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Instruction for the Authors

The Journal of Ad-din Women's Medical College (ISSN 2313-4941) is an official organ of the Ad-din Women's Medical College, Dhaka and published in the months of January and July. It is recognized by the Bangladesh Medical and Dental Council (BMDC). The journal publishes original articles, review articles, case reports and society news. The articles submitted in this journal should not have been published in any other journal before. All submitted papers are reviewed by the reviewers and the editorial board. The unaccepted articles are not sent back. Proofs correction by the authors is well appreciated.

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Papers are accepted for publication with an understanding that they are submitted solely to the journal of Ad-din Women's Medical College and are subject to peer review and editorial revision. Statement and opinion expressed in the papers, communications letter herein are those of author and not necessarily of the editor or publisher. Papers should be submitted with three hard copies and a soft copy (CD) labeled clearly with the title of the article, authors' names with designations, date, mobile no. and email address to the Executive Editor, journal of Ad-din Women's Medical College, 2 Bara Moghbazar, Dhaka-1217.

Form of full papers submitted for publication

The manuscript should be prepared using MS-Word. Full paper should be not more than 4000 words long. The manuscript (title page, abstract, text, references) should be submitted as one document. All parts of the manuscript should be type or print on only one side of the paper with wide margins of at least 2.5 cm and using double space throughout. The preferred font is "Times New Romans" size 12. Numbering of the pages should be done consecutively, beginning from the title at the lower right hand corner of each page. Each component of the manuscript should begin on a new page in the sequence of title page, abstract, text, reference, tables and legends for illustration.

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The title page should include the title of the article which should be concise (not more than 45 characters) but informative, name of the author(s) with highest academic degree(s), institutional affiliation, name of the departments to which the work should be attributed. The complete mailing address and email address of the author should be included to whom proofs and correspondence should be sent.

Abstract

Each paper requires an abstract (includes Objective, Methods, Results, Conclusion and Key words) of not more than 150 words in unstructured abstracts (review article or case report) or 250 words for structured abstract (original article) summarizing the significant information and findings. Authors must give two to five key words that identify the most important subjects covered by the paper. Abbreviations, diagrams, and references in the abstract should be avoided.

Text

The body of the text should be divided into the following sections: Introduction, Materials and Methods, Results (include tables and diagrams), Discussion and Conclusion.

Introduction

It includes the purpose of the study or the rationale for the study or the summarized observations. Only strict pertinent references to be given but data or conclusion from the work should not to be included.

Material and methods

In this section, selection of the observational or experimental subject (patient or laboratory animals, including control) should be described clearly. The age, sex and other characteristics of the subjects should be identified. The methods, apparatus, and procedure used in the study with sufficient details should be mentioned properly to allow other worker to reproduce the result. References should be given to establish methods, including statistical methods. Precisely identification

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Results

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Tables and Figures

Tables should be embedded in the text and numbered consecutively in the order of their first citation in the text. The title of the table should be self explanatory and brief. Tables should not be submitted as photograph. All figures should be included as one separate sheet or file if possible. A short descriptive title should appear above each table with a clear legend and any footnotes suitably identified below. Figures should be completely labeled, taking into account necessary size reduction. Captions should be typed, double-spaced, on a separate sheet. All original figures should be clearly marked in pencil on the reverse side with the number, author's name, and top edge indicated.

Footnotes

Place explanatory matter in footnote, not in the heading. For uniformity of style, authors should use symbols for footnotes such as *, §†,‡.

Illustrations

Illustrations submitted (line drawings, photos, photomicrographs, etc.) should be clean original or digital files. Digital files are recommended for highest quality reproduction and should following criteria :

- Minimum 300 dots per inch (DPI) or higher
- Appropriate sized to fit in journal page
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- Should be submitted as separate files, not embedded in text files.

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This section should present comprehensive analysis of the results in the light of relevant previous study. It should emphasize the new and important aspect of the study and the conclusions that follow from them. Repetition of detailed data or other materials given in introduction or result section should be avoided.

Conclusion

Should be linked with the goals of the study. Recommendation may be included when appropriate and it can include the implication of the findings and their limitations.

Acknowledgements

Acknowledgements, if any, should be placed at the end of the body of the text and be limited to no more than 100 words. This section may be used to acknowledge the help of those who do not qualify for authorship or to acknowledge funding, donated resources, or significant material contributions to the research.

References

Should be given in the text using Vancouver system. They should be numbered consecutively in the order in which they first appear in the text using superscript. If a reference is cited more than once the same number should be used each time. References cited in only in tables or figure legends should be numbered in accordance with the sequence from the last number used in the text and in the order of mention of the individual tables and figures in the text. At the end of the paper, on a page(s) separate from the text, references should be listed in numerical order. References to materials available on websites should include the full internet address and the date of the version cited as: Authors' names (in normal order), document title, date of Internet publication or other retrieval information (date of access), text division (if applicable). Examples of references are given bellow.

Journal

1. Parkin DM, Clayton D, Blook RJ, Massyer E, Fried HP, Iranov E et al. Childhood leukaemia in Europe after Chernobyl: 5 years follow up. Br J Cancer 1996; 73: 1006-1012
2. Paganini HA, Chao A, Ross RK, Henderson BE. Aspirin use and chronic diseases: a cohort study of the elderly. BMJ 1989; 299: 1247-1250

Book

1. Gyton AC, Hall JE. The thyroid metabolic hormones. In: Textbook of medical physiology. 10th edn. New Tork: W B Saunders Company, 2000: 858-868

Internet

1. Harverd medical school. Available at: https://en.wikipedia.org/wiki/havard_medical_college. accessed October 2011

Thesis/Dissertation

1. Khan MAH. Lipid profile and renal function status of hypothyroid patients [MD Thesis]. Dhaka: Bangabandhu Skeikh Mujib Medical University; 2005.

Scientific or technical report

1. Akutsu T. Total heart replacement device. Bethesda MD: National Institutes of Health, National Heart and Lung Institute; 1974 Apr report No. NIH-NHLI-69-2185-4

Ethical approval

The authors should mention the name of the ethical approval authority of their study either in Materials and Methods section, if the study has been done on human subjects, laboratory samples or laboratory animals.

Authorship Statement

A form must be signed by all listed authors indicating the contribution to the paper made by each. The corresponding author is responsible for obtaining signatures from all listed authors and using a check-off form, should indicate by name what each author contributed to each of the various aspects of the study:

- concept of research work
- study design
- data collection or processing
- statistical analysis
- report writing

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Please read the following submission checklist that summarizes the main features for manuscripts to be submitted at the Ad Din Women's Medical Journal. Please ensure your manuscript follows the recommended number of pages, references etc. for specific articles to be accepted by the Ad-Din Women's Medical journal as shown below.

1. Type of article: **Original Article**
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   Headings: Yes
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   Key notes: No
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5. Type of article: **Clinical overview**
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    Key notes: No
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    Keywords: No

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An official organ of Ad-din Women's Medical College

Special / Invited Article

Ad-din Research Unit (ARU): Biomedical Research on the Move!

Kazi Selim Anwar[1], M Afiquor Rahman[2], Nahid Yasmin[3], ARM Luthful Kabir[4], Richmond Ronald Gomes[5], Mahmuda Hassan[6]

First thing first:

Does research remain so important a tool in upgrading medical college and hospitals, particularly if it is a privatized one? The answer is simply 'Yes' and 'Logical', if we take a deeper insight on to globally encaptivated phenomena called Research Capacity Building in short 'RCB'. RCB is defined as a 'process of developing sustainable abilities and skill development enabling individual/organization(s) performing quality research.[1-2]

Our earlier observations, in-and-abroad, evidenced that no medical college/university teachers can reach the peak of success solely by virtue of completing academic curriculum. Rather, teaching-learning (T-L) facilitates following modern medical education can excel with the best outcome when it is adjunct with research activities, as reported from Australia[3] and other authors, globally *(Personal Communication: Prof. PK Rajesh, Dep. VC, Acad. & International, AIMST Univ., Kedah, Malaysia with Dr. KS Anwar, IUHW, Narita, Japan, Jan 2021).*

Background Information:

In recent years, global interest in strategic planning for RCB has increased by few folds since it assists the healthcare professionals in flourishing much *McKeon et al* reported.[3] Evidences from Bristol University, England, showed that RCB has a positive impact on policy, education, research and developmental issues- the gate way to build institutional research capacity.[4]

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4 Professor and Head, Department of Pediatrics', AWCMH, Dhaka

5 Associate Professor, Department of Medicine, AWCMH, Dhaka

6 Professor, Department of Pediatrics', AWCMH, Dhaka

Building health professional capacity to engage in research has been prioritized in RCB concepts that yields multifaceted benefits towards: healthcare professionals, organizational benefits and patient satisfactions, essential or Health Services Research.[5] All these benefits are ultimately translated into overall societal development, according to a recent systematic review that yields increased recognition of multi-strategic approach in RCB,[5] enhanced positive attitude,[6-8] and, increased uptake of research towards evidence-based practice[9] as well as its motivators, enablers and barriers that includes enhanced job satisfaction[9-11] and a prudent RCB Framework[12-13].

Reportedly, healthcare professionals involved in quality research have been reported to influence on infrastructure and processes of patient care, positively[12-13] with a strong strategic planning and policy making[6-11,13-14] including efficient services delivery[7] and prioritizing healthcare workforce. [9-11,14-16]

RCB- Bangladesh Context:

Before looking into our aim of producing quality research involving AWMCH clinicians or bio-medical faculties, let's review our country-specific RCB perspectives, first:

In Bangladesh, drives on RCB in medical college/hospitals, particularly in private hospitals has neither been reported nor been noticed. However, few large NGOs institutions (ICDDR, B, BRAC, CIPRB, etc.) and few GOB institutions (BSMMU, DMCH, DSH, etc,) reportedly excelled in health care service delivery and research activities utilizing their respective RCB-drives.

Thus, feeling recharged on the need of such drives, we, at the Ad-din Women Medical College (AWMC) started planning our 'Ad-din Research Unit (ARU) envisaging all 4 Ad-din Medical College Hospitals under the umbrella located in Dhaka, Khulna and Jessore of ARU.

Rational: Will ARU drives add value in Ad-din income generating process?

Global interest on RCB is evidenced to grow faster over the past few years, particularly on strategic planning for research among health professionals. Literature yielded that RCB contributes high impacts on policy issues and educational attainments once blended with research and developmental (R&D) activities towards building institutional research capacity. This, in turn, aids in the improvement of quality in patient care and clinical management including standardizing the hospital laboratory services- all of which ultimately adds value in a hospital's income generating processes, obviously, though gradually, yet steadily.

Targeting these aforementioned contexts some senior doctors like, Prof. ARML Kabir, Head, Dept. of Pediatrics, Dr. Richmond Gomes, Assoc. Prof., Dept. of Internal Medicine, Prof. Afiquor Rahman, the Principal planned to form this ARU, led by Prof. Nahid Yasmin, the Director General (Hosp. and Nursing) which was finally approved by Dr. Sheikh Mohiuddin, the Exec. Director and CEO of Ad-din Foundations.

Plan of ARU:

- Conducting series of training courses/ workshops on research methodology
- Formulating various research projects and conducting those at par
- Collecting and storing data from various projects
- Publishing data/ reports/ manuscripts in various national and international journals
- Towards income generating process: preparing research projects to run with external funding
- Running service delivery (research products: training/ writing up projects/data management)

Finally, ARU was born!

