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# GREEN LIFE MEDICAL COLLEGE JOURNAL

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## ABOUT THE JOURNAL

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### **AIMS & SCOPE:**

The Green Life Medical College Journal is an English Language Scientific papers dealing with clinical medicine, basic sciences, epidemiology, diagnostic, therapeutics, public health and healthcare in relation to concerned specialities. It is an official journal of Green Life Medical College and is published bi-annually.

The Green Life Medical College Journal of Bangladesh intends to publish the highest quality material on all aspects of medical science. It includes articles related to original research findings, technical evaluations and reviews. In addition, it provides readers opinion regarding the articles published in the journal.

### **INSTRUCTION TO AUTHORS:**

#### **Papers:**

The Green Life Medical College Journal (published bi-annually) accepts contributions from all branches of medical science which include original articles, review articles, case reports, and letter to the Editor.

The articles submitted are accepted on the condition that they must not have been published in whole or in part in any other journal and are subject to editorial revision. The Editor preserves the right to make literary or other alterations which do not affect the substance of the contribution. It is a condition of acceptance that the copyright becomes vested in the journal and permission to republish must be obtained from the publisher. Authors must conform to the uniform requirements for manuscripts submitted to biomedical journals (JAMA 1997; 277: 927-34).

#### **Legal Considerations:**

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### **Preparation of manuscript:**

Each manuscript should indicate the title of the paper, and the name(s) and full address(es) of the author(s). Contributors should retain a copy in order to check proofs and in case of loss. Two hard copies of each manuscript (double-spaced) should be submitted. If a manuscript is accepted for publication in the GMCJ, the editor responsible for it may request a soft copy (a CD or via internet) of the final revision. Each paper will be reviewed for possible publication. The Editor may wish to see the raw data (electronic form) if necessary.

In preparing the manuscript, use double spacing throughout, including title, abstract, text, acknowledgement, references, table and legends for illustrations and font size 'Times New Roman 12'. Begin each of the following sections on a separate paper. Number pages consecutively.

### **The standard layout of a manuscript:**

- Title page
- Abstract, including Keywords
- Introduction
- Methods
- Results
- Discussion
- Acknowledgements
- Funding
- List of references
- Tables & Figures
- Illustrations

The pages should be numbered in the bottom right-hand corner, the title page being page one, etc. Start each section on a separate page.

### **Title page:**

A separate page which includes the title of the paper. Titles should be as short and concise as possible (containing not more than 50 characters). Titles should provide a

reasonable indication of the contents of the paper. This is important as some search engines use the title for searches. Titles in the form of a question, such as ‘Is drinking frequent coffee a cause of pancreatic carcinoma?’ may be acceptable.

The title page should include the name(s) and address(es) of all author(s). Details of the authors’ qualifications and post (e.g., professor, consultant) are also required. An author’s present address, if it differs from that at which the work was carried out, or special instructions concerning the address for correspondence, should be given as a footnote on the title page and referenced at the appropriate place in the author list by superscript numbers (1 2 3 etc.) If the address to which proofs should be sent is not that of the first author, clear instructions should be given in a covering note, not on the title page.

**Abstract:**

The ‘Abstract’ will be printed at the beginning of the paper. It should be on a separate sheet, in structured format (Introduction/Background; Methods; Results; and Conclusions) for all Clinical Investigations and Laboratory Investigations. For Reviews and Case Reports, the abstract should not be structured. The Abstract should give a succinct account of the study or contents within 350 words. The results section should contain data. It is important that the results and conclusion given in the ‘Abstract’ are the same as in the whole article. References are not included in this section.

**Keywords:**

Three to six keywords should be included on the summary page under the heading Keywords. They should appear in alphabetical order and must be written in United Kingdom English spelling.

**Introduction:**

The recommended structure for this section is

- Background to the study/Introduction
- What is known/unknown about it
- What -research question/hypothesis you are interested in
- What objective(s) you are going to address

The introduction to a paper should not require more than about 300 words and have a maximum of 1.5 pages double-spaced. The introduction should give a concise account of the background of the problem and the object of the investigation. It should state what is known of the problem

to be studied at the time the study was started. Previous work should be quoted here but only if it has direct bearing on the present problem. The final paragraph should clearly state the primary and, if applicable, secondary aims of the study.

**Methods:**

The title of this section should be ‘Methods’ - neither ‘Materials and methods’ nor ‘Patients and methods’. The Methods section should give a clear but concise description of the process of the study. Subjects covered in this section should include:

- Ethics approval/license
- Patient population
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- Statistics
- Cognitive Task Analysis (CTA)

**Ethical clearance:**

Regardless of the country of origin, all clinical investigators describing human research must abide by the Ethical Principles for Medical Research Involving Human Subjects outlined in the Declaration of Helsinki, and adopted in October 2000 by the World Medical Association. This document can be found at: <http://ohsr.od.nih.gov/guidelines/helsinki.html>. Investigators are encouraged to read and follow the Declaration of Helsinki. Clinical studies that do not meet the Declaration of Helsinki criteria will be denied peer review. If any published research is subsequently found to be non-compliant to Declaration of Helsinki, it will be withdrawn or retracted. On the basis of the Declaration of Helsinki, the Green Life Medical Journal requires that all manuscripts reporting clinical research state in the first paragraph of the ‘Methods’ section that:

- The study was approved by the appropriate Ethical Authority or Committee.
- Written informed consent was obtained from all subjects, a legal surrogate, or the parents or legal guardians for minor subjects.

Human subjects should not be identifiable. Do not disclose patients’ names, initials, hospital numbers, dates of birth or other protected healthcare information. If photographs of persons are to be used, either take permission from the person concerned or make the picture unidentifiable. Each figure should have a label pasted on its back indicating name of the author at the top of the figure. Keep copies of

ethics approval and written informed consents. In unusual circumstances the editors may request blinded copies of these documents to address questions about ethics approval and study conduct.

The methods must be described in sufficient detail to allow the investigation to be interpreted, and repeated if necessary, by the reader. Previously documented standard methods need not be stated in detail, but appropriate reference to the original should be cited. However, any modification of previously published methods should be described and reference given. Where the programme of research is complex such as might occur in a neurological study in animals, it may be preferable to provide a table or figure to illustrate the plan of the experiment, thus avoiding a lengthy explanation. In longitudinal studies (case-control and cohort) exposure and outcome should be defined in measurable terms. Any variables, used in the study, which do not have universal definition should be operationalised (described in such terms so that it lends itself to uniform measurement). Where measurements are made, an indication of the error of the method in the hands of the author should be given. The name of the manufacturer of instruments used for measurement should be given with an appropriate catalogue number or instrument identification (e.g. Keyence VHX-6000 digital microscope). The manufacturer's town and country must be provided, in the case of solutions for laboratory use, the methods of preparation and precise concentration should be stated.

#### **Single case reports:**

Single case reports of outstanding interest or clinical relevance, short technical notes and brief investigative studies are welcomed. However, length must not exceed 1500 words including an unstructured abstract of less than 200 words. The number of figures/tables must not be more than 4 and references more than 25.

#### **Animal studies:**

In the case of animal studies, it is the responsibility of the author to satisfy the board that no unnecessary suffering has been inflicted on the animal concerned. Therefore, studies that involve the use of animals must clearly indicate that ethical approval was obtained and state the Home Office License number or local equivalent.

#### **Drugs:**

When a drug is first mentioned, it should be given by the international non-proprietary name, followed by the chemical formula in parentheses if the structure is not well known, and, if relevant, by the proprietary name with

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Present the result in sequence in the text, table and figures. Do not repeat all the data in the tables and/or figures in the text. Summarize the salient points. Mention the statistics used for statistical analysis as footnote under the tables or figures. Figures should be professionally drawn. Illustration can be photographed (Black and White glossy prints) and numbered.

#### **Discussion:**

Comments on the observation of the study and the conclusion derived from it. Do not repeat the data in detail, already given in the results. Give implications of the findings, their strengths and limitations in comparison to other relevant studies. Avoid un-qualified statements and conclusions which are not supported by the data. Avoid claiming priority. New hypothesis or implications of the study may be labeled as recommendations. Letters are welcome. They should be typed double-spaced on side of the paper in duplicate.

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#### **Examples of correct forms of references:**

Dorababu M, Prabha T, Priyambada S, Agrawal VK, Aryaa NC, Goel RK. Effect of Azadirachta indica on gastric ulceration and healing of bacopa monnierang in experimental NIDDM rats. *Indian J Exp. Biol* 2004; 42: 389-397.

#### **Chapter in a book:**

Hull CJ. Opioid infusions for the management of postoperative pain. In: Smith G, Covino BG, eds. *Acute Pain*. London: Butterworths. 1985, 1 55-79.

Authors can write 'Letter to Editor' for any query.

All manuscripts for publication should be addressed to the Editor.

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#### **Professor M.A. Azhar**

Principal

Green Life Medical College and

Editor-in-chief

Green Life Medical College Journal

## ABOUT THE COLLEGE

### INTRODUCTION

In 2005, about 50 distinguished physicians of the country started a hospital to give specialized care in the private sector. They named it Green Life Hospital and it turned out to be a great success. So in 2009, they decided to establish a medical college which will be a non-government, non-profit, self-financing project and will serve the humanity.

This College came into existence in 2009. The college commences its activities with the enrollment of 51 students in the 1<sup>st</sup> batch in 2010. Since inception, the college has undergone tremendous development and became a splendid centre for learning and development. At present we are enrolling 110 students each year. Among them, numbers of seats are reserved for overseas students.

We continue to evaluate and improve our programme to ensure the best medical education for the students. Our educational strategy is to create a conducive learning environment and to steer our students to acquire adequate knowledge, skills and temperament to practice medicine and be a competent health care professional group.

Green Life Medical College (GMC) is approved by the Ministry of Health and Family Welfare (MOHFW), Government of Bangladesh and Bangladesh Medical and Dental Council (BMDC) and affiliated to the University of Dhaka.

### AIMS AND OBJECTIVES OF THE COLLEGE

#### **Aims:**

To create a diverse and vibrant graduate scholars in medical discipline and to create highly competent and committed physicians for the country.

#### **Objectives:**

- To provide an appropriate learning environment where medical students can acquire a sound theoretical knowledge and practical skills with empathetic attitude to the people.
- To carry out research in medical sciences to scale up the standard of medical education in the country.

### LOCATION

The campus is located at 32, Bir Uttom K. M. Shafiullah Sarak (Green Road), Dhanmondi, Dhaka. The location is at the heart of the mega city Dhaka and is facilitated with very good communication networks.

The Medical College and the Hospital complexes have been raised in a multistoried fully air-conditioned building with an arrangement of approximately 500 patients. The building is equipped with state-of-the-art infrastructure, excellent with an out-patient department and adequate in-patient facilities.

