulnerable to teenage pregnancy.[17,19] The study also shows that over 8% of the teen pregnancies had no education and 46% had primary education or had attended primary school and no one had completed higher education. Education could play a significant role in developing self-confidence, increasing age at first sexual intercourse and delaying marriage[20]. It is found that most of the adolescent were engaged in household works and dependent on their husbands. The issue of husband deciding about the continuation of pregnancy could be linked to the need to enhance young people's awareness, self efficacy and autonomy to enable informed decision- making and reduce unsafe and unwanted pregnancies[21].

Age at conception is significantly associated with pregnancy and delivery complications. Since majority of teenage girls are unaware of the process of conception and dangers of unplanned pregnancy before the onset of pregnancy, they have suffered from different complication during pregnancy and at the time of delivery.[22] Although from this study it is revealed that, many of the teenage pregnancies have knowledge about abortion, prolonged pregnancy, almost 100% teenage suffer from convulsion (30%), excess hemorrhage (21.33%), edema(18%), prolonged delivery, high fever, and sudden abdominal pain during pregnancy and at the time of delivery.

Low involvement of teenage girls in decision making also contributed to early pregnancy. Most adolescent marriages (80%) were arranged by parents without the girl's consent[7]. A higher proportion of adolescent pregnant women (67%) were found to be part of an extended family, of which just over half (51%) claimed that the authority over conception remains with their husband in spite of the teenagers' desire to make their own decisions[23]. In addition, teenage girls are also less likely to visit health service clinics without their husband's permission[24]. This study shows that almost 48% of the respondent's husband took decision to visit health care services, while in 46% cases respondents' mother- in-law become the deciding factor and only 23% of the respondent can took the decision by their own. These family structures and social norms have forced teenagers to give birth before they are emotionally or physically ready[17].

The risk of teenage pregnancy is significantly lower among adolescent who are visited by health worker regularly than non-visiting counterparts. A study in India found that younger adolescent mothers were less likely than older adolescent and adult mothers to have had the recommended number of antenatal check-ups had a delivery in a health facility or received a postpartum check-up[25]. In the present study it was observed that more than 37% teenage pregnant were not aware about antenatal care, while

only 40% of them attended antenatal care 4 to 5 times during whole period of pregnancy. More than 30% teenage mothers did not know the requirement of TT vaccine; more than 40% did not take TT vaccine. It was also revealed that more that 43% of the teen pregnant women were unaware of the necessity of Iron tablet. A significant proportion of teenagers (17-19 years) had a low coverage of antenatal care compared to adult mothers. Socio-economic deprivation remains significantly important, reflecting differential access to health services among teenage mothers[22, 26].

A study in Nepal indicated that the frequency of antenatal check up among teenage pregnant women is poor compared to the mothers in their twenties.[27] In this study it is seen that the teenage pregnancies of this region not only lagging behind in antenatal care but also in postnatal care. Only 25% of the respondents are aware of postnatal heath care. The possible reason for lower antenatal and postnatal care coverage by pregnant teenagers is lack of physical and mental maturity. In rural areas of Bangladesh it is also due to the fact that, women who are pregnant for the first time may be constrained in making decisions about their use of medical care, as mother-in-laws often expect adolescents to give birth at home with traditional birth attendants, and the young women have little or no influence on the decision[21].

Conclusion:

It is evident that women's education influences teenage pregnancy. The strongest influence of education on teenage pregnancy occurs through the profound impact of education on decreasing the early marriage rate, and finally its impact on receiving antenatal care. Moreover, the standard of living and is highly significant in reducing the likelihood of teenage pregnancy and poverty increases the early marriage rate and decreases the opportunity of receiving health care facilities during pregnancy.

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Original Article

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Identification of Different Clinical Features and Complications of Type 2 Diabetes Mellitus in Bangladeshi Males

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Abstract:

Background: Diabetes mellitus is a disproportionately expensive disease. In 2000, Bangladesh had 3.2 million people with diabetes and was listed at 10. It is suspected to occupy the 7th position with 11.1 million in 2030. Type 2 diabetes mellitus is the commonest form of diabetes 90 to 95% of the diabetic population. Recent World Health Organization (WHO) report on diabetes prevalence has alarmed that diabetes has posed a serious threat to the entire population of the world irrespective of stages of industrialisation and development. Diabetes registry in the referral centres and diabetes survey at the community level reflect the rapid increase of diabetes prevalence in the country. For example, only 389 diabetic subjects were registered at BIRDEM, a referral centre in Dhaka throughout the year1960. This figure increased to 1181, 2363, 9641 and 15188 in the year 1970, 1980, 1990, and 2000, respectively. Objective: To identify different clinical features and complications of type 2 diabetes mellitus in Bengali males.Methodology: It was a descriptive cross- sectional study carried out in the Health Education Department of BIRDEM. Fifty males were selected by systematic sampling. Data were analysed by SPSS version 15. Result: Of the clinical features, the most common included dry mouth (30%), fatigue (24%), thirst (20%) polyuria (18%). Other clinical features include delayed healing of sores (16%), difficulty in concentrating (14%), weight loss (14%), Hyperphagia (12%), Nocturia (12%). Among the three important complications nephropathy, retinopathy and neuropathy only in case of 2% cases nephropathy was present. Conclusion: Dry mouth, fatigue, thirst, polyuria, difficulty in concentrating, weight loss, are the most common clinical features in present study & common complications of type 2 diabetes mellitus is diabetic neuropathy.