Based on aforementioned facts and figures of evidenced based global practice of RCB in medical colleges hospital/institutions, 'Ad-din Research' Unit (ARU) was established on 26th May 2021 under AWMC.

ARU further envisions of bringing in all 4 existing Ad-din Medical Colleges under the one umbrella of ARU located in two large cities (Dhaka and Khulna) and in two district towns (Jessore and Kushtia).

ARU's goals:

The ultimate goal of ARU is to create a sustainable and optimum research environment at the AWMC to encourage all clinical and bio-medical teachers, academicians and researchers/scientists to devote part of their weekly working time (at least 5%) into bio-medical, clinical and other research activities.

Short-Term Goals *(within one and half years from launching ARU):*

- To conduct series of courses/workshops on research methodology to assist the all-aforementioned teaching and hospital staff in creating interest and getting involved into bio-medical research
- To apply for funding from private, national and international donor's/research organizations/ universities
- Give a hand towards strengthening the AWMC's Institutional Review Board (IRB) including creating an ERC & RRC committee involving subject expertise from AWMC and other National/ Universities/ Res Inst.
- To start boosting our AWMC journal to shape it up with quality and international indexing issues with doi.

Mid -Term Goals *(from 2nd year onwards):*

- ❖ Despite ARC's commitment and dedication towards achieving its short-term goals start formulating and organizing to conduct various big-budgeted research projects in collaboration with Dhaka Univ./ others
- ❖ To earn the international indexed status of our AWMC journal with/ under Doi system
- ❖ To arrange/launch various local/inter/national seminars /conference in different themes/ departments.
- ❖ To implement bi-lateral collaborative drives with AIMST university as per MoU (to be completed soon).

Lon-Term Goals *(from 3rd year onwards):*

- ➢ To achieve the first short and mid-term goals and keep it sustainable incorporating in future plans
- ➢ To emphasize more on increasing bi and tri-lateral collaboration with inst./Univ/ research organizations
- ➢ To increase the quality of our AWMC journal much more to attract global level of publications
- ➢ To make a system of handing over the chair of Head ARU on a 3-year contract basis after each term.

ARU's Plans and Programs:

- We now need to develop ARU further to provide our talented academicians and clinical experts a modest yet sound platform to facilitate them running the research activities, at par.
- The ARC-team will reach out to them all with a ready-to-go scientific platform prudently enough towards adding values in their scientific growth and research potentiality, thus, allowing them to accomplish to go for publishing their important research findings.
- Thus, our talented Ad-din doctors' hub can flourish full potential to bloom up their latent, if not hidden, & their expertise in scientific forums largely, despite few existing constrains & manageable hurdles.

ARU's Requirement to grow and move forward sustainably:

- To train up clinicians/bio-medical experts/nurse/ technicians with adequate input, we essentially need required manpower, constantly.
- To furnish ARU's research and innovation approaches we definitely require a robust technical support and electronic back up.
- To accomplish all these, certain financial assistance, particularly in this sort of expensive endeavor of procuring costly logistic/electronic instrument and laboratory back up supports.

ARU's plans on Cost-Recovery Drive through sustainable Self-help Approach:

Though ARU requires certain financial assistance/logistic support from AWMC as initial back-up-cost to run its initial activities, ARU has already drawn up a self-help approach envisaging to arrange its own funding through:

- Establish some bi/multi-lateral research collaborations with some national universities (DMCH, DSH, BIRDEM, BSMMU, etc.) and research institutions (Arora, Dept. of Pub Health, Daffodils Int'l Univ. etc.)
- International university/institutes to run research projects for sharing knowledge, skills and experiences and go for joint research degree programs and sharing international publications, as follows:
  - AIMST University, Malaysia,
  - IUHW Univ., Chiba Japan,
  - Xian Jiao Tong Univ. Shaanxi Xian, China)

Probable Obstacles and Plausible Way-out

Since the ARC, as just a newly established unit it suffers from a degree of financial hardship, we, essentially, look for certain funding to cover up RCB drives including research and development (R&D) activities involving AWMC faculties with the ultimate goal of improved patient care and proper hospital management. And, for that reason, ARC essentially, look for certain extra funding to cover up ARU's research and development activities.

However, since ARU currently suffer a bit in adequate financing, we essentially require extra funding/grant from other sources which we at the ARU trying to organize through applying for various research grants. Some of which have been shown in following sections:

ARU performances/ achievement since May 21, 2021

Over these past seven months, the ARU has gained some considerable achievements as follows:

Programmatic approach on how to develop, motivate and activate our medical teachers (pre/para-clinicians including the hospital doctors/clinicians).

1. **Organized an in-house training course on research methodology for the AWMC physicians and nurses** (Assisted by Dr. Suraiya Hasna Suha)
   - **Research methodology course** for clinical doctors, titled **'Workshop on Basic Research Methodology'**
   - As a part of **Nursing Course** conducts 3-weeks **research methodology course,** (Assisted by Dr. Suraiya Hasna Suha and Ms. Faugia Islam Anne), as follows:

     - **3rd year Diploma** Nursing (including a brief project **'Perception on breast feeding** among mothers')

     - **4th year BSc** Nursing (including a brief project '**Awareness on breast cancer** among mothers')

2. **Conducted two in-house study in collaboration** with Dept. of Medicine and Pediatrics, **AWMC**:
   - **a.** Dengue Clinico-epidemiological Survey-2021 with Prof. Nahid Yasmin, Prof. ARM Kabir, Prof. Afzalun-nessa BL, Assoc. Profs. Richmond RG, Bhowmik N, Sudipta R, Karim Rezwan, Saiful BK, Asst.Prof. Masuma K, etc. **Project Coordinator:** Dr. Kazi Selim Anwar, Dr. Meherun Neela (Research Officer)

b. Clinico-epidemiological and Virological Study on Childhood Hand, Foot & Mouth Disease (HFMD) being rampant in Bangladesh, with Prof. ARML Kabir, Prof. Mahmuda H, Prof. Kaniz R, Prof. Lutfunnessa: AWMCH, Prof. MAH Mollah, BIRDEM-2, Assoc. Prof. Dr. Azraf H, Assoc. Prof. Laila Sharmin, Raj MCH, Prof. Dr. Syed Afzal Karim, Aurora skin care and aesthetics, Dr. Wasif A Khan, Dr Sabina Y, icddr,b, Assoc. Prof. Mahfuza Hussain, Prof. Probir K Sarker, DSH, Dr. Sheikh A Hoque, Dr. Tania H CARS, DU (Assisted by Dr. Suraiya Hasna Suha and Ms. Faugia Islam Anne).

3. **Initiated few academic and research collaborations with the following Inter/national Universities**

a. AIMST University, Malaysia: Preliminarily agreed/ Letter of intent sent by the DG/ Agreement on the way to be finalized, soon

b. IUHW University, Narita/ Tokyo, Japan: Connections/Negotiations going on

c. Xian Jiao Tong University, Shaanxi Xian, PR, China (Running a PhD project with Prof. Jinjun Liu, Prof. Nahid Y, Prof. Laila N as PIs and Dr. Kazi Selim- Prog. Coordinator)

d. Dhaka Univ: Dept. of Biochemistry (Running a study on pre-eclampsia with Prof. S Tamanna, Prof. N Yasmin, Prof. L Noor as PIs and Dr. Kazi SA- Coordinator)

4. Submitted 15 research proposals for funding, all in a row at the following donors:

A. Nine research projects submitted at the **Ministry of Health** (**MoH**), as follows:

1. Further upgrading of research cell at AWMC: A Research Capacity Building (RCB) Drives.
2. Molecular Genetics and Genomics of Cystic fibrosis (CF)- a life threatening childhood disease largely misdiagnosed: A Multi Centre study in Bangladesh: Phase-I*
3. Benign Prostatic Hyperplasia (BPH) and Lower Urinary Tract Symptoms (LUTS): Associations and Risk Factors among 50+ years-old men
4. Prevalence of Nocardia spp. causing non-healing-wound infection in randomly selected districts.
5. Preventing HBV vertical transmission & immune prophylaxis failure using antiviral drug in pregnant women- a cost effective lifesaving drive from Ad-din Hospitals: First effort in Bangladesh.
6. Comparison of efficacy of Heated Humidified-High-flow nasal cannula (HHHFNC) with nasal Continuous Positive Airway Pressure (nCPAP): a primary respiratory support in neonates.
7. Association of Ac. kidney injury in complicated pregnancy & its Outcome after 28 wks pregnancy
8. The Molecular genetic approach to diagnose primary immune deficiencies (PIDs) in children attending major hospitals in Dhaka city.
9. Evaluation of Clinical Rickets in Respect to Biochemical & Radiological Assay: A Multi-Center Study in Under-5 Children Attending Major Hospitals in Dhaka City.

B. The following 5 Research Projects were submitted at the **Ministry of Science & Technology (MOST):**

1. Randomized Control Trial to Compare the efficacy of Heated Humidified-High-Flow nasal cannula (HHH-FNC) Versus Nasal Continuous Positive Airway Pressure (nCPAP) as a primary respiratory support among admitted neonates
2. Knowledge-level, Attitudinal trend & Practice-status on COVID-19 Prevention among the indigenous or tribal population of Bangladesh
3. Effect of prophylactic anti-seizure medication on Long term Neurodevelopment of asphyxiated term newborn – A randomized control trial
4. "Persistent thrombocytopenia in convalescent phase of Dengue during on-going outbreak: ITP in Disguise"
5. Association of acute kidney injury in complicated pregnancy & its outcome after 28 weeks' pregnancy

C. One Research Project has been submitted at the Bangladesh Medical Research Council (BMRC**)** on

'Assessing the knowledge, attitudinal trend and practice level on the prevention of COVID-19 among the indigenous/ marginalized people of Bangladesh'.

Conclusion:

A research center in any hospital remains essential as the global literature reveals. Being on the right track, the

ARU is on the move quite actively in achieving quality performance in health and research that will boost fames for Ad-din foundation in terms of AWMC's extended activities.

The AWWC should take pride on ARU- a wing, first time in the country, to set an example as a standard medical college hospital in Bangladesh. This will obviously assist in delivering improved health care services along with prudent input in research and development. We remain optimistic on ARU with its successive accomplishments and triumph, yet to come soon!!

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Original Article

Association of Waist Circumference and Blood Pressure among Primary School Children in Selected Schools of Chattogram, Bangladesh

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Abstract

Background: Childhood body mass index and waist circumference are important for public health concern as well as responsible for metabolic disorders that persists until adulthood.

Objectives: The purpose of the study is to observe any association between waist circumference and blood pressure among primary school children.

Methodology: This cross-sectional study was performed among children of different schools in Chattogram, Bangladesh. Data was collected from March to September 2016 for a period of six months. The representative sample of 6 to 12 years old primary school going students with the normal weight, overweight and obese children were selected. Data on BMI, waist circumference and blood pressure were recorded and detailed demographic data were collected in structured data collection sheet for each participant from primary school.