# GREEN LIFE MEDICAL COLLEGE JOURNAL

## CONTENTS

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Vol. 1

No. 2

July 2016

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### Editorial

- Present, Past and Future of Traumatology and Orthopaedics in Bangladesh 39  
*Prof. Md. Nazrul Islam*

### Original Articles

- Profile of Deliberate Self-poisoning Cases Admitted in a District Hospital of Bangladesh 41  
*Ara R, Alam MZ, Kobir M, Banik J, Parvin R*
- Anti-inflammatory Activity of *Aegle marmelos* (bael) Root on Carrageenan-induced Paw Oedema in Rats 47  
*Aktar MT, Khan I, Rahman MR, Sharmin ZR, Hoque MM, Rahman S*
- Pattern of Psychiatric Morbidity among Children Attended at Psychiatric Outpatient Department in a Teaching Hospital 51  
*Chowdhury NN, Chowdury NS, Khanam A, Hossain F, Khanduker N, Akhtar G*
- Immunization with Tetanus Toxoid Vaccine among Laboratory Technicians of Dhaka 56  
*Azim E, Chowdhury N, Ferdous J, Imtiaz KS, Jahan S*

### Review Articles

- *Clostridium Difficile* Infection: Pathogenesis and Management 61  
*Begum S*
- Evidence Based Practice in Gynae and Obstetrics 65  
*Shompa L, Roy JS, Nahar K*

### Case Reports

- Mother of Two Children with Takayasu's Arteritis - A Case Report 68  
*Roy JS, Haq SA, Bonik D, Shompa L, Khan M*
- Cervical Tuberculosis with Uncommon Presentation 71  
*Akter A, Uddin MN, Imtiaz KS, Azim E, Islam FB*
- Acute Puerperal Uterine Inversion - A Case Report 74  
*Rahman S, Kamruzzaman M, Ahmed M, Dutta S*

### College News

78

# Present, Past and Future of Traumatology and Orthopaedics in Bangladesh

Prof. Md. Nazrul Islam

Road traffic injury is the most common causes of death in people from 15-29 years of age throughout the world. More than 1.2 million people die each year in road traffic accidents globally, making road traffic injuries a leading cause of death<sup>1</sup>.

The WHO Global Burden of Disease Study<sup>2</sup> predicts the following changes from 1990 to 2020.

- Road traffic injuries will rise to become the third leading cause within 2020.
- Road traffic injuries will become the second leading cause for low-income and middle-income countries.
- Road traffic deaths will increase worldwide, from 0.99 million to 2.34 million (representing 3.4% of all deaths).
- Road traffic deaths will increase on average by over 80 percent in low-income and middle income countries and decline by almost 30 percent in high income countries.

In our country in Emergency department more than 50% patients are of different types of casualty victims. Approximately 33% of the beds in primary and secondary level hospitals in Bangladesh are occupied by injury-related patients, and more than 19% of the injury patients had been injured in a road traffic accident<sup>3</sup>.

According to a statistic, road accident in Bangladesh claims on an averages 4,000 lives and injure another 5,000 in a year<sup>5</sup>. This number only includes reported incidences to the authority. WHO estimates that the actual fatalities could be much more. In 2013 alone fatality was 21,316 in Bangladesh<sup>4</sup>. Annual cost of road traffic accidents is estimated to be approximately BDT 45 billion (US\$ 76 million)<sup>6</sup>.

Death due to trauma and accident is highest between the ages of 20-40 years which is the most functional period of life in our country<sup>8</sup>. We remember the mass casualties like Jogonnath Hall Tragedy, Mirershorai Bus accident involving children, Saver garment building (Rana Plaza) collapse and also daily accident report in media.

For every death in an accident two will be severely injured<sup>8</sup>. Even after better management they will survive with different types of disabilities and they mostly will become financial burden for the family as well as the country. Some estimate that if trauma care systems for seriously injured patients in low and middle-income countries could be brought up to the levels of high performing countries, an estimated half a million lives could be saved each year<sup>9</sup>. In the western world the budget of trauma and accident management is about four times than our current national budget.

Previously Orthopaedic surgery in Bangladesh was practiced by the general surgeons. In 1963, the first orthopaedic unit was established at Dhaka Medical College Hospital with only one trained orthopaedician.

The Traumatology and Orthopaedics came into light as a separate entity after the liberation of Bangladesh. The injured freedom fighters and other war victims needed rapid and appropriate injury management and rehabilitation after liberation war which was not available in Bangladesh. With the leadership of R.J Garst MD, an American orthopaedic surgeon a separate unit of orthopaedics, trauma & rehabilitation consisting of 100 bed was started in Shaheed Suhrawardy Hospital at Dhaka. In early days, the unit depended mostly on volunteer staff and they came from all over the world. They were doctors, nurses, physiotherapists, occupational therapists, limb-makers, brace makers, secretaries etc. By July, 1973 the Government of Bangladesh started taking the financial burden of the unit and also started to replace volunteers with government employees. Rehabilitation Institute and Hospital for the disabled (RIHD) was established in 1978 as a separate 500 bedded Orthopaedic & Trauma hospital which also serve as a teaching institute<sup>9</sup>. By the desire and direct active cooperation of Bangabandhu Sheikh Mujibur Rahman and R.J Garst, RIHD was established to meet the increasing need of trauma and orthopaedic care of the country and to produce future orthopaedic surgeons. World standard post graduate courses (MS & Diploma) in Orthopaedic surgery, Physiotherapy & limb



making under the University of Dhaka was initiated in 1973 at RIHD.

RIHD has become National institute of Traumatology and Orthopaedics Rehabilitation (NITOR) in 2002. The institute became and still is the prime center of orthopaedic service and training of orthopaedic surgeons, nurses, and physiotherapists in Bangladesh. In 1998 Post graduate training and courses were introduced in the country's Medical University (BSMMU) and eight other Government Medical College Hospitals. As a result, Bangladesh has now over seven hundred orthopaedic surgeons mostly trained locally and employed by the government of Bangladesh. At present consultant orthopaedic surgeons are posted in all the 64 district hospitals and about 120 upzilla hospitals in the country. Still the ratio of orthopaedic surgeons to patients is far behind the standard set by World Health Organization in our densely populated country.

The importance of orthopaedics & traumatology in undergraduate studies like MBBS course is paramount as we still need more qualified doctors to provide adequate health care to our country. Basic trauma and orthopaedic care at thana level is given by non-specialized doctors and that is why their training at undergraduate level needs to be adequate.

Even considering our limited resources, the curriculum for under graduate medical education-updated-2012 has given the priority to the subject of Traumatology and Orthopedics more than the previous curriculums.

In the current curriculum of under graduate course give the emphasis to learn and recognize the severity of trauma. It also outlines emergency care like first aid, life support and cardiopulmonary resuscitation in accident and trauma victims.

The World Health Organization has estimated that by the year 2020, trauma will account for approximately one-third of the world's disease, a very thought-provoking figure indeed.<sup>7</sup>

The importance given by the World Health Organization and practical needs of this subject have third priority depending on mortality and morbidity in Medical science. In final MBBS examination Orthopaedics & Trauma is treated as small part of general surgery, having the priority about 10 to 12 percent in final MBBS examination. It is

inappropriate and irrelevant to the need in under-graduate course and curriculum.

At present MBBS curriculum (2012) has 55 Lectures (45 hours) in Traumatology and Orthopaedics and 2 months of ward placement in 4th year and 5th Year. It is the highest among the allied subjects in surgery. In final MBBS examination of surgery, one optional external or internal examiner of Orthopaedics can be included within four examiners, and one box structured oral examination questions out of ten box is selected.

To give more emphasis on learning in under-graduate course, it is highly recommended to arrange Orthopaedics and Traumatology as a separate subject and individual board, in final MBBS examination.

*Journal of Green Life Med. Col. 2016; 1(2): 39-40*

### **Prof. Md. Nazrul Islam**

Professor & Head of the Department of Orthopaedics  
Green Life Medical College

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## **Profile of Deliberate Self-poisoning Cases Admitted in a District Hospital of Bangladesh**

ARA R<sup>1</sup>, ALAM MZ<sup>2</sup>, KOBIR M<sup>3</sup>, BANIK J<sup>4</sup>, PARVIN R<sup>5</sup>

### **Abstract**

*Introduction: Poisoning is the most common form of fatal self-harm in rural Asia. This has posed major burden on already struggling health systems in Bangladesh. Identification of vulnerable groups and patterns in deliberate self poisoning would help to identify the problems that are needed to be addressed in health policy.*

*Objectives: This study was conducted to determine the age and sex distribution of deliberate self-poisoning cases reported in a district hospital, to find out the pattern of substances used, the outcome and duration of hospital stay, and the cause of self poisoning.*

*Methods: This was a cross sectional observational study conducted in 250-bedded General Hospital, Kushtia from July to December 2008. All patients who had intentionally consumed toxic compounds like pesticides and drug overdosing were included in the study. Those who had accidental or occupational exposure were excluded. The data were collected in a pre-formed questionnaire. Statistical analysis was done using SPSS version 17.*

*Results: A total of 81 (32 male and 49 female) patients with deliberate self poisoning were included in the study. Most vulnerable age group was 15-34 years in both sexes. About 68% patients were married. Most of the married women were housewives. About 58% belonged to lower socioeconomic status. Organophosphorous compounds (OPC) were the most common poison (56.8%) in both male and female followed by sedative (22.2%) and rat killer (7.4%). Among the male patients the most common cause was quarrel with parents (28.1%) followed by chronic illness (15.6%) and failure in love (12.5%). Among the married females the most common cause was quarrel with spouse (30.6%) and in laws (22.4%). Quarrel with parents (20.14%) was again the most common cause in unmarried females. Two patients (2.5%) were died of poisoning. About 90% patients were discharged from hospital without any complication within three days and 7.4% were referred to higher institute.*

*Key words: Poisoning, deliberate poisoning, self-poisoning, OPC*

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### **Introduction:**

Deliberate self-harm was previously thought as a problem particular to the industrialized world but recent data

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4. Dr. Jayanta Banik, FCPS course student, BSM Medical University
5. Dr. Rukhsana Parvin, Associate Professor, Department of Medicine, Enam Medical College

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emphasized its importance in developing world. Deliberate self poisoning was responsible for around 600,000 deaths in 1990 in the developing world.<sup>1</sup> It has reached epidemic proportions in parts of the developing world where the toxicity of available poisons and sparse medical facilities ensure a high fatality rate.<sup>2</sup> A recent study demonstrated that 44% of all deaths amongst 10-50 year aged women in Bangladesh were due to poisoning, the majority following the suicidal ingestion of pesticides.<sup>3</sup> The WHO estimates, based on 2001 data, that 849,000 people die globally from self-harm each year.<sup>4</sup>

Poisoning is the commonest form of fatal self-harm in rural Asia, accounting for over 60% of all deaths<sup>5,6,7</sup> and is of

far greater importance than hanging, and other physical forms of self harm. This has caused major strain on the already overstretched health systems in our country. The socioeconomic condition of people in our country has led to a higher suicidal rate as compared to the Western world. With the identification of vulnerable groups and patterns in deliberate self poisoning, it may become possible to identify problems that are needed to be addressed during health policy making in future.

#### Methods:

This cross sectional observational study was conducted in the Department of Medicine, 250-bed General Hospital, Kushtia from July to December 2008.

All patients who had intentionally consumed toxic compounds like pesticides and drug overdosing were included. A case was designated as unknown poisoning if the patient or the patient's caretakers didn't reveal the substance taken. Those who had accidental or occupational exposure to these products, who were brought dead in emergency and who had been given drugs by others with the intent of robbing or other criminal purposes were excluded.