Keywords: Type 2 diabetes, Diabetes neuropathy

Introduction:

Diabetes is group of metabolic diseases characterizehyperglycemia of diabetes is associated with long-term damage, dysfunction, and failure of differentbyhyperglycemia resulting from defects in insulin secretion, insulin action, or both. The chronic organs, especially the eyes, kidneys, nerves, heart and blood vessels. Several pathogenic processes are involved in the development of diabetes. These range from autoimmune destruction of the b-cells of the pancreas with consequent insulin deficiency to abnormalities that result in resistance to insulin action. Type 2 is the most common form of diabetes. In case of type-2 diabetes body does not use insulin properly. This is called insulin resistance at first pancreas makes extra insulin to make up for it. But, over time it isn't able to keep up and cannot make enough insulin to keep blood glucose at normal level.[1]

In type-2 diabetes, many people have no symptoms at all. As type- 2 diabetes is commonly (but not always) diagnosed at a late age, sometimes signs are dismissed as a part of 'getting older'. In some cases, by the time type 2 diabetes is diagnosed, the complications of diabetes may already be present.[2]

Materials and Methods:

This descriptive cross-sectional study carried out in the Health Education Department of BIRDEM Hospital Dhaka, from July 2008 to June 2009. Fifty (50) males were selected by systematic sampling fulfilling the selection criteria. Patients were diabetes

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for different duration. So associated clinical features and completions during diagnosis of Diabetes mellitus were taken from history and also recorded present status during data collection. Data was collected by face to face interview using questionnaire. Data analyses was done by using software SPSS version-15

Results:

Table 1: Frequencies of different clinical features at diagnosis (N=50)

Clinical features	Frequency (no.= 50)	
	no. of respondent	%
Asymptomatic state	3	6
Blurring of vision	2	4
Delayed healing of sores	8	16
Difficulty in concentration	7	14
Dry mouth	15	30
Fatigue	12	24
Headache	5	10
Hyperphagia	6	12
Irritability	3	6
Mood change	4	8
Nocturia	6	12
Numbness / paraesthesia / Pins and needles / burring sensation	0	0
Polyuria	9	18
Thirst	10	20
Ulcer in foot	0	0
Weight loss	7	14

Table 1 showing: The clinical features at diagnosis prevalent in the patients included dry mouth (30%), fatigue (24%), thirst (20%), Polyuria (18%), Delayed healing of sores (16%). Three other important clinical features did not show that much of prevalence. They were: weight loss (14%), Hyperphagia (12%), Nocturia (12%). Asymptomatic state was found in 6% cases.

Table 2: Frequencies of different clinical features at present (N=50)

Clinical features	Frequency (N=50)	
	No. of respondent	%
Asymptomatic state	3	6
Blurring of vision	0	0
Delayed healing of sores	0	0
Difficulty in concentration	10	20
Dry mouth	8	16
Fatigue	7	14
Headache	3	6
Hyperphagia	5	5
Irritability	4	8
Mood change	4	8
Nocturia	3	6
Numbness / paraesthesia / Pins and needles / burning sensation	1	2
Polyuria	3	6
Thirst	3	6
Ulcer in foot	0	0
Weight loss	6	12

Table 2 showing: The clinical features at present prevalent in the patients included difficult in concentrating (20%), Dry mouth (16%), Fatigue (14%), Hyperphagia (10%) & weight loss (12%). Other clinical feature was not very remarkable.

Table 3: Frequencies of different complications of type 2 diabetes mellitus at diagnosis

Complication	Frequency (N= 50)	
	No. of respondent	%
Diabetic nephropathy	0	0
Diabetic neuropathy	0	0
Diabetic retinopathy	0	0

Table 3 showing: Out of 50 patients at diagnosis no one had any complications.