Results: Total number of 600 students were recruited for this study. Mean age those children was 9.57±2.16 years. The ratio of boy and girl being 1.47:1. Among them 246(41%) middle class comprising the major percentage compaired to urban 378(63%). The overall prevalence of overweight and obesity was 23.0% and 17.16% respectively. Prevalence of waist circumference at higher than 90th percentile was 0%, non-obese (13.5%) and overweight and obese group (92.85%), respectively. Prevalence of high BP in overall group was 12.16%. This study revealed that waist circumference was associated with high BP in school children 6 to 12 years adjusted to age, sex and BMI.

Conclusion: In conclusion elevated blood pressure in children is associated with waist circumference.

Keywords: Waist circumference; overweight; obese; hypertension

Introduction

In worldwide epidemic of obesity it is a leading concern in public health policies.[1-2] Waist circumference provides a measure of central obesity which has been specifically associated with cardiovascular risk factors.[3] Report of longitudinal study of blood pressure in childhood suggested an important role for early detection and enhancing a better understanding of the natural history of elevated blood pressure.[4] Abdominal obesity which can be easily measured by waist circumference has been recognized as a better predictor for cardiovascular disease and metabolic morbidities than body mass index.[5-8] Children with elevated blood pressure becoming more commonly remain at increased risk of hypertension and metabolic syndrome particularly at their later life.[9-10]

Blood pressure measurement has neither been included in the elementary school health examinations, nor it is practiced routinely during paediatric medical care in Bangladesh. This may facilitate under diagnosis of paediatric hypertension in clinical settings. However, compared to BMI, waist circumference remains a better

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index for investigating metabolic abnormalities such as hypertension. Muffies et al[11] suggested that waist circumference is very helpful in detecting metabolic and cardiovascular risk among overweight children. Overweight and obesity are strongly correlated with primary hypertension in children.[12] It is suggested that waist circumference has advantages over BMI as because it includes waist measurement that is believed to be correlated to risk of cardiovascular events.[13]

Several studies have shown significant increases in obesity among Asian and Caucasian children over the past 20 years[14-16]. The prevalence of high BP among children in several conducted studies in western countries ranging from 7.0 to 19.0% cases[17-18]. Waist circumference (WC) more specifically reflect adiposity than BMI which reflects both lean and fat mass. Intra-abdominal fat is strictly associated with metabolic complications of obesity and cardiovascular risk[19-20] in adults. In children the relationship between waist circumference and blood pressure was demonstrated in some studies[21]. This present study was undertaken to observe any association between (WC) and blood pressure in primary school children.

Methodology

Study design and setting: This cross-sectional study was performed among children of some selected schools of Chittagong, Bangladesh from March to September 2016 for a period of six months.

Sampling: Primary school going children aged 6 to 12 years old with the normal weight, overweight and obese children were selected in this study. Consecutive purposive sampling technique was applied. Prevalence of pediatric hypertension was taken 4.0% in this study. After calculation, the targeted responders were 36750. Due to resource and time constrains, 600 samples were taken as study population.

Ethical consideration: The research protocol was approved by local Institutional Ethics Committee. A written informed consent was taken from the parents.

Inclusion criteria: School going students with the age of 6 to 12 years with both sexes studying in class 1 to 5 in the selected primary schools.

Exclusion criteria: More than 12 and less than 6 years of old and children with pre-diagnosed co- morbidities with the waist circumference less than 3rd centile.

Data collection process: All the anthropometric measurements were done by the researchers and some trained assistants. Children wearing light weight clothing without shoes were measured for standing height (stadiometer) and weight (scale). WC was measured to the nearest of 0.1cm at the midpoint between lower margin of the last palpable rib and the top of iliac crest by a non-elastic tape. Blood pressure was measured using a sphygmomanometer on the right arm for three times and taken as the mean of three measurements. Data for socio-demographic clinical variables were obtained from all participants by a questionnaire.

Data analysis: After editing and coding, the coded data directly entered into the computer by using SPSS/PC software and graph and chart by MS excel. Statistical test for analyzing data were performed by t-test, chi-square test, proportional differences.

Result

Total number of 600 school children were taken as sample for study. The Mean age was 9.57±2.16 years. Among the urban respondents 257(67.98%). Among the urban children were watched TV/video or game/internet for more than 2 hours. Only 107(28.3%) children had vegetable or fruits daily into their food. Proportion of daily vegetable or fruits consumption was more in rural children 187(84.23%) compared to urban children 207(28.30%). Proportion of urban children 257(67.98%) watched significantly (p>0.001) more TV/video game/internet for >2 hr than the rural children 53(23.87%). (Table 1).

Table 1: Food consumption and recreation habits

Variables	Urban N (%)	Rural N (%)	P value
Daily vegetable/ fruits consumption	107(28.30)	187(84.23)	
Taking junk food/fast food (at least once in a week)	214(56.87)	86(38.73)	<0.001
Watching TV/video game/internet for >2 hrs	257(67.98)	53(23.87)	

This study shows, using BMI cut-off points introduced by WHO. Children had overall prevalence of overweight (23%) and obesity (17.1%), respectively. (Figure I) in this study.

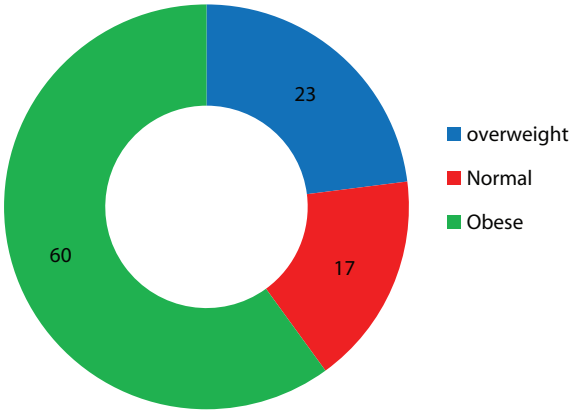

Figure I: *Prevalence of overweight and obesity among 6 to 12 year aged children (n=600)*

359(59.83%) children had BMI within normal limit, 138(23.0%) had 85th to 95th percentile and 103(17.16%) had BMI >95th percentile, respectively. Children were classified as non-obese or normal (BMI≤85th percentile), overweight (BMI, 85th to 95th percentile), and obese (BMI ≥95th percentile). Based on these cut-off points, obesity was more common in girls (19.42%) than boys (15.64%) respectively (Table 2).

Table 2: Nutritional status of children according to their BMI (n=600)

BMI Percentile	Boys n (%)	Girls n (%)	Total n (%)
<85th	213 (59.5%)	146 (60.3%)	359 (59.8%)
85 to 95th	89 (24.9%)	49 (20.3%)	138 (23.0%)
>95th	56 (15.6%)	47 (19.4%)	103 (17.2%)

358(59.8%) children had normal weight, and all of them had WC <90th percentile. Among overweight children 138(23%), 109(78.9%) children had WC <90th percentile and 29(21.1%) had WC >90th percentile. Almost all the obese children 99(96%) had WC >90th percentile. Regarding operational definition central obesity was defined as WC higher than the 90th percentile. Overall central obesity was 128(21.33%) in school children (Table 3).

Table 3: Distributions of children according to waist circumference (n=600)

Variable	Waist Circumference		Total N (%)
	<90th Percentile N (%)	>90th Percentile N (%)	
Normal	359 (100)	0 (0)	359 (59.8)
Over Weight	109 (78.9)	29 (21.1)	138 (23)
Obese	4 (38.8)	99 (96.1)	103 (17.1)
Total	472(78.66)	128(21.33)	600 (100)

The prevalence of high blood pressure was 3(12.16%) and was 11.45% in boys and 13.22% in girls. Among children who had normal weight, no cases were detected as hypertensive. In obese boys and girls, 41(73.21%) and 25(53.19%) had high blood pressure respectively. Children who were overweight there was no case of high blood pressure among boys but 7(14.28%) girls had high blood pressure. A positive correlation was found between waist circumference and with the trends of rising of systolic blood pressure (SBP) >95th in the studied group (Figure II).

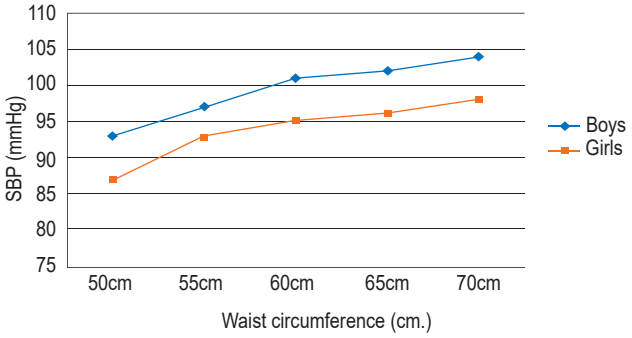

Figure II: *Association of systolic blood pressure (SBP) >95th in the studied group*

Similarly, a positive correlation was found between waist circumference with the trends of rising of diastolic blood pressure (DBP) >95th in the studied group (Figure III).

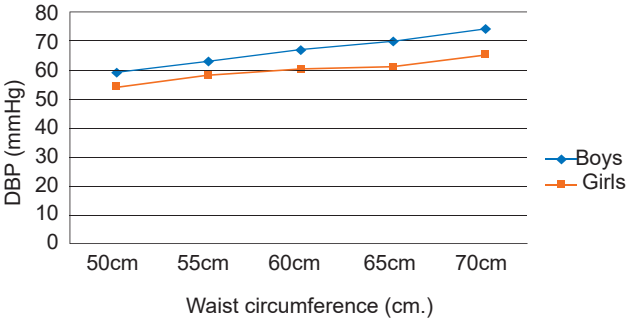

Figure III : *Trends of diastolic blood pressure (DBP) >95th in the studied group*

Discussion

In this study, 359 boys were evaluated among whom 89(24.86%) children were overweight, 56(15.64%) were obese and 213(59.49%) were normal. There is a significant difference in the Mean ± SD of BMI among these 3 groups which were non obese 16.36(1.28%), overweight 2.5(1.8%), and obese 25.3(2.7%). The prevalence of waist circumference was higher than the 90th percentile 0%, 13.8% and 92.3% in three groups respectively. Therefore, the central obesity was in accordance with finding of BMI.

The systolic and diastolic BPs were higher in the obese group than in the other two groups. Hypertension was present in 16.7% students in obese group but was not present among other groups. There was a close association between WC, BMI, systolic and diastolic BP. Many studies have shown that blood pressure is associated with being overweight in children and adolescents of western countries.[6,7,9,10] In a study, 84 students were evaluated among whom 28 students are overweight, 40 students obese and 16 non obese. The prevalence of WC higher than 90th percentile is 0%, 28.6% and 87.5% in the non-obese, overweight and obese groups respectively and hypertension is present in 25.0% of the obese group but not present in the other two groups. There was a positive association between WC, BMI, age, systolic BP and diastolic blood pressure.[22]

The results show that of the 359 children who had normal weight, all had waist circumference less than 90th centile; however, in overweight children 109 subjects have waist circumference less than 90th centile and 29 subjects have waist circumference more than 90th centile. Almost all the obese children (99) had waist circumference more than 90th centile. Overall central obesity (waist circumference more than 90th centile) is found in 128(21.33%) subjects. In this study 358 boys are evaluated, among them 89(24.86%) subjects are overweight, 56(15.64%) subjects are obese and 213(59.49%) subjects are nonobese or normal.