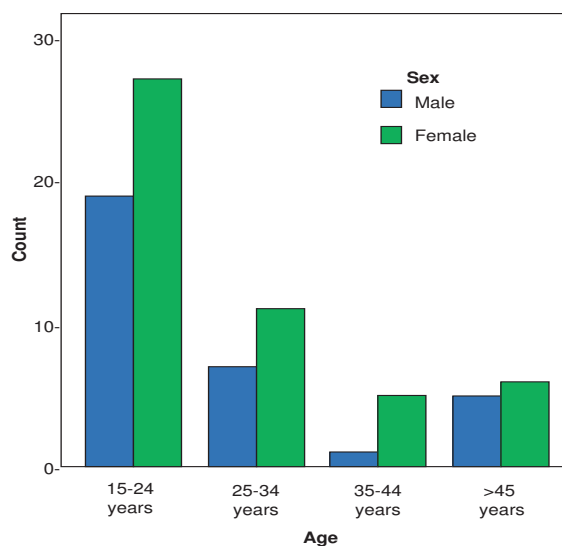
After meeting inclusion and exclusion criteria consecutive sampling was done. Sample size was 81.

After taking informed consent, data were collected in a pre-formed questionnaire that was specially designed for this study. The economic status of the patients was labeled according to monthly income (approximately). Patients with an income of <3,000 taka per month were labeled as lower socioeconomic status group. Patients with an income of 3,000-10,000 taka per month and > 10,000 taka per month were considered as middle and upper socioeconomic status group respectively

Data were entered into a computer and checked for inconsistency, then statistical analysis was done using SPSS version 17. The patients were analyzed for age, sex, religion, marital status, occupation, socioeconomic status, cause of poisoning, type of poisoning, duration to reach in the hospital and the outcome. Frequency was expressed as percentage.

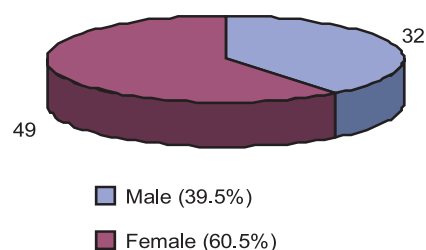
#### Results:

A total of 81 patients with deliberate self poisoning were included in the study. The distribution of patients in different age groups showed that highest numbers of patients were belonged to 15 to 24 years age group (figure 1).



**Fig-1:** Age distribution of the study patients

Out of these, 32(39.5%) were male and 49(60.5%) were female. (figure 2).



**Fig-2:** Sex difference in study population

Among the 81 patients who had consumed the poison 16 (19.75%) were married males and 16 (19.75%) were unmarried males. Among the females, 39 (48.15%) were married and 10 were (12.34%) unmarried. Most of the married women were housewives. Unmarried females and males were distributed in different occupations. Among male, cultivator was the most common occupation. Different occupational distributions were shown in table-I.

**Table-I**

*Distribution of occupations in the study population*

Sex	Occupation	Frequency	Percent (%)
Male	Cultivator	13	40.6
	Student	6	18.8
	Retired day labor	4	12.5
	Rickshaw puller	3	9.4
	Service holder	2	6.3
	Businessmen	1	3.1
	Others	3	9.4
	Female	Housewife	34
Student		13	26.5
Service holder		2	4.1

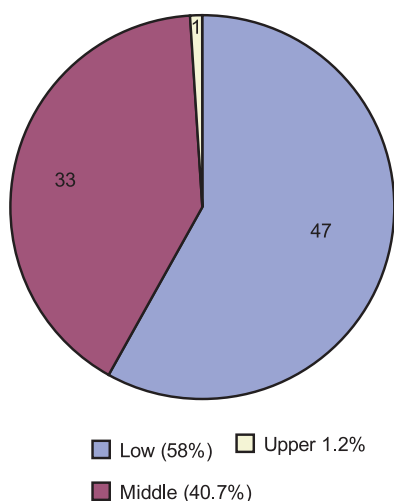
Most of the patients (55.6%) had reached to hospital within two hours of poisoning (table-II).

**Table-II**

*Duration between poison intakes to reach into hospital*

Time	Frequency	Percent
0-2 hours	45	55.6%
2-4 hours	20	24.7%
>4 hours	16	19.8%

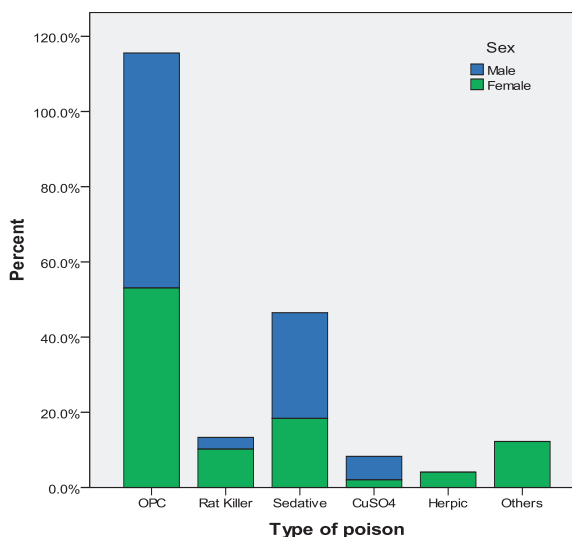
Most of the patients in the study belong to lower socioeconomic status i.e. 47 cases (58%). Thirty three cases (40.7%) in the study group were in middle and only one case (1.2%) was in upper socioeconomic status group (figure 3).



**Fig 3:** *Distribution of socioeconomic conditions in study patients*

Consumption of organophosphorous compounds was common in both male (20) and female (26) which included

56.8% cases followed by sedative poisoning which comprised of 18 cases (22.2%). Others included antihistaminics, anti-inflammatory drugs, analgesics, and paracetamol, savlon which constituted 6(7.4%) cases. Among these types of poisons, harpic was only consumed by the women (figure 4).



**Fig-4:** *Distribution of different types of poison used*

About seventy percent (69.1%) cases had a history of stomach wash before reach to hospital. Eighty nine percent (88.9%) patients had no family history of poisoning and only five patients (6.2%) had attempted self poisoning on a previous occasion.

Table-III shows the causes of suicidal poisoning, in most cases the reasons included quarrel, chronic illness, failure in love, depression among the students it was stress due to exams. Among the male patients the most common cause was quarrel with parents (28.1%) followed by chronic illness (15.6%) and failure in love (12.5%).

**Table-III**

*Cause of poison intake*

Cause of poisoning	Total		Male		Female	
	Frequency	Percent	Frequency	Percent	Frequency	Percent
Quarrel with parents	19	23.5	9	28.1	10	20.4
Quarrel with spouse	18	22.2	3	9.4	15	30.6
Quarrel with in laws	11	13.6	0	0	11	22.4
Quarrel with offspring's	3	3.7	1	3.1	2	4.1
Quarrel with neighbors	3	3.7	1	3.1	2	4.1
Quarrel with others	5	6.2	3	9.4	2	4.1
Chronic illness	7	8.6	5	15.6	2	4.1
Failure in love	6	7.4	4	12.5	2	4.1
Failure in exam	1	1.2	1	3.1	0	0
Psychiatric illness	6	7.4	4	12.5	2	4.1

Among the married females the most common cause was quarrel with spouse (30.6%) and in laws (22.4%). Quarrel with parents (20.14%) was again the most common cause of self poisoning in unmarried females.

Table-IV shows that only two patients (2.5%) died of organophosphorous poisoning. Six cases (7.4%) were referred to higher centre and most patients (90.1%) were discharged from hospital without any complication. Majority (72%) of the patients leaved the hospital within three days.

**Table-IV**

*Duration of hospital stay and outcome of study patients*

		Frequency	Percent
Duration of hospital stay	0-3 days	58	71.6
	4-7 days	23	28.4
Outcome	Discharge	73	90.1
	Referred to higher centre	6	7.4
	Death	2	2.5

### Discussion:

Poisoning is a common form of deliberate self harm in the developing world. While suicidal intent was often far lower than for self immolation deliberate self poisoning put an immense strain on hospital services particularly in Asia.<sup>2,8</sup> Many studies had shown that deliberate self-poisoning had a far higher mortality than accidental poisoning due to the toxicity of the poisons used and poor medical care.<sup>9,10</sup> In 1990, Jayaratnam estimated that self-harm resulted in 2 million cases each year with 2-lakh deaths.<sup>11</sup>

This study involved 81 patients, three fifth of them were females and the most vulnerable age group was 15-24 years (56.8%). Most studies conducted in different parts of Bangladesh had shown a predominance of male patients in acute poisoning.<sup>12,13,14</sup> This was due to the reason that all these studies included suicidal, homicidal and accidental as well as stupefying poisoning. We included only suicidal cases that showed a female predominance.

A large group of affected people in our study were young adults, between 15 to 34 years age group (79%). This finding was nearly similar to findings of other studies conducted in the Dhaka Medical College and District

Hospital level.<sup>15-19</sup> These group people are emotionally labile and they are not mature enough to tolerate extreme mental or physical pressure of modern lifestyle.

Our study also had similarities with some other studies that included suicidal poisoning. A study carried out in Turkey involved 131 (59.5%) female and 89 (40.5%) male patients. The most affected age group was 15-24 years (40.5%) in both sexes.<sup>20</sup> Another study conducted in Turkey produced similar results.<sup>21</sup> An analysis of all poisoning cases admitted in medical and pediatric wards in a hospital in central Nepal also shown that females outnumbered males and almost two thirds patients were young adults (15-34 years).<sup>22</sup>

Leslie SJ and associates had made a survey of admissions following self poisoning which involved 4220 patients. In their study, the average age was 34 years and most was females (56% vs 44%, p value < 0.001). 12 % of the patients were between the ages of 13-18 years.<sup>23</sup> A four years study conducted in Orissa involved 588 suicides cases and found that both male and females were affected equally.<sup>24</sup> Eddleston et al investigated the epidemiology of intentional self-poisoning in rural Sri Lanka by prospectively recording 2189 admissions found 57% patients were young (median age 25 years) male.<sup>25</sup>

The incidence of self-poisoning was higher in married people (67.9%) This was consistent with studies from Orissa<sup>26</sup> and Chandigarh<sup>27</sup>, and showed that married persons may become victims of greater stress than single individuals in their day-to-day lives.