Table 4: Frequencies of different complications of type 2 diabetes mellitus at present

Complication	Frequency (no.= 50)	
	No. of respondent	%
Diabetic nephropathy	0	0
Diabetic neuropathy	1	2
Diabetic retinopathy	0	0

Table 4 showing: At present out of 50 patients only in 1 (2%) case diabetic neuropathy was present (N=50)

Discussion:

Hyperglycaemia causes a wide variety of symptoms, such as blurring of vision, balanitis, dry mouth, difficulty in concentrating, delayed healing of sores, fatigue, hyperphagia, headache, Irritability, mood change, numbness / paraesthesia / pins and needles / burning, nocturia, polyuria thirst, weight loss. The classical symptoms of thirst polyuria, nocturia and rapid weight loss are prominent in type 1 diabetes but are often absent in patient with type 2 diabetes, many of whom are asymptomatic or have non-specific complaints such as chronic fatigue and malaise. Uncontrolled diabetes is associated with an increased susceptibility to infection and patients may present with skin sepsis (boils) and genital candidiasis and complain of balanitis.[3]

The present study showed that 4% of the cases had the history of blurring of vision at diagnosis. 30% of the cases had the history of dry mouth at present and 16% at diagnosis. Sixteen percent of the cases had the history of delayed healing of sores at diagnosis. Twenty four percent of the cases had the history of fatigue at diagnosis and 14% at present. Twelve percent of cases had the history of hyperphagia at diagnosis and 10% at present. Ten percent cases had the history of headache at diagnosis and 6% at present. Six percent of the cases had the history of irritability at diagnosis and 8% at present. Eight percent of the cases had the history of mood change at diagnosis and 8% at present. Two percent of the cases had the history of numbness at present. Twelve percent of cases had the history of nocturia at diagnosis and 6% at present. Eighteen percent of the patient had the history of polyuria at diagnosis and

6% at present. 2% of the cases had the history of thirst at diagnosis and 6% at present. 14% of the cases had the history of weight loss at diagnosis and 12% at present. Six percent of the cases were asymptomatic at diagnosis and 6% at present.

Many patients with type 2 diabetes remain asymptomatic, and their disease is undiagnosed for many years, studies suggest that a typical patient with new-onset type 2 diabetes will have diabetes for at least 4 to 7 years before it is diagnosed.[4] Among patients with type 2 diabetes, 25% are believed to have retinopathy, 9% neuropathy, and 8% nephropathy at the time of diagnosis.[5]

Long term complication develop over many years. Blood glucose levels out of range for a long period of time can cause retinopathy, nephropathy, and diabetic neuropathy. Among the three complications that were looked for in the present study, only one (neuropathy) was present in one patient at the time of the interview. Diabetic neuropathy occurs in approximately 50% at individuals with long-standing type 2 diabetes mellitus.[6]

Conclusion:

Signs & symptoms of type 2 diabetes often develop slowly. In some cases, by the time type 2 diabetes is

diagnosed the complications of diabetes may already be present. The difference in clinical features and complications among the patients should get special attention in order to develop proper understanding of aetiology and pathophysiology of type 2 diabetes.

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Review Article

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Female Genital Tuberculosis- A Review Article

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Abstract

Pulmonary Tuberculosis (TB) is the primary and most common presentation but extra-pulmonary tuberculosis has shown an increase in developing countries like India, Bangladesh, even after years of implementation of National tuberculosis Control Programme. Female genital tract TB is one of the commonest types of extra pulmonary tuberculosis and clinically, infertility is the most common presentation. Most patients present with complaints of pain in abdomen insidious in onset continuous dragging in nature, dysuria, and fever. Some patients may present primarily with infertility with or without other symptoms. Culture of acid fast bacillus, with Polymerase Chain Reaction (PCR), Hysterosalpingogram, computed tomography scan of abdomen, laparotomy followed by endometrial histopathology are considered to be the best available modalities for diagnosis of tuberculosis in infertility at early stage.

Keywords: Extra-pulmonary tuberculosis, Female genital tract TB, Polymerase Chain Reaction

Introduction:

Genital tuberculosis (TB) in females is by no means uncommon, particularly in communities where pulmonary or other forms of extragenital TB are common. Mycobacterium Tuberculosis is a bacterium which can affect any organ in the body, can exist without any clinical manifestation, and can recur[1]. In some cases the TB infection moves through the blood to other parts of the body. It can thus cause secondary infections in the genital tract, pelvic area, kidneys, spine and brain. When the bacterium reaches the genital tract it causes genital tuberculosis or pelvic TB. It affects the genital tract (in both men and women), fallopian tubes, uterus, and ovaries. In some cases it also affects the cervix, vagina and vulva[2]. Genital tuberculosis is one of the major causes of tubal disease and female infertility in developing countries[3].