Associations between elevated BP and waist circumference have been documented in children in Greece[25], Maxico[26] and USA.[27] A previous study[28] had found that with 1 cm incremental increase in waist circumference, the OR of elevated blood pressure is 1.069 (95% CI 1.01-1.11). High weight to height ratio increases risk of cardiovascular disease not only in children, but also in adults.[29] The best cutoff points for waist circumference to predict elevated blood pressure for boys and girls are 59 cm and 57 cm with the sensitivity 62.69%, 62.58% and specificity 67.75%, 63.61%, positive predictive value 34.5%, 22.6%, negative predictive value 86.9%, 90.9% respectively. Compared to BMI, it is likely that waist circumference is more important because it has a greater association with metabolic syndrome and cardiovascular diseases.[30]

There are limitations of this study. It was done among the school children in Chittagong city only which does not reflect the overall picture of the country. A large scale study needs to be conducted to reach to a definitive conclusion.

Conclusion

To conclude, the prevalence of high BP among children was positively correlates with waist circumference. The risk group can be screened out by waist circumference percentile which is reliable, less expensive and easier to apply for people of all ages, particularly in settings with scarce resources and limited health care capacity.

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Original Article

Caesarean Delivery on Maternal Request (CDMR): A Reason for Escalating Rates of Caesarean Section

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Abstract

Background: Cesarean section (C-Section) is one of the major operations in obstetrics practice as a lifesaving procedure both for the mother and baby. However, it involves an overall increased risk for short-term and long-term complications for mother and child compared with vaginal delivery. Caesarean delivery on maternal request (CDMR) is defined as a primary caesarean delivery after 39 weeks in the absence of any maternal or fetal obstetric or medical indications on maternal request. The Incidence of CDMR and that contributes to overall increase in caesarean delivery rate are not well much but though CDMR estimated about 2.5% of all cesarean births even in the United States were maternal requests. CDMR is not a well-recognized entity. When a woman desires CDMR, health care provider should consider her specific risk factors, such as age, body mass index, accuracy of estimated gestational age, reproductive plans, personal values and cultural context. In the absence of maternal or fetal indications for cesarean delivery, a plan for vaginal delivery is safe and appropriate and should be recommended. After exploring the reasons behind patient's request and examining all her risks and benefits if the patient decides to pursue CDMR, after patient and her guardian should have informed the risks of repeated caesarean delivery, these risks of placenta previa, placenta accreta spectrum and peripartum hysterectomy that increase with subsequent caesarean delivery.

Objective: To find out the incidence of caesarean delivery on maternal request (CDMR) at Ad-Din women's medical college and hospital (AWMCH).

Materials and Methods: This cross sectional study was carried out at the Department of Obstetrics and Gynecology, AWMCH, Dhaka, Bangladesh during January to December 2018. Total 10405 pregnant women were included in this study. Data were processed and analyzed using SPSS version 22.

Results: Total number of 15575 deliveries were conducted during the study period was 15575. 5170 (33.2%) were vaginal deliveries and 10405 (66.8%) C-section. Among CS deliveries, 744 (7.1%) were done at maternal requests as their indication. Of various reasons for requesting cesarean delivery were painless delivery (38.8%), fear of neonatal outcome (30.8%), being elder age >30 (20.8%) and want to deliver baby at particular time (9.7%).

Conclusion: Most women opted for cesarean delivery where based on some reasons for (C- section) such as painless delivery, fear of neonatal outcome, more than 30 years of age and want to be delivered baby at particular time. Proper antenatal care, better observation, intrapartum monitoring, fine judgment regarding the route of delivery and proper counseling to the mother can reduce the rate of cesarean delivery for maternal request.

Keywords: C-section, CDMR, Vaginal birth, Placenta previa, Placenta acreta spectrum

Introduction

The term "caesarean section" denotes the delivery of fetus, placenta and membranes through an incision in the abdominal and uterine walls. [1] Aim of caesarean section whenever it is safe for both the mother and baby and reduces the maternal and neonatal mortality. There has been increase in the rate of Caesarean section due to CDMR.[2] WHO indicated that a caesarean section rate greater than 10-15% is not justified in any region of the world.[3] The rate has increased to a record level of 46% in china, 31% in USA and more than 25% in many Asian countries.[4,5] In Bangladesh during the period of 2017-2018, Bangladesh Demographic and Health Survey (BDHS) data reported the caesarean section (C-section) delivery was 33% whereas 2019 Multiple Cluster Indicator Survey (MCIS) reported the increased figure of 36%.[6] The rate is much higher among women of higher educational attainment and from the wealthiest households. According to BDHS, C-section delivery accounted for 2% of the child births in 1999-2000, 4% in 2004, 8% in 2007,17% in 2011, and 23% in 2014, respectively. According to the report of Bangladesh Maternal Mortality and Health Care Survey 2016, the rate now stands at 31%, this implies that almost one in every three births in a

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health facility are delivered by C-section; though 53% of women in Bangladesh delivered at home.[7]

Caesarean section is associated with longer hospital stay compared to vaginal delivery. In most instances, the C-section is not the preferred mode of delivery (e.g. CDMR). Evidence and expert consensus are consistent on information that C-section, on average, come with greater risks than vaginal births such as blood loss, higher chance of infection as well as more complications in future pregnancies such as placenta previa, morbid adherent of placenta, caesarean hysterectomy, ruptured uterus, and a high risk of death. In a developing country with limited resources, it is of utmost importance that the resources should be used judiciously.

Most of the developed countries such as The United States, Canada and Europe do not recommend CDMR.[8] Patient counselling is suggested to inform to patients about pain management options, and of potential benefits and harms related to cesarean deliveries. However, obstetrical care providers often accede to patient preferences, given the ethical imperative of patient autonomy. Contemporary, high-quality observa- tional studies leveraging robust population-based data are required.[9]

The rising trend in caesarean section rates also means an increasing number of pregnancies following caesarean section with all risks to both mother and fetus. An increasing number of surveys have investigated reason for C-section, the ethics of doing such C-section and proper counseling prior to the surgery will reduce the C-section rate.[10] The aim of this study was to find the cause of caesarean delivery on maternal request (CDMR) to yield a reason for rising rates.

Materials and Methods

Study design and setting: This cross-sectional study was carried out at the Department of Obstetrics and Gynaecology, Ad-din Women's Medical College and Hospital, Dhaka, Bangladesh January 2018 to December 2018.

Sample size: Pregnant women who were admitted in the Department of Obstetrics and Gynecology. Total 10405 samples were included in this study.

Data collection process: Data were collected using a structured questionnaire. The purpose of the study was explained to pregnant women. Relevant history was taken, gestational age was determined by last menstrual period and early USG, Previous antenatal records were collected and clinical examination was done in all the cases. Collected information was recorded in a pre-designed data collection sheet.

Data analysis: Data were processed and analyzed by computer software SPSS version 22.

Results

Among total 15,575 mothers who delivered a baby at the department of obs & gynae of AWMCH during Jan-Dec 2018, >2 times (n=10401; 66.8%) were C/S than normal delivery (n=5770; 33.2%). Of total 1045 C/S performed, 7.2% were performed at mother's request. While VD were observed more in monsoon (Jan-Oct), C/S were observed more in spring and winter months (Aug- Dec) 2021 (table 1).

Among the mothers who requested for c section delivery, 39% requested for fear of neonatal outcome followed by 30.8 % who asked for painless delivery and 21% due to elder age >30 years (table 2).

Results

Table 1: Incidence of caesarean section on maternal request during January to December 2021

	Vaginal Delivery		Caesarian Section		Maternal request	
	n	%	n	%	n	%
January (n=1060)	340	32.1	720	67.9	37	5.1
February (n=1007)	299	29.7	708	70.3	38	5.4
March (n=1162)	336	28.9	826	71.9	45	5.4
April (n=1183)	355	30	828	70	78	9.4
May (n=1330)	418	31.4	912	68.6	82	8.9
June (n=1262)	438	37.6	824	62.4	60	7.3
July (n= 1380)	500	36.2	880	63.8	67	7.6
August (n=1416)	532	37.6	884	62.6	64	7.2
September (n=1481)	533	35.9	948	64.1	79	8.3
October (n=1531)	523	34.2	1008	65.8	72	7.1
November (n=1504)	474	31.5	1030	68.5	54	5.2
December (n=1259)	422	33.5	837	66.5	68	8.1
Total (n= 15575)	5170	33.2	10405	66.8	744	7.2

Table 2: Reason for caesarean section on maternal request (n=10405)

Reason for caesarean delivery	No. of patients (n)	Percentage (%)
Painless delivery	229	30.8
Fear of neonatal outcome	288	38.7
Baby delivery at particular time	72	9.7
Elder age (>30 years)	155	20.8

Discussion

A cesarean section can be a life-saving operation, and some babies would not be born vaginally under any circumstances; however, it is still a major surgery.

Women have a legal right to know the risks associated with their treatment and the right to accept or refuse it. The physician should do proper counseling with the patient, to give her an opportunity to have informed consent. Patients have the right to decline care but not to demand treatment that the physician holds to be unnecessarily risky. The FIGO Committee for the Ethical Aspects of Human Reproduction has argued that it is unethical to perform C-section without a medical indication because of inadequate evidence to support a net benefit.[11]

In this study, among 10404 cesarean deliveries, 744 (7.1%) had maternal requests as their indication. Therefore, the findings of the study are in well agreement with the findings of the other research works.[12,13] But lower than observations from other countries, where estimates of elective cesarean deliveries and CDMR vary from < 10% in the USA, 10 to 20% in China and 50% in Brazil.[14,17]Another study by Narayanaswamya et al.[10] found among 1,877 cesarean deliveries, 44 (2.5%) had maternal request as their indication.

A powerful debate is taking place in the medical community and in the press in recent months regarding cesarean delivery on maternal request (CDMR) even in normal uncomplicated pregnancy. The reasons cited are the lack of evidence demonstrating that in a normal low risk pregnancy C- section carries less risk than vaginal delivery for mother and baby.

This study shows various reasons for women requesting C-section delivery were painless delivery (38.8%), fear of neonatal outcome (30.8%), elder age >30 (20.8%) and baby delivery at particular time (9.7%). These findings were consistent with other study.[2] Another study Patted et al.[18] reported there are several reasons for request for a caesarean section. It could be fear of labor pains or previous traumatic experience or a psychological inaptitude to handle vaginal delivery. Many women think there is more risk of intrauterine death, brain injury and pelvic floor damage associated with vaginal delivery. It could also be for the convenience of the patient, her family or the obstetrician. The family may demand that the baby be born in a particular auspicious time and day. Defensive obstetrics is another reason for the high rate of C-section and also financial benefits associated with C-section may be another contributing factor.

Primi-Gravida and conception by in vitro fertilization were also determinants of CDMR, suggesting that women with first pregnancies or those who had fertility issues prefer CDMR. The role of health care providers in facilitating or influencing a woman's preferred mode of delivery also warrants examination. Although health care providers are supportive of a woman's right to choose CDMR,[9,13] surveys show variable willingness to comply with such requests. In this study, care from an obstetrician was a significant determinant of CDMR, suggesting that women who plan CDMR are more likely to seek out care from an obstetrician and that women preferring vaginal deliveries are more likely to seek antenatal care from a midwife.

Conclusion

The rate of C-section is increasing globally but in most developing countries, the number is still low and those who need it are not getting the opportunity for this. To make this happen, we need respectful quality ante-natal care (ANC), follow the guidelines of Labor Room Protocol and evidence-based practice & also keep an eye on Robson"s classification.