Most of the cases of poisoning belonged to the low socio-economic group (58%) signifying the fact that financial and social problems may have an important bearing in the daily lives of these groups. The higher incidence in married and low socio-economic group was also observed in other studies in India.<sup>28,29</sup>

Maximum numbers of patients in the study were housewife followed by students and cultivator. Based on the predominant agricultural background of the study population, a significant number of cultivators were involved in self poisoning with pesticides. This observation correlated with previous findings of Azhar, Khan and Faiz et al.<sup>13,30,31</sup>

Like this study, OPC was commonly used as a suicidal poisoning by the poor rural people in the tropical Countries.<sup>32</sup> Because these compounds were easily available in the rural agricultural based area in Bangladesh,

similar results were found in different studies in Bangladesh.<sup>15-18</sup> Case series had also been reported in India and Sri Lanka.<sup>33,34</sup>

Sedative was the second most common product used for self harm in this study. This observation was different from Howlader et al report which showed that sedatives were used in only 5% of the total cases as a suicidal agent.<sup>35</sup> Like Sarker et al, rat killer was used in 7.4% of the poisoning cases in this study.<sup>15</sup> These agents were mostly used by the poor female. Next were the copper sulphate (3.7% of the total) used as a suicidal agent commonly by the rural poor people as copper sulphate was easily available in this area. In the study by Howlader et al CuSO<sub>4</sub> was used as a suicidal agent in 6% cases.<sup>35</sup>

Knowing someone who had committed suicide was a risk factor for deliberate self-harm.<sup>36</sup> The people used to learn from the surrounding people. Our study area was one of the well-known areas of suicidal death among the country. In our study we observed that 93.8% male and 85.7% female patients had no family history of self poisoning. So they may be influenced by others. In our study it was also observed that only 6.3% male and 6.1% female had a history of previous attempt for suicide. This dimension was not studied in other studies in Bangladesh. In a study in Srilanka, Michael Eddleston had stated that in interviews with 85 patients on the general medical wards, more than 90% stated that they knew someone who had harmed themselves, and 90% knew someone who had killed themselves.<sup>1</sup>

In our study quarrel with surrounding persons was the main cause of poison intake particularly with parents in both male and female patients. Quarrel with spouse and in laws was the main cause of poison intake in females. This was also documented in a study in Goa where harassment of women by in-laws and husbands, are an important cause of self poisoning.<sup>37</sup> Different studies in Bangladesh and abroad had documented that the attempted suicides may be due to various stress factors coming from financial, social, family problems, low level of education, immaturity and many more aspects of life. Easy availability of poisons made them easy victims also. This was similar to the findings in our study where we also found that stress due to chronic illness, failure in love, failure in exam was the cause of attempted suicide. Though not dealt adequately, mental disorders like depression and others was the cause of deliberate self harm in a minority of patients in our study (7.4%). Studies from south Asia show that up to half of all adult primary care attendants' have clinically important emotional disorders, most of which go undetected and treated with many drugs.<sup>38</sup>

In our study there was a very low mortality rate (2.5%). This finding was not similar to other studies in different parts of India<sup>39,40,41,42</sup> where mortality rate in suicidal poisoning is around 15%. In Bangladesh the baseline survey showed that mortality rate was 4.1%, but this study included suicidal, homicidal and accidental poisoning.<sup>43</sup> The case fatality rate in Sri Lanka was also high. Altogether 12.7% of patients admitted to Anuradhapura Hospital after self poisoning die, compared with 1-2% in the United Kingdom.<sup>2</sup>

Prevention of self poisoning and reducing death will require multiple approaches. Organophosphorus compound is responsible for all two deaths in our study. Unfortunately, the rural farmer will continue to need ready access to this pesticide for increasing his food production, banning it may lead to the adoption of another, equally dangerous ones. Long term improvements will come from reducing the incidence of harmful behavior and improving medical management. Hospital based psychological interventions after admission for self harm has become popular in an attempt to reduce repetition but the development of cost effective psychiatric and social support groups and to ensure access to greater number of patients will require reducing the incidence of self poisoning. Improved mental health care, particularly at the community level, must be an important part of any strategy.

### Conclusion:

Deliberate self-poisoning is an important cause of hospital admissions and subsequent morbidity and mortality in our country. In addition to improving medical care increase in public awareness about the seriousness of problem through health education and efforts to coping with stress and develop a healthy outlook towards life should be undertaken to reduce the incidence and death from deliberate self poisoning.

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## Anti-inflammatory Activity of *Aegle marmelos* (bael) Root on Carrageenan-induced Paw Oedema in Rats

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### Abstract

**Introduction:** The anti-inflammatory activity of aqueous extract of *Aegle marmelos* (bael) root (50 and 100 mg/kg p.o) has been evaluated in carrageenan-induced paw oedema in rats. The extract has reduced inflammation as evidenced by decreased antero-posterior diameter of paw oedema in rats.

**Method:** To demonstrate this effect, rats were divided in 4 groups of six animals each. The animals were pretreated with drugs orally 1 hr before the experiment as follows: Group I served as control that received normal saline, Group II and Group III were given aqueous extract of *Aegle marmelos* root at a dose of 50 and 100mg/kg body weight respectively. Group IV were given indomethacin at a dose of 10 mg/kg body weight orally.

**Result:** Administration of aqueous extract of *Aegle marmelos* root at a dose of 50 mg/kg body weight orally produced significant ( $P<0.05$ ) anti-inflammatory effect, where the percentage inhibition of oedema formation was 16.37%. Following administration of aqueous extract of *Aegle marmelos* root at a dose of 100 mg/kg body weight and indomethacin the anti-inflammatory effect was highly significant ( $P<0.001$ ) and the percentage inhibition of oedema formation was 39.39% and 46% respectively. Hence bael showed 38.68% and 85.63% anti-inflammatory activity as that of standard indomethacin. The results demonstrate the anti-inflammatory properties of extract and the effects were compared with indomethacin, a standard non-steroidal anti-inflammatory drug.

**Conclusion:** From the results in this study it can be concluded that *Aegle marmelos* root extract exhibits significant anti-inflammatory effect but it is less efficacious than that of indomethacin.

**Key words:** Acute inflammation, Carrageenan, Paw oedema, Indomethacin.

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### Introduction:

Inflammation is defined as local response of living mammalian tissue to injury due to any agent. Inflammation manifests usually in form of painful swelling associated with some changes in skin covering the site.<sup>1</sup> Inflammation can be classified as either acute or chronic. Acute inflammation is the initial response of the body to harmful stimuli and is achieved by the increased movement of plasma and leukocytes from the blood into the injured tissues. A cascade of biochemical events propagates and matures the inflammatory response, involving the local vascular system, the immune system, and various cells within the injured tissue. Prolonged inflammation, known as chronic inflammation, leads to a progressive shift in



the type of cells which are present at the site of inflammation and is characterized by simultaneous destruction and healing of the tissue from the inflammatory process.<sup>2</sup>

In recent years, there is growing realization that apart from being safer, economical and easily available, herbs, phytochemicals and herbal products can influence the course of inflammatory diseases and may provides an amalgamation of nutritional substances, which help in restoring and maintaining wear and tear of tissues. Therefore, it would be rational to scientifically evaluate the traditional medicines used for their potential use in inflammatory diseases.

*Aegle marmelos* (bael) is an Indian plant, which has enormous therapeutic value in traditional systems of medicine. Bael belongs to the family Rutaceae. Bael is a medium to large sized deciduous glabrous, armed tree with axillary and 2.5 cm long alternate trifoliolate leaves, short flowers and globular fruits. Bael plant is available in India, Bangladesh, Burma and Sri Lanka. Its distribution is mainly within the sub-Himalayan forests, in dry hilly places ascending to 4,000 feet. It is called "Shivadume", the tree of Shiva. Since ancient time, its leaves are offered to Shiva and Parvathi. *A. marmelos* has an important place in indigenous systems of medicine.

The crude extracts of bael have shown various activities including antidiabetic, antioxidant<sup>3</sup>, anti-inflammatory, analgesic<sup>4</sup>, antiulcer<sup>5</sup>, antimicrobial<sup>6</sup>, anti-hyperlipidaemic<sup>7</sup>, anticancer<sup>8</sup>, antiviral<sup>9</sup>, radioprotective<sup>10</sup> and antispermatogenic properties<sup>11</sup>.

Previous studies showed that methanol extract of *Aegle marmelos* leaves had significant anti-inflammatory activity at a dose of 100 mg/kg.<sup>4</sup> However, there is very little studies on aqueous extract of root and its evaluation in different anti-inflammatory models. So, here is an attempt to evaluate the anti-inflammatory activity of aqueous extract of bael root bark in Long Evan Norwegian rats on acute inflammatory animal models.

#### Methods:

The plant material i.e. roots of *Aegle marmelos* were collected from Botanical garden, Mirpur, Dhaka. The plant was authenticated by National Herbarium, Dhaka (access no. 36528). The root of *Aegle marmelos* was cut into pieces, shade-dried and grounded to coarse powder. Aqueous extract was prepared in distilled water in the ratio of 1:16, soaked overnight and boiled next day until the volume reduced to 1/4<sup>th</sup>, cooled and drained.<sup>12</sup>

Twenty four Long Evan Norwegian rats of either sex, weighing between 150-200g were kept under standard conditions of light and temperature, fed with animal pellets and allowed to drink water *ad libitum*.

In this method, rats were divided in 4 groups of six animals each. The animals were pretreated with drugs orally 1 hr before the experiment as follows: Group I served as control that received normal saline, Group II and Group III were given aqueous extract of *Aegle marmelos* root at a dose of 50 ml and 100 mg/kg body weight respectively. Group IV were given indomethacin at a dose of 10 mg/kg body weight orally. 0.1 ml of 1% carrageenan was injected aseptically into the subplantar surface of right hind paw of each rat. Progress of the local inflammatory exudative lesion was assessed by measuring the maximum linear cross section of the joint at '0' hour and at the end of '3' hours. The measurements were taken as accurately as possible by slide calipers. The difference between the zero and 3 hours gives the actual edema. Percentage inhibition of oedema formation was taken as an index of acute anti-inflammatory activity.<sup>13,14</sup>

It was calculated by-

The percent inhibition of oedema =  $100 \times (1 - V_t / V_c)$

Where,

$V_c$  = mean paw oedema diameter in the control group.

$V_t$  = mean paw oedema diameter in the drug treated group.

All the results have been expressed as mean plus/minus standard error of mean (mean  $\pm$  SEM). Significance of difference between groups were assessed by using student's 't' test with  $P < 0.05$  considered as being significant.

#### Results:

The mean initial anteroposterior diameter of rat's paw of control, bael extract 50 mg/kg, bael extract 100 mg/kg and indomethacin 10 mg/kg group were  $3.47 \pm 0.11$  mm,  $3.01 \pm 0.04$  mm,  $3.18 \pm 0.08$  mm and  $3.10 \pm 0.11$  mm respectively. The increment of anteroposterior diameter of rat's paw of control, bael root extract 50 mg/kg, bael root extract 100 mg/kg and indomethacin 10 mg/kg group were  $3.91 \pm 0.14$  mm,  $3.27 \pm 0.12$  mm,  $2.37 \pm 0.15$  mm and  $2.11 \pm 0.16$  mm respectively. The percentage inhibition of paw oedema after 3 hours in case of bael root extract 50 mg/kg, bael root extract 100 mg/kg and indomethacin 10 mg/kg group were 16.37%, 39.39% and 46% respectively. The reduction was statistically significant in each case ( $p < 0.001$ ).

**Table - I**

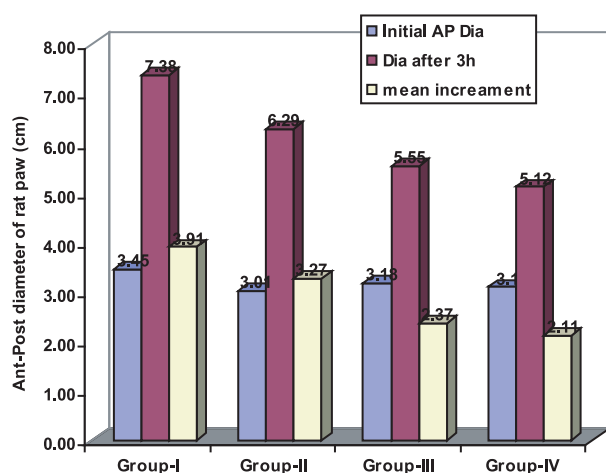
*Effects of Aegle marmelos root extract, Indomethacin on carrageenan induced rat paw edema after 3 hours of carrageenan injection*

Group	Number of rats (n)	Initial anteroposterior diameter (mm) (mean $\pm$ SEM)	Anteroposterior diameter (mm) after 3 hours of carrageenan $\pm$ injection (mean $\pm$ SEM)	Increase in anteroposterior diameter (mm) (mean $\pm$ SEM)	Inhibition of edema formation %
Group-I	6	3.47 $\pm$ 0.11	7.38 $\pm$ 0.22	3.91 $\pm$ 0.14	
Group-II	6	3.01 $\pm$ 0.04	6.29 $\pm$ 0.09	3.27 $\pm$ 0.12*	16.37%
Group-III	6	3.18 $\pm$ 0.08	5.55 $\pm$ 0.18	2.37 $\pm$ 0.15**	39.39%
Group-IV	6	3.10 $\pm$ 0.11	5.12 $\pm$ 0.11	2.11 $\pm$ 0.16**	46%

I vs II, I vs. III, I vs. IV

\* P<0.05 in a test of significance difference from control.