Causative factors in female Genitourinary tuberculosis (GUTB):

The most common pathogen associated with tuberculosis (TB) is Mycobacterium tuberculosis, a strictly aerobic bacterium. The bacterium grows slowly, dividing only once every 24 hours, and is capable of surviving within immune cells after phagocytosis. Uncommonly implicated pathogens include M kansasii, M fortuitum, M bevies, M avium-intracellulare (MAI), M xenopi, M celatum[1]. The usual presentation of Female GUTB changes with HIV co-infection. Mycobacterium tuberculosis elicits production of pro-inflammatory cytokines like TNF á, which up-regulates intra-cellular retroviral replication. HIV specifically infects CD4 cells, resulting in their depletion and dysfunction. Macrophage function is also abnormal because of direct infection, coupled with lack of macrophage activation factors produced by CD4, thus facilitating rapid progression of tuberculosis. This may explain the presence of acid and alcohol fast bacilli (AAFB) in such numbers to be easily appreciated on microscopy[4].

Prevalence of female GUTB:

The worldwide prevalence of tuberculosis is still high and has remained almost unchanged over the past century as a result of increasing incidence in countries of the Third World. GUTB is the second most common form of extra pulmonary tuberculosis[5].

Almost one-fifth of United States tuberculosis cases are extrapulmonary; unexplained slower annual case count decreases have occurred in extrapulmonary tuberculosis (EPTB), compared with annual case count decreases in pulmonary tuberculosis (PTB) cases. Genitourinary TB comprises approximately 6.5% of the extra pulmonary cases[6].

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General presentation:

Clinical presentation is extremely variable depending on the site involved. It may present as chronic pelvic inflammatory disease unresponsive to therapy and infertility due to extensive tubal destruction and is a common presentation not amendable by reconstructive tubal surgery[7, 8].

Persons with GUTB rarely display the typical symptoms of TB. GUTB Symptoms are generally chronic, intermittent, and nonspecific, although asymptomatic patients are not uncommon. GUTB often manifests as repeated urinary tract infections that do not respond to the usual antibiotics. The most common symptoms with which the patients have presented are in the form of irritative voiding, which are found in more than 50% of the patients. The other symptoms in GUTB can be fever, weight loss, anorexia, backache, and abdominal pain[9]. Urinary urgency is relatively uncommon unless the bladder is extensively involved.

Table 1: Presenting Complains of Female Genital Tuberculosis analysis at Gynae OPD of DCIMCH

Symptom	n	%
Infertility	20	44.5%
Dysmenhorrea	6	14.4%
Amenorrhea	7	16%
Abdominal pain	17	42.5%
Dysparunia	2	5%
Others	18	42.5%

Unexplained infertility in women is sometimes attributable to GUTB. Physicians have also diagnosed endometrial TB while seeking the cause of congenital TB in the newborn.

Table-2: Frequency of tuberculosis in genital organs:

Organ	Frequency (%)
Fallopian tubes	90–100
Endometrium	50–60
Ovaries	20–30
Cervix	5–15
Vulva and vagina	1

How does female genital TB spread?

Persons are most likely to get TB if she has low immunity and spend a long time in close contact with an infected person. Brief contact with an infected person while, say, commuting on buses or trains, watching a movie in a theatre, sharing food, talking or shaking hands, will not give her TB. Only people who have an active infection of TB in the lungs are infectious. When they sneeze or cough, TB is spread, quite like the common cold. When a person breathes in the TB bacterium, it settles in the lungs and begins to grow[10].

Women who have pulmonary (lung) TB develop uterine and pelvic TB over a period of time, if it is left untreated. Genital tuberculosis may also spread due to sexual contact with an infected person.

How common is female genital TB in Bangladesh?

The nation-wide TB prevalence survey was implemented by ICDDRB, NTP, NIDCH, BRAC, Damien foundations but data for genital TB is unavailable. In most cases it is latent. Latent means that the person is infected with the bacteria, but does not have the disease. People with latent tuberculosis are not capable of infecting others. However, in around one percent of cases, they could develop active tuberculosis later in life, especially if the immune system gets weakened. Genitourinary tuberculosis accounts for about 15% of all extra pulmonary tuberculosis and after lung is the most common site[11]. Pelvic TB is common in female gender so gynecologist need to be aware that tuberculosis may present in an atypical manner.

What are the symptoms of female genital TB?

- Female genital TB is usually a silent infection with no apparent symptoms as the bacteria may remain latent in the body for as long as 10 to 20 years. However, some of the symptoms to watch out for include:
- Irregular menstruation cycle.
- P-pelvic pain
- V-vaginal discharge that is stained with blood or which is persistent, heavy and discolored
- B-bleeding after intercourse
- I-infertility.