The reason for the rate of C- section going up in our country is multifactorial. We can bring the rate down by counselling the patients about their complications and there is better understanding in the community and when we have sufficient numbers of midwives to deliver the babies safely.

There has been an increase in the number of maternal requesting caesarean sections for no medical reason. The reasons for this are not only for perceived medical benefits, but due to social, cultural and psychological factors.

CDMR should not be motivated due to non - availability of effective pain management. The specific reason for the request should be explored, discussed and documented. Emotional support should be given during labor. Every case must be individualized and should be consistent with ethical principles. Until better evidence is available, any decision to do caesarean section on maternal request should be carefully considered.

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Original Article

Immediate Outcome of Neonates with High Maternal BMI

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Abstract

Background: Obesity increases morbidity in mothers and fetus and are associated with multifaceted adverse reproductive and neonatal outcomes.

Objective: To determine immediate neonatal outcome from obese /high BMI mother.

Methodology: This cross-sectional study was carried out among 90 pregnant women admitted at the department of obstetrics & gynecology of Ad-din Women's Medical College & Hospital (AWMC&H), Dhaka, over the past 12 months (January- December 2018) period. Data collected on pre-designed data collection sheet were. analyzed using statistical package for social science (SPSS) V. 20.

Results: Most of the mothers (45.6%) belonged to age group 26-30 years followed by 20-25 years (28.9%), 31-35 years (17.8%) and 36-40 years (7.6%). Mean (±SD) age was 28.74±4.51 years. Of all 90 pregnant women, BMI of 54 cases (60%) was <40, and 36 (40%) had >40. Nearly 67% morbid-obese mothers had pre-eclampsia while 39% GDM. Also, 8.3% fetus from obese mothers suffered each from foetal complication/macrosomia &/or asphyxia,14.4% of which essentially requiring NICU.

Conclusion: Findings attest that obesity and high BMI as important maternal factors influencing neonatal complication and birth weight of babies. Health care providers caring pregnant women should determine BMI at an initial pre-natal visit. Individualized care and clinical judgment are essential in the management of under-weight, over-weight and obese women.

Keywords: Neonate, BMI, NICU Macrosomia, IUGR, Asphyxia.

Introduction

Obesity is considered as one of the largest global health problems of 21st century. In the North American regions, 62% of the population over the age of 20 were overweight, abody mass index (BMI) of ≥25 kg/m2), and 26% were obese (BMI ≥30 kg/m2).1,2 In the Europe, the Eastern Mediterranean and the Americas, more than 50% of women were overweight and, of these, about half of overweight women were obese (EU 23%, EM 24% and AM 29% respectively).[1,2] The perinatal problems that have been identified with maternal obesity and pregnancy include an increased risk of neural tube defects, birth asphyxia, birth trauma and neonatal hypoglycemia.[3,4]

Obesity is a known risk factor to develop several non-communicable diseases, including type 2 diabetes mellitus, hypertension, coronary heart disease, and stroke.[5] In addition to these problems, obese women have higher risk of complications during pregnancy and/or delivery. Furthermore, obesity may have adversely affected the health of their offspring.[6] In developing countries, such as Iran, women generally have a lower BMI than in developed countries. Pregnancy outcome is worst in babies from mothers with lower BMI compared to normal BMI which may increase the incidence of preterm birth, lower birth weight of baby, increased neonatal morbidity and mortality. [7]

Moreover, obese women remain at greater risk of maternal-fetal complications during pregnancy and childbirth. Obese women are at risk of antenatal,

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intrapartum, postpartum and neonatal complications such as hypertensive disorders of pregnancy, gestational diabetes mellitus, venous thromboembolism, cesarean section, preterm delivery, fetal macrosomia and stillbirths.[8] So the aim of this study was to examine the immediate neonatal outcome between obese and overweight mother.

Materials and methods

Study design and setting: Cross sectional study on obstetrics & gynecology carried out at the Dept. of AWMCH, Dhaka, Bangladesh.

Study period: One year (January 2018 to December 2018).

Study population: Pregnant women admitted at the Dept. of Obs & Gyne.

Sample size: Total 90 samples were included in this study, randomly.

Data collection process: Data were collected using a pre-structured and pre-tested questionnaire. Following the aim of study, relevant history was taken, gestational age was determined using LMP, antenatal records were collected and clinical checkup were performed on each study woman.

Data management: All collected data were entered into SPSS and analyzed on a computerized software SPSS.V. 20.0 using proportional tests of Chi-square test and/or Fisher's Exact test, as and whenever required for better statistical analysis.

Results

Among pregnant women, 45.6% were 26-30 years of age, 28.9% were 20-25 years of age and 17.8% were 31-35 years of age. Mean age was 29 years (Table-I).

Table 1: Age distribution of the patients (n=90)

Age in years	Frequency (n)	Percent (%)	Mean ± SD
20-25	26	28.9	28.74±4.51
26-30	41	45.6	
31-35	16	17.8	
36-40	7	7.8	

In terms of BMI of pregnant women, more than half were BMI less than 40 and 40% had BMI more than 40 (table II).

Table II : BMI of the patients (n=90)

BMI	Frequency (n)	Percent (%)
≤40	54	60.0
>40	36	40.0

Table III shows, more than half women (57.4%) whose BMI were less than 40 had pre-eclampsia, 40.7% had no complication and 25.9% had Gestational Diabetes Mellitus (GDM). Among pregnant women whose BMI were more than 40, 66.7% had pre-eclampsia, 38.9% had GDM and 16.7% had no complication.

There is a significant difference having no complication between women who had BMI less than 40 than who had BMI more than 40.

Table III: Association of maternal complication and BMI (n=90)

Complication	n (%)	BMI (≤40) (n=54)		BMI (>40) (n=36)		P value
		n	%	n	%	
No complication	28(31.1%)	22	40.7	6	16.7	0.027
Pre-eclampsia	51(56.7%)	31	57.4	24	66.7	0.084
GDM	28(31.1%)	14	25.9	14	38.9	0.265
Polyhydramnios	3(3.3%)	1	1.9	2	5.6	0.637
Wound infection	3(3.3%)	0	0.0	3	8.3	0.031

Total will not correspond to 100% because of multiple complications in individual patients

Table 4: Association of fetal complication and BMI (n=90)

Complication	n (%)	BMI (≤40) (n=54)		BMI (>40) (n=36)		P value
		n	%	n	%	
Macrosomia	3(3.3%)	0	0.0	3	8.3	0.031
IUGR	9(10%)	6	11.1	3	8.3	0.943
RDS	5(5.6%)	2	3.7	3	8.3	0.552
PNA	8(8.9%)	5	9.3	3	8.3	0.780
Asphyxia	3(3.3%)	0	0.0	3	8.3	0.031

In terms of fetal complication, among pregnant women who had BMI less than 40, 11.1% had IUGR, 3.7% had RDS and 9.3% had PNA, respectively. Among women who had BMI more than 40, 8.3% had IUGR, 8.3% had RDS and 8.3% had PNA (table 4).

Table 5 shows, among all pregnant women, 18.9% delivered children with low birth weight, 65.6% delivered baby within 2.5 – 3.5kg and 15.6% had baby with more than 3.5kg. Among these children, 14.4% were admitted to NICU upon delivery.

Table V : Neonatal outcome of the study subjects (n=90)

Neonatal outcome	Frequency (n)	Percent (%)
Birth weight		
≤2.5 kg	17	18.9
>2.5-3.5 kg	59	65.6
>3.5 kg	14	15.6
Mean±SD	2.87±0.89	
Admission in NICU		
Yes	13	14.4
No	77	85.6

Discussion

Maternal obesity is associated with fetal macrosomia, IUGR and neonatal asphyxia. This study finding were discussed and compared with previously published relevant studies.

This study shows 45.6% were the age group 26-30 years followed by 28.9% were 20-25 years, 17.8% were 31-35 years and only 7.8% were 36-40 years. The mean age was SD 28.74±4.51 years. These findings consisted with Kumari et al.[11]

This study showed, pre-eclampsia was seen in morbid obese (66.7%) and GDM more in morbid obese (38.9%). Similar study found pre-eclampsia, as maternal outcome was majorly seen in obese (19.04%) and morbidly obese (66.67%) with $p < 0.001$[10-11]. Several studies had found that preeclampsia was found to be statistically significant with women with high body mass index (BMI) 001.[10-12]

In this study we have found macrosomia was present in morbid obese mother (8.3%). Asphyxiated baby was delivered in morbid obese (8.3%). NICU admission mostly seen in morbid obese. Several studies found that there is a association between high BMI with number of fetal and maternal complication, including fetal death, preeclampsia, gestational diabetes, macrosomia,[4] asphyxia, seizure, hypoglycemia, meconium aspiration syndrome and complicated deliveries. [5, 6, 7]

Our study shows the mean birth weight of babies increased significantly with increase in BMI. Hincz et al and Mazumder et al also found that the mean birth weight of babies increased with the increase in BMI ($p<0.05$).[13,14] Moreover, in the present study the incidence of low birth weight among babies decreased significantly with increase in BMI ($p<0.008$). Sahu et al found the incidence of LBW babies (<2 kgs) to be 19.11% in obese, 14.10% in overweight and 6.82% in the normal BMI group ($p<0.05$).[15] The risk of macrosomia increased significantly with the increase in BMI ($p=0.04$) in the present study. Sahu et al, Hincz et al also found that the increasing risk of macrosomia is highly significant with increase in BMI).[13]

Conclusion

This study suggested that maternal obesity is critically important to neonatal health during the perinatal period. High BMI is associated with increased incidence of pre-eclampsia, GDM and caesarean delivery. Macrosomia, IUGR, RDS, PNA and asphyxia was higher in morbid obese. Management of weight during pregnancy might help reduce their adverse neonatal outcomes in future intervention studies or programs.

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Original Article

Prevalence of Urinary Tract Infections (UTIs) Among School - Going Children in Dhaka, Bangladesh: A Dipstick Test Study

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Abstract

Though some studies have evaluated dipstick urinalysis (DUA) for children, it is not commonly done in Bangladesh. However, DUA is an easy, quick and reliable test for predicting urinary tract infection (UTI) within a short period of time. The aim of this cross sectional study was to examine the prevalence of urinary tract infection among school-going children. Urine specimens were collected from 2239 children from six different schools in Dhaka city and sub-urban area. Dipstick urinalysis for nitrite and leukocyte were performed for this study. Sensitivity and specificity with 95% confidence intervals(CI) were calculated. Visual readings were compared to readings with the findings of a urine chemistry analyzer. There were only leukocytes present in urine of 5.95% children 6.50% boys and 5.21% had girls. Age group 8 to <12 years have more of leukocytes and nitrites in urine than other age groups. 26 (1.16%) children have both leukocytes and nitrites and 132(5.9%) having only leukocytes and 83(3.7%) children were having nitrites in urine. When investigating for UTI in children, we suggest nitrite and leukocyte esterase dipstick be combined.

Key words: Dipstick, Infection, Leukocytes, Nitrites.