\*\* P<0.001 in a test of significance difference from control.



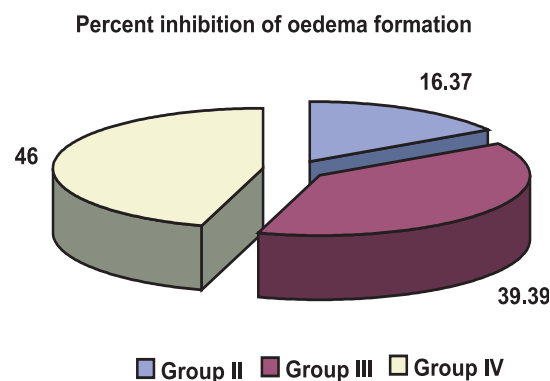
**Fig-1:** Bar diagram showing initial, after 3h of carrageenan inj and increment of ant-post diameter of rat paw

Group-I: 0.6 ml normal saline orally and served as control.  
 Group-II: Bael root extract 50 mg/kg body weight orally.  
 Group-III: Bael root extract 100 mg/kg body weight orally.  
 Group-IV: Indomethacin 10 mg/kg body weight orally.

### Discussion:

The present study has been undertaken to demonstrate the anti-inflammatory effect of bael root extract and to compare the anti-inflammatory effect of bael root with that of indomethacin.

Administration of aqueous extract of *Aegle marmelos* root at a dose of 50 mg/kg body weight orally produced significant (P<0.05) anti-inflammatory effect, where the percentage inhibition of oedema formation was 16.37%. Following administration of aqueous extract of *Aegle marmelos* root at a dose of 100 mg/kg body weight and



**Fig-2:** Pie chart showing percentage inhibition of oedema formation of different group in comparison to control.

Group-II: Bael root extract 50mg/kg body weight orally.  
 Group-III: Bael root extract 100mg/kg body weight orally.  
 Group-IV: Indomethacin 10mg/kg body weight orally.

indomethacin the anti-inflammatory effect was highly significant (P<0.001) and the percentage inhibition of oedema formation was 39.39% and 46% respectively. Hence bael showed 38.68% and 85.63% anti-inflammatory activity as that of standard indomethacin. These results are correlated with that of Benni et al<sup>15</sup>. The mechanism of the acute anti-inflammatory activity might be due to the inhibition of release of mediators like histamine, serotonin and prostaglandins. This activity probably will be due to the chemical constituents like marmin, lupeol etc.

Bael is one of the most frequently used drug in the traditional and folklore systems of medicine. The decoction of the Bael roots, root bark and stem bark are used to cure palpitations, abdominal pain, fever, urinary troubles, hypochondriasis and melancholia.<sup>16</sup> Preliminary phytochemical screening of aqueous extract of *Aegle marmelos* root revealed the presence of alkaloids and glycosides. Studies have shown the evidence of the presence of various chemical constituents in the Bael root. Coumarins like marmin, marmesinin, umbelliferone, skimmianine alkaloid and triterpenes like b-sitosterol and lupeol were identified.<sup>17</sup> Marmin, a coumarin isolated from the roots of Bael (1g/kg p.o.) showed anti-inflammatory effect against carrageenan induced inflammation in rats.<sup>18</sup> Marmin, marmesinin, umbelliferone and skimmianine are identified from the bark and roots which contribute to the anti-inflammatory property of Bael.<sup>19</sup> Lupeol, a pentacyclic triterpenes showed reduction in paw swelling by 39% compared to 35% by indomethacin.<sup>20</sup>

From the results in this study it can be concluded that *Aegle marmelos* root extract exhibits significant anti-inflammatory effect but it is less efficacious than that of indomethacin. Further study may be done to find out the exact anti-inflammatory mechanism of action of *Aegle marmelos* root.

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## **Pattern of Psychiatric Morbidity among Children Attended at Psychiatric Outpatient Department in A Teaching Hospital**

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### **Abstract**

**Background:** Child mental health conditions are often unrecognized and negligible by parents and by society. This cross-sectional study are made to find out the pattern of psychiatric morbidity among children and the parental view about the illness.

**Method:** This is a cross-sectional study where fifty-three children are taken as samples who are clinically diagnosed according to ICD-10(International Classification of Disease) as the cases of psychiatric problems having them within the study period. This study was done in psychiatric outpatient department of Green Life Medical College of Dhaka city within duration of four years.

**Result:** The children came from Dhaka city as well as from different districts of Bangladesh. Study result shows majority of children from different ages are suffering from emotional and behavioral disorders and least are suffering from developmental disorder. Among them girls are suffered more than boys.

**Conclusion:** This study reflects that children are suffering from emotional, behavioral and developmental psychiatric morbidity which demands special attention from the concern authority to strengthen child mental health services in teaching hospital.

**Keywords:** Psychiatric morbidity, Children, Developmental disorder, Emotional and Behavioral disorders.

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### **Introduction:**

Psychiatric disorders have a significantly adverse impact on children and adolescent, as well as their parents and families particularly in relation to quality of life. Accurate estimates of the prevalence for these age groups are essential for setting up adequate services and diminish the consequences of mental disorders on later development and functioning in adulthood.<sup>1</sup> Several epidemiological studies have confirmed high rates of psychiatric comorbidity in children and adolescent .In particular psychiatric co-morbidity has been detected in children with

substance abuse, conduct disorder, oppositional defiant disorder, anxiety attention deficit hyperactivity disorders.<sup>2</sup> We know health is a complete well being of an individual. Like adult health, children also need a comprehensive health care of both mental and physical aspects. Because being a human they have psychological problem too like adult population, though they may not express their emotions properly. So, it is not easy to assess a child or adolescent by the parent or the society or even others too. Usually children are unable to recognize or realize themselves having problems. They may not share the emotional disturbances with others because they do not know the nature of it. As a result they suffer un-noticed and ultimately changes occur in behavior. So it needs observation, patience and experience to identify the problems. Thus during an assessment we need to engage the family and lay the foundations for treatments. The objective of this study is to find out the pattern of psychiatric morbidity among children coming in psychiatric outpatient department of a private medical college in Dhaka city.

### **Methods:**

This is a cross-sectional study. Sample is taken from March 2012 to July 2016. All consecutive cases who met the inclusion criterion has taken in the study. The inclusion

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criterion is the children under 18 years of age who attended in psychiatric out-patient department of Green Life Medical College. During this time period 53 clinically diagnosed cases are identified as having child psychiatric disorders according to ICD-10(International Classification of Disease). They come by themselves, by parents, friends, relatives and from referral by doctors and specialists of different disciplines.

### Results:

In the present study table-1 shows majority children and adolescents were between 13 to 18 years of age (69.81%), mostly are girls (54.72%), unmarried (94.33%), students (90.56%), commonly of secondary class between VI to X (41.50%), Muslims (98.11%) and came from urban area (81.13%).

**Table-I**

*Socio-demographic profile of the children attended into the psychiatric outpatient department of Green Life Medical College (total no=53)*

(1) Age is years	Girls	Boys	Total (%)
1 to 6 years	1	1	3.77%
7 to 12 years	6	8	26.41%
13 to 18 years	22	15	69.81%
Total =53	29 (54.72%)	24 (45.28%)	
(2) Sex	Girls(55%)	Boys(45%)	
(3) Marital Status	Girls(29)	Boys(24)	
Unmarried	27	23	94.33%
Married	1	1	3.77%
Divorce	1	0	1.88%
(4) Habitat	Girls(29)	Boys(24)	
Urban	27	16	81.13%
Rural	02	8	18.86%
(5) Educational Level	Girls(29)	Boys(24)	
Illiterate	1	1	3.77%
Primary (Class 1 to V)	6	8	26.41%
Secondary (Class VI to X)	14	8	41.50%
SSC	1	2	5.66%
Higher Secondary (Class XI to XII)	3	3	11.32%
HSC	4	2	11.32%
(6) Occupation	Girls(29)	Boys(24)	
Unemployed	0	2	3.77%
Employed	0	2	3.77%
House Wife	1	0	1.88%
Student	28	20	90.56%
(7) Religion	Girls(29)	Boys(24)	
Muslim	29	23	98.11%
Hindu	0	1	1.88%

Table-II shows absent of family history (58.49%) and past

history (75.47%) of mental illness.

**Table-II**

*History of Mental Illness (total no=53)*

(1) Family History	Girls(29)	Boys(24)	Total(%)
Present	13	8	39.62%
Absent	16	15	58.49%
Not known	0		1.88%
(2)Past History	Girls(29)	Boys(24)	Total(%)
Absent	24	16	75.47%
Present	5	8	24.52%

Above table shows majority of children are free of family and past history of mental illness.

Table-III shows 71.69% has no co morbidity of physical illness.

**Table-III**

*Co-morbidity of any physical illness (total no=53)*

Physical illness	Girls(29)	Boys(24)	Total(%)
Present	7	8	28.30%
Absent	22	16	71.69%

Above table shows majority (71.69%) children are not physically ill.

Table-IV shows majority of patients are referred by specialist (28.30%) of different faculties.

**Table-IV**

*Pattern of Referral (total no=53)*

Referred by	Girls(29)	Boys(24)	Total(%)
Self	8	4	22.64%
Parents	6	2	15.09%
Friends	1	4	9.43%
Relatives	3	6	16.98%
Doctor	4	0	7.54%
Specialist	7	8	28.30%

Above table shows majority children are referred by specialists of different faculties.

Table-V shows management has done by drugs (39.62%) and parental counseling (26.41%) majority of cases.

**Table-V**  
*Types of Management (total no=53)*

Treatment	Girls (29)	Boys (24)	Total (%)
Drugs only	12	9	39.62%
Psychotherapy only	6	5	20.75%
Both Drugs + Psychotherapy	3	2	9.43%
Parental counseling	8	6	26.41%
Observation & investigation	0	2	3.77%

Above table shows most of children are treated by drugs, some are by parental counseling and few are kept under supervision by parent.

Table-VI shows patient mostly (77.35%) come from Dhaka district.

**Table-VI**  
*Children of Different District (total no=53)*

District Level	Girls (29)	Boys (24)	Total(%)
Dhaka	26	15	77.35%
Chittagong	1	0	1.88%
Gazipur/Tongi	0	2	3.77%
Gopalganj	0	1	1.88%
Narsingdhi	0	1	1.88%
Patuakhali/ Borguna	0	2	3.77%
Bhola	1	0	1.88%
Noyakhali/Lakhipur	0	2	3.77%
Doha	0	1	1.88%
USA	1	0	1.88%

Above table shows maximum children are from Dhaka city.

Table-VII shows patient commonly referred from pediatrics (26.66%) outpatient department.

**Table-VII**  
*Patient referred by different specialist (no=15)*

Disciplines are	Girls(7)	Boys(8)	Total(28.30%)
Medicine	2	1	20%
Gynecology	1	0	6.66%
ENT	1	2	20%
Orthopedic	0	1	6.66%
Neurology	0	1	6.66%
Pediatrics	2	2	26.66%
Pathology	0	1	6.66%
Microbiology	1	0	6.66%

Above table shows mostly children are referred from pediatric department.