Tuberculosis of the Fallopian Tubes:

Genital tuberculosis usually spread to genital site from three routes, including hematogenous, lymphatic or adjacent viscera , while it most commonly affects the fallopian tubes (95-100%), followed by the endometrium (50-60%), ovaries (20-30%), cervix (5-15%), and vulva/vagina (1%) and the myometrium (2.5%) [1,6]. Various sources on the topic of genital TB appear to agree that the fallopian tubes are likely the initial source of infection, because both tubes are involved in nearly 95-100% of cases. The fallopian tubes constitute the initial focus of genital TB in the overwhelming majority of cases (Table:2), and TB has accounted for approximately 5% of all cases of salpingitis in many areas of the world.In more than 90% of patients with genital TB, the tubes are involved bilaterally. Although only one tube appears infected, there probably are microscopic lesions in the other. In the early stages, the tubes show little change, but as progression occurs, the diameter of the tube becomes larger. Usually, the ampullary region shows the earliest and most extensive changes, the fimbrial processes become greatly swollen, and the ostia remain open or closed. The gross appearance varies and is non diagnostic; the tubes may appear normal or only slightly edematous but are much more likely to present a picture consistent with chronic salpingitis of a nontubercular nature[1].

Tuberculosis of Pelvis:

Pelvic TB may exist as tuberculous adenitis, of either the mesenteric or the pelvic lymph nodes, without involvement of the genital tract. Generalized miliary peritoneal TB, in which grayish white tubercles stud the abdomen, may involve the serosal surface of both abdominal and pelvic organs without penetrating to the mucosa. Such superficial lesions do not usually impair the reproductive function of the pelvic organs. It should be emphasized that pelvic TB is not the same disease as genital TB[1, 3, 6].

Mode of spread from Tubes:

After the initial involvement of the tubes, the tuberculous infection spreads to the uterus and ovaries by direct extension. Extension to the uterus is along the endometrium and rarely into the myometrium. Direct hematogenous spread to the uterus as part of a generalized hematogenous TB has rarely been reported.

The ovaries may be involved by direct spread from adjacent organs. In most cases, infection spreads from the tube, and the lesion is seen on the surface of the ovaries. Rarely, the infection extends from the peritoneum to the ovary. Hematogenous spread usually affects the center of the ovary, and the periphery appears normal.

The cervix is involved by spread from the endometrium or as part of the hematogenous infection. Tuberculous infection of the vagina and vulva may follow injury or abrasions to these structure in the presence of tubercle bacilli from the upper genital tract, intestinal tract, or lungs.

Some authority find that the use of antituberculous drugs has tended to change the clinical picture of the disease, resulting in a decreasing incidence of acute forms and an increasing incidence of subacute and chronic forms.

Tuberculosis of the Endometrium:

Grossly, the size and shape of the uterus may appear normal. The tuberculous process generally is localized to the endometrium, is most extensive in the fundus, and decreases toward the cervix. The myometrium is not usually involved. In premenopausal patients, much of the infected tissue is shed during the menstruation, only to have the endometrium reinfected from the tubes with each cycle[6].

In genital TB, there is a high incidence of involvement of the endometrium. Schaefer reported an incidence of 50–60%; Onuigbo, an incidence of 60%, and Nogales-Ortiz and coworkers an incidence of 79%, whereas Sutherland estimated 90% involvement of the endometrium in genital TB[1].

In a large series of 1436 cases, Nogales-Ortiz and coworkers found 79% involvement using extensive endometrial sampling. Grossly, the endometrium appears unremarkable in most cases, probably because of the cyclic menstrual shedding. However, when extensive involvement of the endometrium occurs, there may be ulcerative, granular, or fungating lesions present, or the endometrial cavity may be obliterated with intrauterine adhesions. Sometimes, the macroscopic appearance may resemble carcinoma, and TB has been suggested microscopically[1].

In 2.5% of cases of tuberculous endometritis, Nogales–Ortiz and coworkers, Schenker and Margalioth, and Hasselgren and Bolinnoted total

destruction of the endometrium with resulting amenorrhea secondary to end-organ failure and predisposition to pyometra should the internal os becomes occluded[1].