Introduction

Dipstick urinalysis is often the first measure for detecting bacteriuria.[1] The diagnostic value of dipstick urinalysis is most often used for children and adults, though it may provide different results depending on age group and patient criteria. Thus, the clinical value of dipstick urinalysis could be quite different for elderly patients at nursing homes compared to younger ones, even though elderly patients have a higher prevalence of bacteriuria.[2,3,4]

Dipstick testing of urine sample is a method designed to allow early detection of infection and an early initiation of the treatment.[5] Dipstick have been designed to test markers of infection. Leukocyte esterase and nitrite have been combined on one dipstick to screen urine samples for urinary tract infections.[6]

Leukocyte esterase is an enzyme from neutrophils not normally found in urine and is a marker of pyuria. Nitrites are produced by the bacterial breakdown of dietary nitrates. Most urinary pathogens reduce nitrates to nitrites like E.Coli, Klebsiella, Proteus.[7] Dipsticks use as a routine screening test for UTIs both in children and adults. Among children, the method of urine collection is often varying, and UTIs have far reaching implications.[8]

The accuracy of the dipstick for nitrites was affected by the cut-off point for the nitrites and the population tested. The difference between the studies with regard to

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implicit cut-off points may be influenced by human, instrumental or environmental factors. The test for nitrites might perform better in asymptomatic patients and in patients who are not on antibiotics.[9]

A positive urine culture may confirm the diagnosis and is considered the gold standard in scientific studies. Moreover, susceptibility testing may be performed on cultured bacteria and may guide antibiotic therapy. Considering these facts, it is no surprise that urine samples are the most frequently received specimens in many microbiology laboratories. Nevertheless, a high number of these urine cultures will not yield any bacteria at all, and percentages for negative urine cultures up to 80% have been reported.[10,11] In Dipstick test, where only nitrites and leukocyte esterase show fair accuracy, compared with a quantitative culture.[12]

This dipstick test has a limited use in screening for asymptomatic bacteriuria. The leukocytes test component of the dipstick test appears to have the highest reliability and validity. Rapid diagnostic tests can rule out urine infection, which is inexpensive, less time-consuming and less expensive and are useful in communities having no culture facility.[13] The urine dipstick test will also be useful in follow-up of patient after treatment of urinary tract infection. This is useful in a developing country like Bangladesh, where people are very much unaware about their diseases as well as their children.

Material and Methods:

Study design and setting: Cross sectional study. Data were collected from selected schools in Dhaka and its downtown between April 2012 and February 2018.

Sample size: The total number of children included our study was 2239. Permission and consent was taken from the school authorities as well as parents of students. Age of the students were between 06 to 16 years.

Data collection process: In this study, we use dipstick (urine quick test; Combur-10-Test™, Roche, Mannheim, Germany) for biochemical analysis which consists of 10 reagents such as pH, specific gravity, protein, RBC, glucose, leukocytes, nitrites, urobilinogen, bilirubin and ketones. We considered nitrites and leukocytes for our study. The students and their parents were instructed how to obtain a clean mid-stream urine specimen. Each strip reacted with the substance present in urine and quickly changes color (60-120 seconds). The color of the strip was compared to the color chart present in the dipstick container.

Data analysis: Statistical analysis was done by using statistical package of social science SPSS version 16. Qualitative data were expressed in the form of numbers and percentages to describe comparisons of proportions.

Results:

Table 1 shows boys have more in percentage of leukocytes in urine. Their were 132 children (5.95%) who had only leukocytes present in urine, among them 87(6.50%) boys and 45(5.11%) girls and presence of Nitrites in urine was more in boys than girls. Total 83 children (3.73%) had presence of nitrites in urine, among them 60(4.46%) boys and 23 (3.73%) girls

Table-1 Leukocytes (>5/hpf) and Nitrites present in urine

	Numbers		Percentage	
	Leukocytes (>5/hpf)	Nitrites	Leukocytes (>5/hpf)	Nitrites
Boys (1343)	87	60	6.50	4.46
Girls (896)	45	23	5.11	2.65
Total- 2239	132	83	5.95	3.73

Table 2 shows age group 08 - <12 years have more of leukocytes and nitrites in urine than other age groups. here 26 (1.16%) have both leukocytes and nitrites in their urine, whereas 132(5.9%) having only leukocytes and 83(3.7%) children having nitrites in urine.

Table 2: Leukocytes (>5/hpf) and Nitrites present in urine according to age group

Age	n (%)	Leukocytes + Nitrites	Leukocytes	Nitrites
6 - 8 years	328 (14.65)	02	15	08
8- <12 years	1263 (56.43)	18	72	55
12-16 years	648 (28.92)	06	45	20
	2239 (100)	26(1.16%)	132(5.9%)	83(3.7%)

Table 3 shows Sensitivity and Specificity of dipstick tests of nitrites (Sensitivity 25% and Specificity 75%) and leucocytes (Sensitivity 55% and Specificity 70%) to predict Urinary Tract Infections (UTI) at 95% CI.

Table 3: Sensitivity and Specificity of dipstick tests of nitrites and leucocytes to predict Urinary Tract Infections (UTI)

	Sensitivity (95% CI)	Specificity (95% CI)	Likelihood ratios (LR+,LR-)	P-value
Nitrites +	25(16.1-38.2)	75(53-90.2)	5.5, 0.73	< 0.001
Leucocytes+	55(45.3-70.2)	70(64.4-74.3)	1.8, 0.62	0.02
Nitrites and Leucocytes both +	16.8(8.45-40.6)	87(83-91.1)	26, 0.83	--

Discussion:

UTI is a common cause of fever in young children, often accompanied by subtle and non-specific clinical findings.[14.] In a small percentage of children this may lead to kidney scarring, and at a later age to hypertension, and even renal failure.[15.]

The leucocyte-esterase test had a much higher accuracy in urology patients, consequently also in tertiary care, and when using a catheter for urine-collection. Sensitivity is highest in primary care, but requires further diagnostic work-up because of the high rates of false positives. In primary care negative results do not exclude the presence of infection.

Our study found, boys have more in percentage of leukocytes(>5/hpf) in urine. There were 132 children who had only leukocytes (>5/hpf) present in urine, among them 87 (6.50%) boys and 45 (5.11%) girls.

Dipstick is relatively effective at diagnosing patients as negative who are truly negative than diagnosing patients as positive who are truly positive. This is because the observed specificity values were relatively higher than the observed sensitivity values. Performance of nitrite alone showed relatively low sensitivity 25 at 95% CI, which is similar to previous studies.[9,16]

In our study, we have found presence of Nitrites in urine were more in boys compared to girls. In 3.73% urine had nitrites were present in urine 4.46% boys and 3.73% girls. Evidently, "nitrite-positive or leucocyte-positive" results appeared to be the best index for distinguishing between positive and negative results for quantitative urine culture, which is similar to an earlier report.[17] Nitrite alone recorded a relatively higher +LR 5.5, which suggests it may be useful in ruling in UTI. Conversely, it has relatively low – LR 0.73, indicating that it may not be a good indicator for ruling out UTI. Leucocyte alone appeared to be poor at both ruling in and ruling out UTI [+LR 1.8, – LR 0.62]. Combination of "nitrite-positive and leucocyte-positive" results produced the highest +LR 26, suggesting that it may be the most useful index for ruling in UTI infection. This finding resembles with a recent systematic review study that targeted children under the age of five years.[18]

Conclusion:

Overall, this study demonstrates that the urine dipstick test alone seems to be useful in children to exclude the presence of infection if the results for nitrites or leukocyte-esterase are negative. Although culture of urine is the gold standard test for diagnosis of UTI. In a community set up where culture is not available, dipstick test for nitrites and leukocytes could be a indicator for diagnosis of UTI. When investigating for UTI in school children at we suggest nitrite and leukocyte dipstick should be used combinedly.

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Case Report

Hyperreactio Luteinalis during Caesarean section in a woman with Twin Pregnancy: A Case Report

Kazi Morjina Begum[1], Md. Abu Sufian[2], Mahmuda Hassan[3]

Abstract:

Hyperreactio Luteinalis (HL) is a benign self-limited pregnancy related condition characterized by bilateral ovarian enlargement with multiple theca lutein cysts. It is commonly associated with gestational trophoblastic diseases and multiple pregnancy. We report a rare case of Hb discovered accidently during caesarean section (C-section) of a spontaneously conceived twin pregnancy, which was further complicated by pre-eclampsia. C-section was performed due to twin pregnancy with transverse lie of 1st baby with pre-eclampsia and preterm premature rupture of membrane (PPROM) and delivered healthy neonates. Expectant management was performed to permit conservation of both ovaries without unnecessary surgical intervention. The condition resolved within 6 weeks of post-partum period without untoward maternal and fetal sequelae.

Keyword: Hyperreactio Luteinalis, Twin pregnancy, Theca-lutein cysts, Pre-eclampsia, Transverse lie, Pre-mature rupture of membrane, Caesarean section.

Introduction :

Hyperreactio Luteinalis (HL) is a condition that can occur only in pregnancy. It is characterized by bilateral benign multicystic ovarian enlargement. The exact etiology is unknown but high β-hCG or β-hCG hypersensitivity is possible causes.[1,2] It is rare condition and treatment is non-surgical though sometimes it requires emergency surgery in case of ovarian torsions or haemorrhage [3]. Preoperative diagnosis is essential to prevent unnecessary surgery during delivery. Here, we report a case of asymptomatic HL, diagnosed prenatally as a Primi 36 weeks twin pregnancy with pre-eclampsia with bilateral ovarian tumour. Malignancy was excluded by ultrasound with colour Doppler velocimetry[4,5] and also by tumor markers.

Case Report:

A 19-years old patient, who was a primi gravida 36 weeks' twin pregnancy with pre-eclampsia with pre-mature rupture of membrane, was admitted to Ad-din women's medical college hospital (AWMCH) in the department of Obstetrics and Gynecology. She has been married for 1 year. Her menstrual cycle was regular and as per LMP her gestational age was 36 weeks. She was on regular antenatal care (ANC) and EDD was confirmed by early ultrasound.

On general examination: She was mildly anemic, non-icteric, her temperature was normal and her blood pressure was 150/110 mm of Hg. The abdomen was non-tender, symphysio-fundal height(SFH) was 36 cm, abdominal girth was 110cm, multiple fetal parts and more than two fetal poles were palpated.

On auscultation: Two distinct fetal heart sounds (FHS) were located at two separate areas.

On pelvic examination: Aseptic per speculum examination showed watery discharge escaping out through cervix, cervix was not effaced and there was no cord prolapse.

Bed side urine for albumin was (+++). Haemoglobin percentage (Hb%) was 9.2 gm%. HBs Ag was negative. Transabdominal ultrasound scan revealed 36 weeks' twin pregnancy with first twin was transverse lie with oligohydramnios with bilateral multilobulated ovarian cysts. The size of cysts was about 12×10×8 cm, placental location was fundal. Liver and renal function were within

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normal limits and coagulation profile was normal, serum albumin was slightly lower than normal limits. Ovarian malignancy tumor markers (CA-125, CA-19-9, and CEA) were not present.

The patient was counselled for C-section and informed consent was taken. C-section was done due to transverse lie of first twin under spinal anesthesia by a senior obstetrician. The first twin was female, weighing 2940 gm and 50 cm long, Apgar score 9/10. The second twin was male, weighing 2220 gm and 48 cm long, Apgar score 8/10. Intravenous oxytocin (10 IU) was given. The lower transverse uterine incision was closed in double layers with delayed absorbable sutures.