Table-VIII shows majority suffers from emotional disorders (66.03%), some are behavioral (9.43%) and developmental (24.52%) disorders.

**Table-VIII**  
*Diagnosis (Total no=53)*

Disorders	Girls (29)	Boys (24)	Total (%)
1.Emotional Disorder	21	14	66.03%
Mood disorder	7	2	16.98%
Depressive disorder	3	2	9.43%
Anxiety disorder	3	5	15.09%
Conversion disorder	4	1	9.43%
Phobic disorder	1	1	3.77%
Obsessive-Compulsive disorder	3	3	11.32%
2.Behavioral disorder	1	4	9.43%
Conduct disorder	1	3	7.54%
Attention deficit hyperactivity disorder	0	1	1.88%
3.Developmental disorder	7	6	24.52%
Autistic disorder	0	1	1.88%
Mental retardation	1	1	3.77%
4.Nocturnal enuresis	0	1	1.88%
5.Schizophrenia	1	1	3.77%
6.Trichotillomania	1	0	1.88%
7.Impulse control disorder	2	0	3.77%
8.Substance abuse disorder	2	2	7.54%

Above table shows majority children are suffered from emotional disorders.

### Discussion:

The sample were 53 three diagnosed cases of psychiatric morbidity. Among them 29 (54.72%) are girls and 24 (45.28%) are boys. The children were grouped into three different age's level. Firstly they grouped as 1 to 6 years, secondly 7 to 12 years and thirdly 13 to 18 years. In Bangladesh up to 18 years of age declared as child. In this study finding, the lowest age limit was a girl of two and a half years of age and highest were 18 years. Maximum problems were focused between adolescent (69.81%) that was age of 13 to 18 years and minimum (3.77%) was between 1 to 6 years. Adolescence is a period of middle between child and adult ages. It is a crisis time period for children.<sup>3</sup> Because within this period they have changes both physically and psychologically. And this normal

natural human physiology of them is ignored by guardian very often. A study done in children with neoplasm to find out psychiatric co-morbidity where majority were boys and within 10 years of age.<sup>4</sup> This was true as because of childhood neoplasm. But in present study majority were adolescent and girls as because of two girl's school situated nearby to study place. So, regarding sex mostly children were girls (55%) and boys (45%). Whereas other study found more common in boys.<sup>4,5</sup> Majority were Muslims (98.11%) children and only a boy found as Hindu. It is also a fact in Bangladesh. Regarding marital status, mostly children were unmarried (94.33%). It is also true that child age is not accepted for marry. It is the time for proper schooling. In present study found children among them a 18 years boy was married and a 16 years girl was divorced, because they lived in rural areas and happened it by their family and cultural issue. Regarding habitat, maximum children came from urban area (81.13%). It correlated with other study.<sup>4</sup> This was also perfect as study place was in Dhaka city. So mostly children came from nearby places. Other study also found more children from rural area too.<sup>5</sup> Regarding education, mostly (41.50%) children were from classes VI to X level. This was the teen ages. They faced problems of both emotional and behavioral as secondary physical and psychological characteristics were started to changes at this time period of life. They need to have warm support from home and school too. Regarding history of mental illness, majority (58.49%) have no positive family history or even any previous history (75.47%) of mental illness. Majority (90.56%) of the respondent were students. As this was the appropriate time for school education. Besides education no job has internationally accepted to children for work. But present study found a girl as a house wife and a married boy as a shopkeeper and two children were as the preschool age. This was also true in our cultural context as mostly our country has rural areas where children used to work for their family need. Regarding co-morbidity with other physical illness, majority (71.69%) had no other concurrent illness. Only few (28.30%) were referred by specialists of different disciplines. It was also true because parents usually thoughts that problems might be physical so they used to go other specialist at first to treat it. After then the specialist done investigations and took a good care and send them to psychiatric outpatient department for better management. Usually medicine, pediatric, otolaryngology, gynecology departments send the appropriate referral to psychiatric out-patient department. Common complaints

were unexplained headache, urinary tract infection, fever, learning disability, etc. Regarding management majority were treated by drugs (39.62%) some are given to psychotherapy (20.75%) where behavior therapy and counseling done, few and in some cases to educate the parents (26.41%) about parenting of the child, how and what to do with them to resolve their problems and observation for further evaluation. Regarding diagnosis, majority of children were having emotional (66.03%) and behavioral disorders (9.43%) of different age's level. Other study also found emotional disorder and behavioral disorders commonly.<sup>4,6</sup> Among the findings of the present study common emotional disorders were mood disorders (16.98%), depressive disorder (9.43%), anxiety disorders (15.09%), conversion disorder (9.43%), phobia (3.77%) obsessive-compulsive disorder (11.32%) which were more or less frequent in other studies too.<sup>4,5,6</sup> Developmental disorders (24.52%) like autistic disorder (1.88%), mental retardation (3.77%), nocturnal enuresis (1.88%), schizophrenia (3.77%), trichotillomania (1.88%), impulse control disorder (3.77%), substance abuse disorder (7.54%) were the findings of present study too. These findings were very common with other study.<sup>2,4,6,7</sup> Behavioral disorders like conduct disorder (7.54%) and attention deficit hyperactivity disorder (1.88%) were found in the present study. Other studies also found these common disorders too.<sup>2,4,6,7,8,9,10</sup> Drug addiction is now a days alarming as adolescent are abusing drugs sometimes by their elder peer pressure. Social media use also play a role for misguiding them in their daily habits according to their parental view. So, further evaluation and assessment should take for misuse of internet in future study.

### Conclusion:

This is a study on children in a private medical college to find out the actual problems of children's mentality. This study tried to focus about their emotional and behavioral aspects which views with their family members. As children are the future of the world they need to care and share in all aspects from home, school and society for betterment of their personal, social and environmental life.

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# **Immunization with Tetanus Toxoid Vaccine among Laboratory Technicians of Dhaka**

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## **Abstract**

**Background:** Tetanus is a recognized, infectious, occupational hazard for health care workers exposed to contaminated instrument or soil. Exposure to this bacterium occurs typically from needle stick injuries or contact of soil/dust as soil is the reservoir of *Clostridium tetani*. This risk is greater in developing countries due to abundantly presence of causative organism and poor infection control activities. Tetanus Toxoid vaccination has been successfully adopted by, and resulted in significant decline in the infection among health care workers in developed countries. In resource limited countries, however, health care workers are not systematically vaccinated.

**Objective:** To investigate the knowledge of Tetanus infection, uptake and status of vaccination and barriers to Tetanus Toxoid vaccination among health care workers of Dhaka.

**Methods:** A cross sectional, descriptive study was conducted during February to May 2014 among 51 laboratory technicians work at different diagnostic centres and hospitals of Dhaka city using a pre-tested, semi structured questionnaire. Purposive sampling technique was applied. A recall period of four months was allowed for information on any injury from the respondents. Data were analyzed using SPSS version 20.

**Results:** Over 70% of respondents perceived themselves to be at risk of contracting Tetanus infection. Vaccination, as a measure of prevention was mentioned by 76% of laboratory technicians. Accidental needle stick injury was reported by 59% laboratory technicians respectively. Thirty two percent of the laboratory technicians had taken Tetanus Toxoid (at least one dose). None of the respondents however, had done antibody test. Major barriers to vaccination were: false perception on cost of the vaccine and not convinced of vaccine efficacy and reluctance.

**Conclusion:** A high proportion of the respondents perceived themselves to be at risk of Tetanus and reported needle stick and other injuries. The uptake of Tetanus Toxoid vaccination was much lower. It remains a challenge for the health care workers (high risk group) to have access to this disease preventing, life preserving measure.

**Key words:** Tetanus, health care worker, occupational hazard, Tetanus Toxoid vaccine.

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## **Introduction:**

Tetanus is a recognized, infectious, occupational hazard for health care workers exposed to soil and contaminated instruments.<sup>1-4</sup> The health care worker can become infected and be at the risk of developing potentially life threatening sequela i.e painful paroxysmal muscular rigidity and death. In 2014, the proportion of American adults reporting having received any tetanus toxoid-containing vaccination during the past 10 years was 62.2% overall for adults aged  $\geq 19$  years, 62.6% for adults aged 19–49 years, 64.7% for adults aged 50–64 years, and 57.7% for adults aged  $\geq 65$  years.<sup>5-7</sup>

Health workers in developing countries are stated to be at an even greater risk of acquiring this infection because of the high prevalence of this pathogen in many poorer regions

of the world.<sup>8,9</sup> Poor infection control activities in our region further augment the risk of transmission.<sup>10,11</sup>

Among the health care workers, surgeons, nurses and laboratory technicians are at higher risk.<sup>12</sup> Laboratory workers are particularly liable as they are frequent handlers of needles, sharp surgical instruments and other articles contaminated with infected tissues.<sup>10,11</sup> Laboratory technicians report a higher number of significant exposures to microbial infection than any other group, followed by doctors. Together, they account for 78 percent of all reported incidents.<sup>13</sup> Health care worker's exposure to this bacteria may be through parenteral or horizontal route. Parenteral transmission typically occurs from needle stick and sharp cutting instruments injuries. Horizontal transmission can occur when the non-intact skin come in contact with *Cl. tetani* infectious foecal matter and body fluids.<sup>14</sup>

The advent of Tetanus Toxoid vaccine is a major advance in preserving the health and lives of healthcare workers.<sup>4</sup> In addition to strict adherence to routine safety measures, health authorities recommend that all health care workers be vaccinated at the start of their career.<sup>10,12,15,16</sup> This has been successfully adopted by developed countries and resulted in significant decline in Tetanus infection among this high risk group.<sup>4</sup> In resource limited countries, health care workers are not systematically vaccinated against this infection.<sup>10,11,15</sup>

Health care workers are a vital resource of a country's health industry and Tetanus is a dangerous occupational hazard for them. The acceptance of vaccination by them is an essential issue for diagnostic complexes and hospitals.<sup>17</sup>

In Bangladesh, the risk of and preventive measures against Tetanus among this high risk group has not been adequately explored. This study was conducted to investigate the uptake of and barriers to Tetanus Toxoid vaccine among and laboratory technicians from different diagnostic centres and hospitals in Dhaka City.

#### Methods:

This cross sectional, descriptive study was conducted during the period of February to May, 2014 among laboratory workers from different diagnostic centres and hospitals in Dhaka City. Purposive sampling technique was applied. A total of 51 laboratory technicians from all different departments were interviewed using a pre-tested, semi-structured questionnaire. The questionnaire consisted of a socio-demographic and practice section.

Data were collected by face to face interview. After collection, the data were checked, verified, edited and analyzed using the Statistical Package for Social Sciences (SPSS) version 20. Preliminary results in the form of frequencies and percentages were first obtained. Chi-square test was used to determine statistical association.

#### Ethical approach:

The purpose of the study was explained to the respondents in a rational manner. It was worth to bring about the valid information from the respondents. After explaining the rationale to the laboratory technicians, those who volunteered to participate, were included as sample.