Tuberculosis of the Ovary:

There is disagreement in the literature regarding the frequency with which the ovaries are involved. Some studies estimate 20–30%, whereas a review of a large series of pathologic specimens found involvement in only 11% of cases. This is likely explained by varying definitions of involvement, because the latter source uses a stricter definition of true parenchymal granulomatous involvement.Usually, the involvement is bilateral, although this cannot always be recognized with certainty at laparotomy. Two forms of ovarian TB are described: perioophoritis, in which the ovary may be surrounded by or encased in adhesions and studded with tubercles caused by directextension from the tube; and oophoritis, in which infection starts in the stroma of the ovary, presumably from a hematogenous source that produces a caseating granuloma within the parenchyma. Isolated ovarian tuberculosis is rare. Its presentation can mimic that of an ovarian malignancy, including an ovarian mass, ascites and a rise in CA-125 level. It should be kept in mind as a differential diagnosis, both in developing and developed countries[1, 12].

Tuberculosis of the Cervix:

The cervix appears to be involved in 5–25% of cases, whereas involvement of the external genitalia occurs only rarely. The usual incidence of cervical involvement in genital TB is 5–15%. However, Nogales-Ortiz and Villar thought that cervical lesions were more common, especially in the endocervix, which was frequently overlooked.

As with other parts of the female genital tract, there are no macroscopic changes in the cervix that are specific for TB. The cervix may appear normal or inflamed, and its condition may resemble invasive carcinoma, both grossly and with the colposcope. The most common type is the ulcerative form, although papillomatous and miliary forms may also occur[1].

Tuberculosis of the Vulva and Vagina:

TB of the vulva and vagina is the rarest form of genital TB, occurring in less than 2% of cases. In most cases, the lesions appear to be secondary to disease higher up in the genital tract but, rarely, the disease may be acquired from the male partner with an infected epididymis or seminal vesicles. In the vulva, it begins as a nodule on the labia or in the vestibular region, which breaks down and forms an irregular ragged ulcer, sometimes with sinuses discharging caseous material and pus. TB of Bartholin's gland is rare. Rarely, a vulvar lesion presents as a hypertrophic, irregular warty growth sometimes resembling elephantiasis. A tuberculous lesion in the vagina may simulate carcinoma in its gross appearance[1].

How is female genital TB Diagnosed?

Female genital tuberculosis diagnosis is difficult, as most patients lack obvious symptoms, few positive signs and therefore often overlooked in the diagnosis. In order to improve the rate of diagnosis, patients should be asked in detail about the history, especially when patients have primary infertility, menstrual scarcity or amenorrhea; unmarried young women have a low-grade fever, night sweats, pelvic inflammatory disease or ascites; chronic pelvic inflammatory disease permanently; previous history of exposure to tuberculosis or suffered from tuberculosis, pleurisy, intestinal tuberculosis, should consider the possibility of genital tuberculosis.

The diagnosis can be made with certainty only by histologic or bacteriologic examination. If bacteriologic examination of endocervical mucus was performed for tuberculous infection, as is done with infertility problems, any cases of tuberculous cervicitis could possibly be discovered. The cytopathologic examination of the cervix may reveal multinucleated giant cells, histiocytes, and epithelioid cells arranged in clusters, simulating the appearance of the granulomata that are characteristic of the Papanicolaou (Pap) smear in cervical TB. There may be associated epithelial atypia from which dyskaryotic cells are shed[1].

More than 75% of the patients with active, culture proven genital tuberculosis have a normal chest X-ray. It is important not to use a chest X-ray as exclusion for the diagnosis of genital tuberculosis. The gold standard remains the proof of acid-fast bacilli in biological specimens or culture. In patients presenting with sub-fertility and/or abnormal bleeding, a culture of menstrual fluid may be the most useful strategy.Culture of mycobacterium tuberculosis on Lowenstein-Jensen medium is the most accurate diagnostic method. Microscopic examination of acid-fast bacilli (AFB) requires the

presence of at least 10 000 organisms per milliliter in the sample. Culture is more sensitive, requiring only 100 organisms per milliliter. However, culture may take up to eight weeks to grow on LJ medium.[13]

PCR is a rapid, sensitive and specific molecular biological method applied in the laboratories to diagnose multitudes of diseases. PCR based diagnosis of TB has been evaluated to be useful and important in the detection of pulmonary as well as extra-pulmonary TB[14].

In cases of suspected pelvic tuberculosis, several biopsies should be taken during laparotomy for histology and swabs should also be taken for bacilli culture. Biopsies may show the typical histology, which includes granulomas and positive acid-fast stain. Other typical features of tuberculosis on histology are epithelioid cell granuloma with or without Langerhans's giant cells. Laparoscopy may be a very good way of diagnosing active genital tuberculosis. Other imaging techniques may be of diagnostic importance. Hysterosalpingogram is a fairly simple test with a high yield[13].

Definitive diagnosis of TB requires isolation of tubercle bacilli via culture, although diagnosis based on histologically characteristic granulomata is accepted by most authorities. Most experts recommend some form of endometrial sampling for histologic and microbiologic examination to make the diagnosis of genital TB. Because the endometrium is involved in the majority of cases and is readily accessible to sampling, it is often the first site, at which attempts at definitive diagnosis are directed[1].