After uterine closure, intra-operative inspection of the abdomen revealed bilateral multicystic enlarged ovaries. The size was about (12×10×8) cm on both side (Fig. 1). On palpation, the masses were ovarian in origin, cystic with lobulated surface and no solid area were palpated. The abdomen was explored and no other abnormalities were found. The surgeon was confident enough from the gross picture of both masses that the condition was HL. Both ovaries return back to the abdomen carefully without further surgical intervention.

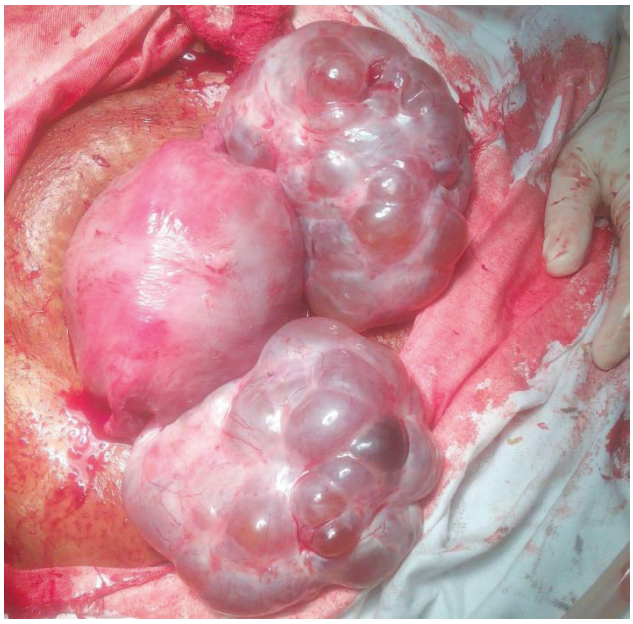

Figure-1: *Bilateral enlarged ovaries with multicystic lobulated surface. No solid area is seen. Present at the time of cesarean section.*

The patient had a smooth post-operative course as she passed flatus 12 hours after surgery and defecated next morning. She was discharged on 4th post-operative day with no complaints. The patient returned for evaluation at 6 weeks of post-partum. Ultrasound was performed at that time and showed nearly complete resolution of the condition (both ovaries measured about 3×4×5 cm) (Fig. 2).

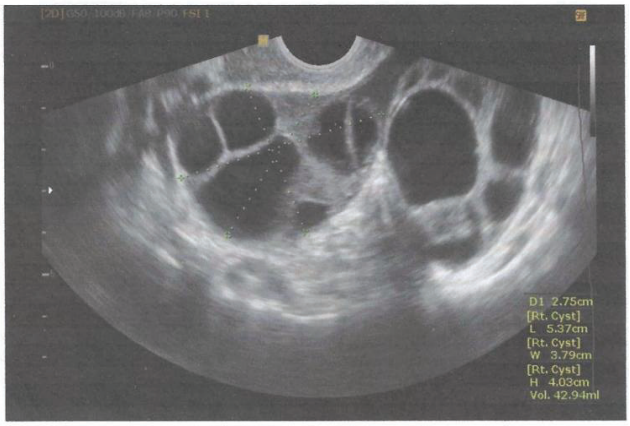

Fig.-2: *Ultrasound at the 6th week postpartum showing bilateral multicystic ovaries measuring about (3 x 4 x 5) cm.*

Discussion:

Risk factors were multiple gestation, twin to twin transfusion syndrome. Rh iso-immunization, gestational trophoblastic disease, hydrops-fetalis, polycystic ovaries, gestational diabetes, ovulation induction, decrease the clearance of B-hCG due to renal dysfunction. The condition is most frequent in primiparas.[6]

Hypothyroidism, Polycystic ovarian syndrome (PCOS), FSH secreting adenoma or mutation in the FSH receptor can also lead to HL.[7]

Over 25% of cases of HL were asymptomatic, symptoms are lower abdominal pain, nausea and vomiting, ascites, signs of virilization, weight gain and shortness of breaths.[8] Nausea and vomiting of pregnancy positively correlate with high levels of B-hCG. Signs of virilisation is rare, occurring in only 30% cases, mostly in their third trimester and rarely in the second trimester.[9]

This case, there were no clinical signs of maternal virilisation in pregnancy but complications were pre-eclampsia, premature rupture of membrane, fetal growth discrepancy. Remarkably high B-hCG levels might be predictive for pre-eclampsia as it may occur before 20 weeks of gestation[10.]

Usually, it takes 2 months after childbirth for ovarian tissue to return its normal size and ultrasonographic appearance. Cases of virilized female fetus are

extremely rare.[11,12] In our case there is no sign of fetal virilization.

Unnecessary surgical intervention during pregnancy can be performed if the obstetricians were unfamiliar about its presence. If HL remains uncomplicated, conservative management is the mainstay line of treatment.[13] Severe cases may require hospitalization for pain control and observation of vital signs. In most cases, post-partum resolution of the condition occurs and the ovaries regress to a normal size.[14] HL should be differentiated from ovarian malignancies either by tumor markers or the use of ultrasound with color Doppler and MRI. Evaluation of adnexal masses during pregnancy can be difficult, about 0.3% adnexal masses can be identified during caesarean deliveries and most of them are incidental. In 96.7% of cases, the ovarian masses were characterized as benign, with only 2% confirmed ovarian malignancies.[15] The rationale for surgical treatment is suspected malignancy, requiring histological evaluation through frozen section biopsy should be done before ovariectomy.[16]

Many cases with HL have exposed to unnecessary ovarian cystectomy or even oophorectomy due to high suspicious about nature of the masses. It is mandatory to increase awareness of this disorder to avoid unnecessary oophorectomies in future.

In our case, we were confident enough from the gross appearance of ovaries that the condition was HL. In this patient, the risk factor was twin pregnancy. We did not take a biopsy as there were no evidence of solid areas in both ovaries. Colour doppler sono graphy and tumour markers were done before C-section as an early stage of malignancy. Follow up till the end of puerperium confirmed our diagnosis, as the condition nearly resolved and the ovaries become smaller in size with no further risk to the patient. Similarly, another reported case report described complete resolution of the condition at 7th week after delivery.[17]

The picture of HL on ultrasonogram is characterized by large adnexal masses that represent the multiple small theca lutein cysts, giving the appearance of a 'spoke wheel'.[18] The condition should be differentiated from ovarian hyperstimulation syndrome (OHSS) in which the ovaries have the same size and morphology.[19]

OHSS exclusively occurs in women received ovulation inducing drugs and usually presents during 1st trimester of pregnancy and rarely to be asymptomatic.[18]

In this case, HL occured in a spontaneously conceived twin pregnancy and had no history of taken ovulation inducing drugs.

Additionally, HL can even mimic ovarian tumors, especially the mucinous cystadenoma type [20].

However, when compared with HL, mucinous tumours have smaller thin-walled locules that are not as round and tend to have less solid tissue than in case of HL.

The current case discussed three important clinical objects.

Firstly, scanning of ovaries by ultrasound during antenatal care is essential even in women with no risk factors for HL. Early diagnosis can avoid the occurrence of complications and unnecessary surgical intervention.

Secondly, palpation of adnexa after closure of uterine incision during C-section is mandatory to exclude presence of any ovarian pathology. Enlarged ovaries and adnexal masses have a great liability to torsion during puerperium and may need re-exploration in some cases.

In addition, HL is self-limited disorder with complete resolution within 6 weeks; any surgical intervention may lead to damage of the ovarian tissue without real benefit to the patient.

Conclusion:

We have described a case of HL encountered during caesarean section in asymptomatic women with a risk factor of twin pregnancy presenting as bilateral enlarged ovaries. Although HL is rare in spontaneously conceived twin pregnancy. Knowledge of the characteristics features, benign nature and postpartum resolution of HL should permit a conservative approach to management of women with HL, consequently limiting surgical and reproductive morbidity. The obstetricians should be aware of this(HL) condition to avoid unneeded surgical intervention.

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Case Report

A Case of Death Due to Self Suspension

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Abstract:

Death by hanging due to compression of the neck as a result of suspension of the body by means of a ligature in such a manner that the weight of the body acts as a constricting force. It is distinguished from strangulation where the neck is constricted irrespective of any effect caused by the weight of the body. This distinction is of practical importance because hanging is usually presumptive of suicide, whereas strangulation is usually homicidal. Homicidal hanging or suspension of the victim after murder is quite rare**.** This case was a misfortunate male, named Md. Shah Jamal Azim. His wife used to suspect him for his elicit relationship with another woman.

Familial disharmony and regular domestic clash lead him to end his life by suicide (hanging). This case had an exception that is ligature mark which was double impression. Social Media and community go in favor in homicide but it was truly suicidal in nature.

Key words: Hanging, Suicide, Ligature mark, Post-mortem

Introduction:

Hanging is defined a form of violent asphyxia as a result of suspension of the body by a ligature around the neck, the constricting force being the weight of the body. The ligature constricts the neurovascular bundle of the neck and/or the upper airways.[2]

Most hangings are self-suspension. This may be carried out by a wide variety of method. A typical method of self-suspension is to attach a thin rope to a high point such as a ceiling beam or a staircase. The lower end is formed into either a fixed loop or a slip knot, which is placed round the neck while the intending suicide stands on a chair or other support. On jumping off or kicking away the support, the victim is then suspended with all or most of his weight upon the rope.[2]

Hanging is one type of violent asphyxial death. The circumstances of the suspension could be suicidal, homicidal, accidental or in some rare instances may be post-mortem suspension (In hanging the vast majority are considered as suicidal).[3]

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Self-suspension is the common method of suicide. Hanging in its face value goes in a favor of suicidal in nature. Depending on the area of the country, hanging is either first or second most popular method of suicide.[3]

"Ligature mark" is the pressure mark on the neck at the site of ligature. It appears as a groove. In early period, deceased looks pale, later it becomes yellowish brown, dry hard and parchment like. There is often narrow zone of reddened hyperaemia at either margin of the mark. The ligature mark is situated above the level of thyroid cartilage in 15% cases and below the cartilage in 5% cases especially in partial hanging.[5]

Motives behind hanging:

- Domestic troubles, worries and quarrels.
- Poverty and financial loss.
- Failure at examinations or scolding on that account by the guardians.
- Disappointment in love.
- Incurable disease prolonged suffering from disease or mental illness.[3]

Ligature Material:

A suicide will be any article readily available for the purpose like a rope, cord, metallic chain and ware, leather strap, belt, bed sheet, scarf, saree etc. The doctor should note whether the mark on the neck correspond with material alleged to have been used in hanging and

if it is strong enough to bear the weight and the jerk of the body. He should also note its texture and length to know whether it was sufficient to hang.[4]

Mechanism of death by hanging: In a less-than-ideal long drop, if the distance is miscalculated or some other factor misses the mark, the subject will die of decapitation (if the drop is too long) or of strangulation (if the drop is too short or the noose knot isn't in the correct position). Strangulation can take several minutes and is a far more excruciating experience. The carotid arteries in the neck, which supply blood to the brain, are compressed, and the brain swells so much it ends up plugging the top of the spinal column; the Vagal nerve is pinched, leading to something called the Vagal reflex, which stops the heart; and the lack of oxygen getting to the lungs due to compression of the trachea eventually causes loss of consciousness due to suffocation. Death then follows in the same pattern as it does when the neck breaks, with the entire process ending in anywhere from five to 20 minutes.[5]

History of the case:

An unfortunate young man named Shah Jamal Azim, aged about 35 years was found dead by hanging in his house at 22:15 hours, dated 08-07-2010 from 4/A, Vagolpur Lane (Ist Floor), Hazaribagh, Dhaka.