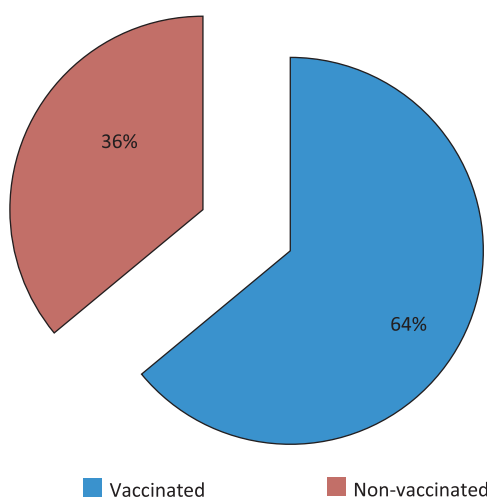
#### Results:

**Table-I**  
*Distribution of Respondents by Socio Demographic Characteristics*

Socio Demographic Characteristics	n= 51	
	Number	Percentage
<b>A. Age in years</b>		
< 25	2	3.92
25-30	29	56.86
>31	20	39.21
Mean ± SD	32.44 ± 4.6 years	
<b>B. Sex</b>		
Male	45	88.23
Female	6	11.76
<b>C. Religion of respondents</b>		
Islam	47	92.15
Hinduism	4	7.84
Christianity	-	-
Buddhism	-	-
<b>D. Marital Status</b>		
Married	41	80.4
Unmarried	10	19.6
Widow	-	-
<b>E. Monthly income</b>		
5,000-8,000	1	2.0
8,001-10,000	15	29.41
10,001-20,000	35	68.62
Did not respond	-	-
Mean ± SD	15717 ± 5300	
<b>F. Duration of Service in months(mean)</b>		
	58.39 ± 43.718	

Socio-demographic characteristics of the respondents are shown in table 1. It can be observed that 45 (92%) out of 51 laboratory technicians were male. The mean age of the respondents was  $32.44 \pm 4.6$  years. Eighty percent of health workers were married. The mean monthly income of laboratory technicians was Tk.  $15717 \pm 5300$ . The duration of service was in the range of 28 to 190 months with a mean of  $58.39 \pm 43.718$  months.

Figure 1 represents the uptake of Tetanus Toxoid vaccination. About two thirds of the laboratory technicians had taken at least one dose of the vaccine. Other variables relating to vaccination are shown in table 2. It can be observed, that among the laboratory technicians, 97 percent (n=31) had completed the dose schedule, i.e. five doses. Fifty five percent (n=18) of the technicians had taken booster doses. Antigen test before vaccination was reported by a considerably higher percentage of the laboratory technicians (n=32, 97%).



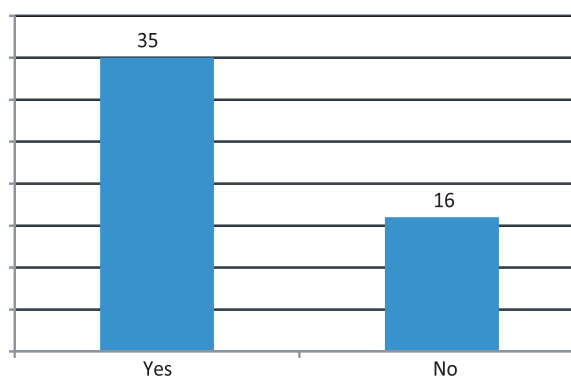
**Fig.-1:** Status of vaccination (n= 51)

It can also be observed from table 2, that over half of the laboratory technicians (n=17, 52%) could avail the vaccines from EPI headquarter or other health care facilities at free of cost or with the coat of their employer. The rest of the providers bear the full cost of the vaccines themselves. Less than half of the laboratory technicians (n= 15, 45%) were reportedly motivated by themselves, 39 percent (n=13) by the physicians and 12.1 percent by the family members to be immunized.

**Table-II**

*Distribution of Respondents by Variables Related to Vaccination*

Characteristics	Lab Technicians n= 33	
	Number	Percentage
Schedule of Tetanus Toxoid Vaccination		
Completed	32	97.0
Not completed	-	-
In process	1	3.0
<b>Booster Dose taken</b>	18	54.5
TIG taken before vaccination	32	97.0
Cost of Vaccination		
EPI headquarter/Other health facilities	17	51.5
Full cost borne by health provider	16	48.5
Motivated for vaccination by		
Doctor	13	39.4
Self	15	45.45
Colleague / Higher authority	1	3.03
Family members	4	12.1



**Fig.-2:** Injuries reported by respondents in past three months (n = 51)

Among the 51 technicians, 69 percent (n= 35) reported an injury during last three months. Most of the respondents had injuries consisting of needle prick and sharp-cut.

**Table-III**  
*Reasons for not taking vaccine*

Barriers	Lab Techniciann= 18	
	Number	Percentage
Perception that the Vaccine costs high	9	50.0
Not convinced of vaccine efficacy	4	22.2
Reluctance	8	44.4
Remained occupied	-	-
Not aware of consequences	-	-
Fear of needles	-	-
Others	-	-

The barriers to vaccination, as cited by the respondents are shown in table 3. The reasons were, wrong perception about the cost of vaccine (n=9, 50%), reluctance (n=8, 44%), and not convinced of vaccine efficacy (n=4, 22%).

#### Discussion:

Health care workers are a vital resource in the health care system of a country. The basic measures for protecting the health care workers should be viewed as essential but the health needs of this subset of population is largely ignored in our country. In this study, 71 percent of laboratory technicians perceived themselves to be at risk of contracting Tetanus. A study conducted on 106 health worker in Saudi Arabia showed that 99 percent of the nurses were aware of this occupational hazard.<sup>18</sup> Another study conducted by Talan DA showed that 93 percent of health care workers (this includes nurses, laboratory technicians as well as sanitary workers) knew that they were at increased risk due to their occupation.<sup>19</sup> Compared to these findings, a lower percentage of respondents (50%) in the present study had this perception. Knowledge of selected variables related to acquiring and preventing the infection by the health care workers is presented in this study. It was observed that awareness regarding accidental needle prick injury, handling of body parts, tissues and body fluids were not satisfactory. As for measures of prevention, a sizeable percentage of the respondents (90%) mentioned vaccination through tetanus toxoid. The findings are similar to reports from Saudi Arabia and by Talan DA et al., where vaccination was mentioned by 78 percent of health care workers respectively. Stewart S A and et al report that 50 percent of healthcare providers knew of safe practices for prevention of transmission of tetanus infection in an Australian hospital.<sup>14</sup>

Though a high proportion of the respondents perceived themselves to be at risk, the uptake of vaccine was much lower, only 65 percent. Such practice has also been found at the articles of Alam M.<sup>18</sup> (Vaccination 40 percent) and Talan DA<sup>19</sup> (vaccination 52 percent). In another study, Rubin ME, Sayed HI and Bowman JM reported vaccination to be 75 percent.<sup>20</sup> In this study, the uptake of Tetanus Toxoid vaccine by the laboratory technicians was found to be 33. A plausible reason for this may be that a higher percentage of the technicians could get the vaccine at a free or subsidized rate from the working place. An adequate budget for vaccination by hospitals has been found to be statistically associated with vaccination among student health worker at a hospital in Australia.<sup>14</sup> It is worth mentioning that five doses are recommended for achieving primary immunization which is a relatively expensive process.

Sharp cutting and needle stick injuries, which pose a significant risk, were reported by 69 percent laboratory technicians. This type of injury has also been reported by health care workers in other countries, both developed and developing.<sup>21-24</sup>

Wrong perception about the cost of vaccine and not convinced about vaccine efficacy were the two most commonly cited barriers to vaccination in the study respondents. Studies conducted at different hospitals, support the findings from this study. High cost of vaccine; that was perceived by the respondents has emerged as the most frequently cited reason for non-vaccination.<sup>18,24</sup> Reluctance or ignorance has also been quoted.<sup>18, 19,24</sup>

#### Conclusion and Recommendations:

Vaccination against Tetanus should made be mandatory for all health care workers at the start of their careers and provided free of cost. It remains a challenge for the health care workers (high risk group) to have access to this disease preventing, life preserving measure. This would necessitate a separate budget for the health care worker which can be made effective, only if considered as a priority in the national health policy. Better TT awareness of tetanus prophylaxis recommendations is necessary and tetanus prophylaxis recommendations may be more effective if the health workers are enforced by the institutional regulations. Motivation and awareness sessions during in-service training can be arranged for all the health care workers at regular intervals.

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## *Clostridium Difficile* Infection: Pathogenesis and Management

BEGUM S

### Abstract

*Clostridium difficile* infection (CDI) can trigger various responses, ranging from asymptomatic carriage to fulminant colitis. Hard-to-cure CDI, such as severe CDI, multiple recurrences of CDI, refractory CDI, and hypervirulent strains of *C. difficile*, require new treatments, although antibiotics such as metronidazole and vancomycin are the treatment of choice for initial and first relapsing CDI. Active immunization with *C. difficile* toxins and faecal microbiota transplantation deserve special attention. This review describes these strategies for difficult-to-treat CDI, current knowledge on epidemiology of CDI, faecal microbiota and optimizing immune responses to *C. difficile* toxins. It is unclear whether vaccination will be used for primary or secondary prevention and whether vaccination will prevent or lessen the severity of clinical infection.

**Keywords:** *Clostridium difficile* infection, Fulminant colitis, Faecal microbiota transplantation, *Clostridium difficile* toxins

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### Introduction:

*Clostridium difficile* is an anaerobic, Gram-positive, spore-forming bacillus that is the major cause of diarrhoea and colitis associated with antimicrobial drugs. The infection can trigger various responses, ranging from asymptomatic carriage to fulminant colitis and recurrent *C. difficile*-associated diarrhoea. The reasons for the diversity of clinical features of this disease are not explored clearly. However, it is assumed that host factors are more important than bacterial virulence factors.<sup>1</sup>

*C. difficile* infection results from disruption of the normal bacterial flora of the colon, colonization with *C. difficile*, and the release of toxins that lead to mucosal damage and inflammation. After colonization, the organisms release two protein exotoxins into the lumen of colon: Toxins A and B, which cause diarrhoea and colitis.<sup>2</sup> Toxin A is an enterotoxin that allows Toxin B to enter cells. The binding of the toxins to membrane receptors has pathogenic effects; both Toxins A and B result in mucosal inflammation and cause the secretion of a protein-rich exudate that contains neutrophils and monocytes. In addition, both toxins lead to peeling off of enterocytes and activation of cytokine release from monocytes.<sup>3</sup>

The initial treatment of CDI is well-established and includes withdrawing any precipitating antibiotics when

possible, providing supportive care by administering fluids and electrolytes as required, and using antimicrobial drugs such as metronidazole or vancomycin.<sup>4</sup> Cases of relapsing colitis are treated with either further metronidazole or vancomycin or prolonged vancomycin treatment. After the first post-treatment recurrence, the rate of a second recurrence is as high as 40%.<sup>5</sup>

Several investigators have reported increasing rates and severity of CDI.<sup>6</sup> In addition, the appearance of a hypervirulent strains and treatment failure with current medication was also reported.<sup>7</sup> These reports reinforce the need for methods of improving host factors, such as faecal microbiota transplantation. While *Clostridium difficile* infection (CDI) has come to prominence as major epidemics have occurred in North America and Europe over the recent decade, awareness and surveillance of CDI in Asia have remained poor.<sup>8</sup> Limited studies performed throughout Asia indicate that CDI is also a significant nosocomial pathogen in this region.<sup>9</sup> A lack of regulated antibiotic use in many Asian countries suggests that the prevalence of CDI may be comparatively high.