How is female genital TB treated?

A supportive therapy in patients with acute genital tuberculosis need bed rest, should rest for at least 3 months, chronic patients can engage in some light work, but to pay attention to work and rest, better nutrition, appropriate to participate in physical exercise, enhance physical fitness.

The Anti-Koch's therapy, for genital TB is the same as for lung TB or any other form of TB[5]. It is a course of anti-Koch's chemotherapy that lasts about six to eight months. It is important to complete the entire course of the treatment.

While the treatment offers relief from pain, fever or discharge, it cannot repair the fallopian tubes, if they have been affected. Therefore, it is advisable to take a second opinion before starting anti-TB medicines. Although chemotherapy is the mainstay of treatment, surgery may be indicated where medical therapy has failed to resolve symptoms and in presence of a persistent pelvic mass. In these circumstances, total abdominal hysterectomy is the operation of choice, while bilateral salpingo-oophorectomy may be considered if the ovaries are severely involved[2].

Remember, once you begin the treatment, it will no longer be possible to confirm the diagnosis of TB as the medication will kill the bacteria.

Female genital TB and infertility:

Infertility is one of the leading presenting symptoms of patients with genital tuberculosis. The fallopian tubes are involved in most cases of genital tuberculosis and, together with endometrial involvement, cause these patients to become infertile. The prevalence of genital tuberculosis in the infertile population in developing countries is between 5% and 20% and it is even higher among patients with tubal factor infertility (39% to 41%). Genital tuberculosis should therefore always be considered as a probable cause in the diagnostic work-up of infertile couples, especially in populations with a high prevalence of tuberculosis – even in the absence of a previous history of tuberculosis[13].

In women, genital or pelvic TB usually affects the fallopian tubes causing tubal obstruction, which cannot be reversed. Female genital tuberculosis is still a major cause of infertility in India in spite of the availability of specific therapy.
If the TB is diagnosed at an early stage and the infection is treated, the damage to the uterus or fallopian tubes may heal. If left untreated for long, TB in the fallopian tubes, ovaries and uterus may not heal and lead to scarring[14]. Scarring of the uterus usually results in scanty periods. In some, the menstrual periods may completely stop because the uterine lining may be badly affected. Unfortunately, in these cases women may not be able to conceive.

Conclusion:

Female genital tuberculosis is more common in developing countries, especially in Asia and Africa

and usually a secondary infection from lung or other sites like abdomen. Infertility is the commonest presentation of genital TB due to the involvement of fallopian tubes, endometrium and ovarian damage with poor ovarian reserve and volume. Other main symptoms include menstrual dysfunction, especially oligomenorrhoea, amenorrhea, chronic pelvic pain and vaginal discharge. Diagnosis of female genital tuberculosis is made by good history taking, through clinical examination and judicious use of investigations. Appropriate dosage and adequate time are necessary for proper treatment.

Since the incidence of genital tuberculosis has been increased during the past two decades, the clinicians increasingly faced with cases of genital TB and its consequences such as infertility, so reviewing of these features are considered in differential diagnosis of the causes of infertility and timing intervention and treatment.

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Case Report

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Round Worm induced Acute Appendicitis- an Incidental Finding during Colonoscopy

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Introduction:

Serious complications related to Ascaris infection have been well documented in the literature. Intestinal obstruction by a bolus of worms is the most common Ascaris-related emergency. Other acute conditions include hepatobiliary and pancreatic ascariasis, acute appendicitis, peritoneal granulomas, small-bowel volvulus, and intussusception. Many of these conditions can often be managed with conservative medical therapy. Occasionally, immediate surgical intervention is required[1]

Here we are presenting a case of 20-years-old male who was diagnosed incidentally as a case of ascarid (round worm) induced acute appendicitis during colonoscopy for evaluation of chronic rectal bleeding and new onset of right lower quadrant abdominal pain.

Case Report:

A 20 years old man was referred for full colonoscopy. He had the history of perianal pain and rectal bleeding for few weeks. Two days before colonoscopy referral he developed mild intensity right lower quadrant abdominal pain without any nausea, vomiting, fever and alteration of bowel habit. Before colonoscopy clinical examination revealed soft abdomen, mild tenderness in the right lower quadrant, but there were no rebound tenderness or peritoneal signs. His general and other systemic examination findings were unremarkable.