According to the inquest report, the deceased named Shah Jamal Azim, son of late Abdur Rashid, 4/A, Vagolpur Lane, PS: Hazaribag, DS: Dhaka was a Garment Worker. He was married and having no children. After the marriage, Irin Begum, his wife discern that her husband had a illicit relationship with another 35years-old woman 'Ashia Begum' (C/O Amir Hossain, 65, Nilombar Road, PS: Hazaribag DS: Dhaka). She perceived that in absence of her (Irin Begum), Mrs. Ashia Begum used to visit with her husband in his house. As a result, regular conflict occurred between them. After that, this familial predicament was solved by local Guardian, but this familial quandary still went on between them.

The deceased become disenchant and got mentally depressed for the last few days before this incidence occurred. He used to utter his relatives that his life became worthless and mentally distressed. On 8th July 2010, about 12:00 PM, Irin Begum, Shah Jamal Azim's wife went to visit her father's house at Kamrangirchar. She came back to the house on the same day at 05:30 PM, After came back she found that the door was locked from inside and after many calls there was no response from her husband. She got very anxious and informed it to her elder sister Nasreen Begum. Knowing the concern, Nasreen Begum came to her house on the same day at 06:30 PM. Nasreen Begum and Sonia Begum, wife of elder brother of Shah Jamal Azim repeatedly knocked the door but there was no response at all. Then they called shah Alam Litu, the elder brother of the deceased using cell phone. After heeding the news, he came to the house at 07:30 PM on the same day, broke the locked door and found the victim was suicide through hanging from the clasp of ceiling fan usig the orna (female scarf) of his wife. Mr. Shah Alam Litu, therefore, reported it to the local police at the Hazaribag police station. The police visited the scene of incidence and found the victim was fully hanged. They laid down the body of the deceased on the floor by cutting the ligature material. After preparing all documents, the body of the victim was sent for Post-Mortem Examination at the Sir Salimullah Medical College Morgue under the Department of Forensic Medicine.

Post-Mortem Examination:

The victim's body was identified at Sir Salimullah Medical College Morgue by Md. Delwar, the escorting police constable of Hazaribagh Police Station and Mr. Shah Alam Litu, the elder brother of the deceased.

The Post-mortem examination was performed at Sir Salimullah Medical College at 09:30 AM on 9th July, 2010. The autopsy was conducted by Dr. Rahila Khatun, Lecturer of Forensic Medicine Department of SSMC (SSMC PM No 221/10, Dated 9th July, 2010 and Hazaribagh Police Station U.D No: 26, Dated, 9th July, 2010)

Report of External examination:

Condition of the body:

The **body** was in fresh state.

Body **Built**: Average.

Complexion: Fair.

Eyes: Partially opened.

Mouth: Partially opened.

Tongue: Bitten with teeth.

Dribbling of saliva present in the **angle of mouth.**

Cyanosis: Present in the nail beds.

Rigor mortis: Present in both lower limbs.

There was slight involuntary **discharge of semen** from the urethra.

Anal orifice was normal.

On neck findings

There was **an oblique**, **non-continuous, ligature mark** (having two impression) present high up of the neck, breadth was 2 inch and gap was on the nape of the neck which was about 2 inch.

No other external injury was found on victim's body.

Internal Examination:
Dissection of the body was done by **V shaped incision**.

a) **Scalp:** Healthy

b) **Skull:** Healthy & intact.

c) **Brain & Meninges**: The brain & meninges was found congested.
No injury or hemorrhage was found.

d) **Neck**: The subcutaneous tissues underneath the ligature mark of the neck became Dry, firm, glistening and parchmentized.
Hyoid bone was found intact.
The trachea was found congested and little froth was found.
Cervical vertebra was found intact
There was no other injury was found.

e) **Thoracic cavity:**
Lungs- Pleura was congested.
Both Lungs were congested.
Heart: Pericardium was healthy
Right chamber of heart was full of blood, left chamber was empty.
No internal injury was detected in the thoracic cavity.

f) **Abdominal & pelvic cavity:**
Liver: Congested
Spleen: Congested
Kidney: Congested
Stomach: Healthy and contained partially undigested food about 4oz
Small intestine: Congested
Large intestine: Congested.
Urinary bladder: Healthy & empty.

g) **Genito-urinary system:**
The victim was circumcised.
Prostate was healthy
Both testis were healthy
Urethra was healthy & a little seminal discharge was found.
There was no internal injury was found.

Figure-1: *Ligature mark.*

Figure-2: *Ligature mark*

Investigations:

1. Specimen from above and below the ligature was sent for histopathology; results showed vital reaction.
2. Stomach contents were sent for chemical analysis. Result was negative for alcohol, drugs or any other poison.
3. Blood tests results for alcohol, drugs and poison were negative.

Post mortem opinion:

Cause of death was due to asphyxia as a result of hanging; ante-mortem and suicidal in nature.

Discussions:

1. Medico-legal aspects.
2. Legal aspects.
3. Social and psychological aspects

1. Medico-legal aspects:

There are certain questions to be answered by the Forensic pathologist in a case of a death due to suspension.

a) Was death due to suspension?

b) If death was due to suspension; was it suicidal, accidental or homicidal?

a) Was the death due to suspension?

When the body is found to be in a suspended state by a ligature round the neck, the possibility of strangulation by ligature, post-mortem suspension and hanging should be kept in mind. It is one of the most common forms of suicide in Bangladesh.[3]

Strangulation by ligature:

In case of strangulation, the ligature mark will be at or below the level of thyroid cartilage. The mark will be circular, continuous, abraded, contused and sometimes parchmentized. Fracture of superior horn of thyroid cartilage is very common but fracture of the hyoid bone is most uncommon. There may be more than one turn of ligature mark. The face is highly congested and cyanosed. Post-mortem staining is deep. There may be involuntary discharge of urine, fecal matter, semen etc. Tardieu's spot is more abundant. There may be bleeding from nose, mouth, ear etc. Signs of struggle may be present.8

In this case, the absence of all these findings clearly indicates that it is not a case of strangulation by ligature.

Post-mortem hanging or suspension:

In this case, the ligature mark will be continuous, more or less circular and low down in the neck due to application of too much force. Knot will be more than one and is tied with great force usually front of the neck. Evidence of dragging mark will be found on the body. There will be no signs of dribbling of saliva. Absence of acute tissue reaction around the ligature will indicate post-mortem hanging[4].

Detailed musculoskeletal dissection of the victim and V shaped dissection of neck revels no such injury. In absence of deliberate trauma, negative toxicological result and violence other than the suspension mark; the possibility of post-mortem suspension could be excluded.

In case of hanging:

In case of hanging, the findings for diagnosis are the ligature mark, which is caused by imprint of ligature material that has been used.

The ligature mark around the neck is usually single. The groove has a yellow parchment like appearance and is deepest at the point where the weight of the body is taken by the ligature.

Fracture of hyoid bone and thyroid cartilage is much less common in hanging than manual throttling. There are not much extravasations of blood in tissues. Dribbling of saliva from the angle of mouth is present.[2]

In this case, signs of asphyxia, findings of ligature mark which showed vital reaction and was consistent with imprint of ligature material used, position of ligature which was high up, oblique, non-continuous; Dribbling of saliva, intactness of hyoid bone and thyroid cartilage; absence of any pathology, fatal injury, negative report for drug, alcohol, toxicology etc. all goes in favor Suspension.

B) If death was due to suspension, was it suicidal, accidental or homicidal?

Suicide: Hanging is a common method of asphyxial suicide in many countries including Bangladesh. Person can be between 10-80 years, more common in males. point of suspension remains approachable to the suicide. Partial hanging is almost always suicidal in nature. A history of a previous attempt may be present and generally committed in a secluded place. Suicidal note may be left behind. There should be a motive for committing suicide. Fibres of ligature material may be present in the clenched hand.

Homicide: - Very rare. Not ordinarily possible in an adult victim, unless intoxicated or made unconscious or the victim is either child or debilitated person.

Homicide should be suspected where:

1. There are signs of violence/disorder of furniture.
2. Clothing of deceased is torn or disarranged.
3. There are injuries, either offensive or defensive.

Accidental: Hanging deaths in children <6 years are usually accidental. It has been reported among children while playing hanging ort playing "Lasso" or getting suspended from playground equipment and sometimes even in adults.[6]

Suicide may be confirmed by the presence of suicide notes and of a platform such as chair, table used to affect suspension. In this case, the deceased was found hanging by a nylon rope around his neck and other end being attached to ceiling fan. The room was closed from inside. The point of suspension was made accessible by a chair (as described in inquest report). The ligature material was also available to the victim. The ligature

mark was high up in neck, oblique, non-continuous. There was no sign of struggle or foul play. The victim was mentally depressed for his wife's infidelity delusion on him. Familial conflict and acute domestic crisis which act as aggravating factor for taking decision of self-destruction.

Considering all the above factors, the findings go in favor of ante-mortem hanging.

2. Legal aspects:

Suicide means self-committed murder. Acts or instances of taking one's own life voluntarily. Attempted suicide is an offence under the Penal Code of Bangladesh (Section: 305,306,309)

Section 305 BPC: Punishment for abetment of suicide of a child under 18 years of age or of an insane, idiot, delirious or intoxicated person may be death or imprisonment for life or imprisonment for a period not exceeding 10 years with or without fine.

Section 306 BPC: Punishment for abetment of suicide in any other case may extend up to 10 years which may be either description (simple or rigorous), with or without fine.

Section 309 BPC: Attempt to commit suicide makes the person so attempted, liable to be punished with simple imprisonment which may extend for period of 1 year and or fine.[3]

3. Social and psychological aspect:

Treatment and rehabilitation of victims of attempted suicide is an important social aspect. They need to be given proper psychotherapy and medication in a psychiatric center under the expert management of a psychotherapist. This case both the victim & his wife had been suffering from acute psychological crisis that is infidelity delusion (False belief of unfaithfulness).

Difficulties in diagnosis of death from hanging:

Following may be difficult to explain if a body found hanged:

1) Ligature running around the neck-victim might be killed first by strangulation and then hanged to simulate suicidal hanging.
2) Presence of two ligature marks-it might be an ante-mortem hanging case, but after few minutes of hanging, it might have slipped further down producing second ligature mark.
3) Nail marks on the neck-it might look like manual throttling, but possibilities are that, the victim after getting hanged around neck with his or her fingers and while doing so his or her own fingernails might have produce nail marks.
4) Faint ligature mark-may be in dark skin complexion person.
5) Ligature marks resists putrefaction.
6) Injuries on the body-victim while inducing hanging might have got injured him/herself.[9]

There may be no ligature mark, the intervention of a thick & long beard or clothes on the neck may lead to the slight mark.

If the ligature is soft, and the body be cut down from ligature immediately after death.[7]

Conclusion:

Cases of suicidal death are increasing day by day in our country. Of them hanging death is the most common methods of suicides in both urban & rural areas in Bangladesh. Most of the people of Bangladesh are very emotional especially female. Recent studies showed that provocative suicidal hanging increasing day by day among females. Proper education, psychotherapy, removal of predisposing factors such as eve teasing, family violence, removal of other provocation factors can improve this situation. Proper case study can also play a good role.

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