Proctoscopic examination revealed posterior anal fissure. During colonoscopy an anal fissure seen in previously mentioned area. Colonscope was intubated up to 10 cm of terminal ileum which was found to be normal. A large dead ascarid was found in cecum, partly in cecal lumen and partly inside appendiceal lumen. The mucosa surrounding appendiceal orifice was swollen and edematous with some erythemae. Pus was seen to come out from the appediceal lumen by the side of the dead ascarid. The ascarid was removed by biopsy forceps. After removal more pus came out of the appendiceal lumen. The colonoscope was advanced towards the appendiceal lumen, irrigation was done with water jet and finally cleared by suction.

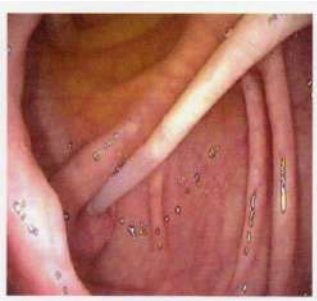


Figure-1: Dead ascarid within appendix



Figure-2: Close-up shows swollen Deadappendiceallume appendiceallumen



Figure-3: Ascrid removed by forceps



Figure-4: Pus in the appendiceal lumen after removal of ascarid

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Figure-5: Appendiceal lumen after washing

In the immediate postprocedure period patient reported that his pain had subsided. His total and differential counts of leucocytes were normal. He was prescribed with oral cefixime and metronidazole for 7 days, and single dose of albendazole. He was followed clinically in the next day and 7 days later with complete clinical recovery.

Discussion:

Ascarislumbricoides, an intestinal roundworm, is one of the most common helminthic human infections worldwide. Highest prevalence intropical and subtropical regions, and areas with inadequate sanitation. It is estimated that more than 1.4 billion people are infected with A. lumbricoides, representing 25 percent of the world population. A number of features account for its high prevalence including a ubiquitous distribution, the durability of eggs under a variety of environmental conditions, the high number of eggs produced per parasite, and poor socioeconomicconditions that facilitate its spread. Transmission is enhanced by the fact that individuals can be asymptomatically infected and can continue to shed eggs for years, yet prior infection does not confer protective immunity[2].

Life Cycle – Adult worms live in the lumen of the small intestine. A female may produce approximately 200,000 eggs per day, which are passed with the feces. Unfertilized eggs may be ingested but are not infective. Fertile eggs embryonate and become infective after 18 days to several weeks, depending on the environmental conditions (optimum: moist, warm, shaded soil). After infective eggs are swallowed, the larvae hatch, invade the intestinal mucosa, and are carried via the portal, then systemic circulation to the lungs. The larvae mature further in the lungs (10 to 14 days), penetrate the alveolar walls, ascend the bronchial tree to the throat, and are swallowed. Upon reaching the small intestine, they develop into adultworms. Between 2 and 3 months are required from ingestion of the infective eggs to oviposition by the adult female. Adult worms can live 1 to 2 years[2]. (CDC's Parasite and Health Page about intestinal ascariasis).

Clinical Features:

The majority of infections with A. lumbricoides are asymptomatic. However, the burden of symptomatic disease worldwide is still relatively high because of the high prevalence of disease. Clinical disease is largely restricted to individuals with a high worm load[3]. When symptoms do occur, they relate either to the larval migration stage or to the adult worm intestinal stage. Pathophysiologic mechanisms include-

- Direct tissue damage
- The immunologic response of the host to infection with larvae, eggs or adult worms[2]
- Obstruction of an orifice or the lumen of the gastrointestinal tract by an aggregation of worms
- Nutritional sequelae of infection[4]

The symptoms and complications of infection can be classified into the following:

1. Pulmonary and hypersensitivity manifestations
2. Intestinal symptoms
3. Intestinal obstruction
4. Acute Appendicitis
5. Hepatobiliary and pancreatic symptoms

Our patient was diagnosed as a case of acute appendicitis incidentally during colonoscopy for the evaluation of chronic rectal bleeding and recent onset of right lower quadrant abdominal pain.

Diagnosis:

The diagnosis of ascariasis is usually made via stool microscopy. Other forms of diagnosis are through eosinophilia, imaging, ultrasound, or serology examination[2]. Ascarid can be seen during upper and lower gastrointestinal endoscopy.

Treatment- The mainstays of treatment currently are the benzimidazoles, mebendazole and albendazole. However, they should not be given during pregnancy because of possible teratogenic effects. Thus,

pyrantelpamoate should be used in pregnancy. In a randomizedstudy conducted among 2,294 children aged 6 to 12 years in Zanzibar, single dose mebendazole and albendazole were both found to have efficacies greater than 97 percent[4].

Conclusion:

Ascaris lumbricoides can be asymptomatic but can give rise to serious and fatal complications. So, periodic deworming at 2-3 months interval is highly recommended to prevent nutritional and other complications.

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