In India, *C. difficile* was isolated in 38 out of 341 hospitalized patients with acute diarrhoea over 1 year from Calcutta.<sup>10</sup> A hospital in Delhi reported CDI in 26 out of 156 diarrhoeal hospitalized patients, detected by culture and toxin A EIA.<sup>11</sup> The most recent report found a prevalence of non-toxicogenic *C. difficile* of 12.6% among 79 hospitalized patients, five of whom subsequently

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developed diarrhoea with positive culture and toxin assay.<sup>12</sup> The molecular epidemiology of *C. difficile* strains in India is not currently known.<sup>13</sup>

In Bangladesh, in the 1990s, an aetiological study found that 13 out of 814 children admitted to hospital with diarrhoea were infected with *C. difficile* (diagnosed by cell cytotoxin assay). Seven of the cases were concurrently infected with another diarrhoeal agent.<sup>14</sup> Recent reports with substantial data are very few for Bangladesh.

### Pathogenesis:

*C. difficile* colonizes the large intestine and releases two protein exotoxins (TcdA and TcdB) that cause colitis in susceptible persons. Infection is transmitted by spores that are resistant to heat, acid, and antibiotics. The spores are plentiful in health care facilities and are found in low levels in the environment and food supply, allowing for both nosocomial and community transmission.<sup>15</sup> Colonization is prevented by barrier properties of the fecal microbiota; weakening of this resistance by antibiotics is the major risk factor for disease.<sup>16</sup> Advanced age, cytotoxic drugs, and severe underlying diseases also contribute to susceptibility. Symptoms of colitis do not develop in all colonized persons. For example, the majority of infants are colonized with *C. difficile* but remain asymptomatic, possibly owing to the lack of toxin-binding receptors in the infant gut.<sup>17</sup>

Asymptomatic colonization with toxigenic *C. difficile* in infants stimulates a durable immune response that appears to protect against symptomatic infection later in life. For example, high titers of serum IgG antitoxins to TcdA and TcdB are associated with asymptomatic colonization in hospitalized patients exposed to antibiotics.<sup>18</sup>

Lowy et al<sup>19</sup> examined the safety of monoclonal antibodies and their effects on the initial episode of *C. difficile*-associated diarrhoea (CDAD). The combined administration of monoclonal antibodies against toxin A (CDA1) and B (CDB1) significantly reduced the recurrent CDAD.

### Diagnosis:

*C. difficile* infection is currently diagnosed either by enzyme immunoassay for toxins in stool or by DNA-based tests that identify the microbial toxin genes in unformed stool.<sup>20</sup> Stool culture for *C. difficile* requires anaerobic method and is not widely available. Enzyme immunoassay used to be the mainstay of testing for *C. difficile* infection, since it is rapid and easily performed. Recently, many hospital laboratories have adopted DNA-based tests that detect toxigenic strains and provide higher sensitivity and

specificity than enzyme immunoassay.<sup>21</sup> Some DNA-based tests also detect the presence of the BI/NAP1/027 strain, a finding that may influence the choice of therapy, since fidaxomicin is associated with a reduction in the risk of recurrence of non-BI/NAP1/027 strains only, as compared with vancomycin. DNA assays for *C. difficile* infection may appear to show a higher incidence of infection than earlier tests.<sup>22</sup> because the high sensitivity of DNA assays allows for low levels of toxigenic organisms of uncertain clinical significance. The concern that DNA assays can detect clinically insignificant infections is supported by the results of recent studies that suggest that detection of toxigenic *C. difficile* by DNA testing in the absence of free toxin in the stool does not influence clinical outcomes.<sup>23</sup> In the future, highly sensitive quantitative toxin assays may also contribute to diagnostic algorithms.

Conversely, heterogeneous diagnostic tests and lack of clinical suspicion contribute to delayed diagnosis. Sequential testing with the use of PCR and enzyme immunoassay has been advocated.<sup>24</sup> but in clinical practice, in a patient with diarrhea, positive results of either enzyme immunoassay or PCR assay should prompt the treatment.

### Treatment:

#### a. Antimicrobial drugs:

Treatment of a first episode of recurrent infection with a repeat course of either metronidazole or vancomycin for 10 to 14 days is successful in approximately 50% of patients.<sup>25</sup> Second and subsequent recurrences can be difficult to cure, primarily because of the persistence of spores in the bowel or environment and the inability of the patient to mount an effective immune response to *C. difficile* toxins, rather than to antibiotic resistance.<sup>26</sup> Second recurrences can be treated with fidaxomicin (200 mg twice a day for 10 days) or by a vancomycin regimen involving tapered (decreased over time) and pulsed (i.e., every few days) dosing.<sup>27</sup>

Options are limited for patients with severe colitis in whom vancomycin and fidaxomicin are ineffective. Emergency colectomy for fulminant *C. difficile* infection is associated with mortality as high as 80%, although a diverting ileostomy and a colonic lavage with vancomycin may be an effective alternative.<sup>28</sup> Other antibiotics that have activity against *C. difficile* are rifaximin, nitazoxanide, ramoplanin, teicoplanin, and tigecycline. However, because of limited data, high cost, an unfavorable adverse-event profile, and resistance to *C. difficile*, the use of these agents is not recommended except in cases of unacceptable adverse effects associated with standard therapy.<sup>29</sup>

**b. Faecal Microbiota Transplantation (FMT):**

A good number of case series of FMT in CDI have been reported, and many researchers have found a valid rationale for FMT in CDI.<sup>30,31</sup> Antibiotic use disrupts the normal bacterial flora of the colon, and antibiotic damage to the normal microbiota permits invasion by *C. difficile*. In healthy control subjects and initial CDI patients, Bacteroidetes spp. are relatively abundant in the faecal material. However, recurrent CDI patients had a different faecal microbiota.<sup>32</sup> A systemic review of FMT in CDI reported excellent cure rates (92%) and a protective effect against relapsing CDI.<sup>33</sup> Finally, a recent randomized controlled trial showed that FMT was significantly more effective for treating recurrent *C. difficile* infection than was vancomycin.<sup>34</sup> Generally, the donor for FMT is a member of the patient's family. However, donor identification and work-up increases cost, which can delay FMT. Moreover, it is difficult to identify suitable donors for some patients. In the near future, a simplified, standardized product, such as encapsulated FMT oral therapy, will be available.<sup>35</sup>

**Immunization:**

Results of the immunization of animals with toxoids TcdA and TcdB and findings showing the protective effect of naturally acquired serum IgG antitoxins in patients colonized with *C. difficile* suggest the potential for vaccination of humans against *C. difficile* infection.<sup>36</sup> Passive immunization with monoclonal antibodies to *C. difficile* toxins also provides substantial protection from recurrence after acute infection and may be cost-effective in patients who are at high risk for recurrence.<sup>37</sup>

Vaccination for *C. difficile* infection offers the possibility of an effective and relatively inexpensive approach to prevention. Initial studies have shown strong antitoxin responses in healthy volunteers immunized with toxoids of TcdA and TcdB.<sup>38</sup> Clinical use will depend on numerous variables, including safety, efficacy, and cost-effectiveness, as well as improved ability to predict the risk of *C. difficile* infection. In addition, neither vaccination nor the administration of monoclonal antibodies is likely to eliminate colonization, so isolation of patients will still be necessary to prevent transmission.<sup>39</sup>

**Conclusions:**

It can be inferred that antibiotics, particularly metronidazole and vancomycin, are the treatment of choice for the initial therapy and first recurrence for most patients with mild-to-moderate CDI. However, severe CDI, multiple recurrences of CDI, refractory CDI, and hypervirulent strains of *C. difficile*, need new treatment

options. Research on optimizing immune responses and FMT must continue, as these strategies will likely become mainstream treatments for CDI.

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# Evidence Based Practice in Gynae and Obstetrics

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### Abstract

*This is the right of a woman to receive proper care during pregnancy, child birth and after delivery. Despite significant progress in Bangladesh, maternal mortality ratio is still high, 194/100,000 live birth with two women dying every hour due to pregnancy and child birth related complications. We know, there are some relatively inexpensive effective medical and surgical interventions to prevent the maternal death. Evidence based practice is identified as one of the key interventions for reducing maternal mortality and morbidity. The practice of evidence based obstetrics and gynecology means integrating individual clinical expertise with the best available external evidence from systemic research. It improves the skills of health workers through locally adopted guidelines and standards for the management of pregnancy and child birth at different levels of health care systems. Also to maintain standards it requires interdisciplinary collaborations among doctors, midwives, librarians, statisticians and other health professionals. Evidence based practice is also a safeguard for service providers and managers against any medico-legal issues. Evidence based practice should be the base of clinical research which is consistently producing new findings that may contribute to effective and efficient patient care. The finding of such research will not change population outcomes unless health services and health care professionals adopt them in practice.*

**Keywords:** Evidence based practice, Gynae and Obstetrics.

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### Introduction:

Evidence based medicine has been defined by its proponents as the conscientious, explicit and judicious use of current best evidence in making decision about the care of individual patients.<sup>1, 2</sup>

To offer our patients the care most appropriate to their needs is surely the aim of all involved health care.

A variety of problems are caused when clinical practices that are not based on sound scientific evidence find their way into established medical and health care practices. It is acknowledged that removing an enriched practice is much more difficult than introducing new one. Research is needed to evaluate the usefulness of these practices. For example large trials had to be conducted to show that routine episiotomy is not beneficial.<sup>3</sup>

A proficiency in extracting clinical signs and forming clinical judgment for an individual patient can only be acquired through clinical experience and clinical practice.

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It is only the clinical expertise that the best external evidence can then be applied appropriately to an individual patient. Evidence Based Medicine approach to medical decision making is one in which the clinician uses the best evidence available in consultation with the patient to decide which option suits that patient best.<sup>4</sup>

**Evidence based Practice** An approach to health care where health professionals use the best evidence possible i.e. the most appropriate information available to make clinical decision for individual patients.

The practice of evidence based obstetrics and gynecology gives us the tools to direct our own learning throughout our clinical carriers. The foundation of our learning will be the patients in our clinics, our ward rounds and our operating theaters. We can continue our medical education life long in the areas of clinical work that are important to us at that time. Professor Sacket says “these tools of evidence based medicine is as clinically important information in diagnosis, prognosis, therapy and other clinical health care issues, in which we identify the questions, find the available evidence and appraise and apply that evidence.”<sup>2,4</sup>

Evidence based practice follows the following steps:<sup>5,6,7</sup>

- 1) Convert the information into clinical questions from a patient problem.

- 2) search the literature for relevant clinical articles which serves as the best evidence to answer them
- 3) evaluate (critically appraise) that evidence for its validity and its usefulness
- 4) apply the results of these appraisals in our clinical practice

**Strong recommendation:** Obtained from the best evidence about the use of  $Mg_{SO_4}$  is that it is an ideal anticonvulsant, can be used to prevent and control eclamptic fits both in community and institution.<sup>5</sup>  $MgSO_4$  more than halves the risk of eclampsia and probably reduce the risk of maternal death. There is clear evidence in favors of  $MgSO_4$  as it reduces the risk of eclampsia and maternal death.

Active management of third stage compared with expected management is associated with lower incidence of PPH, less blood loss, reduces the risk of blood transfusion.

**Weak recommendation:**

Evidence based practice has identified that there are some clinical practices where the desirable effects probably out weight the undesirable effects but is not confident. Large trials had to be conducted to show that routine episiotomy is not beneficial.<sup>5</sup> Intra umbilical vein oxytocin injection could reduce the incidence of manual removal of placenta but larger trial had to be conducted.<sup>8</sup>

**Assessment of barrier:**

Assessment of barrier is an essential step to guide the selection of the strategy for implementing change. There may be fewer or easier barriers to overcome to change some practices while others may be more complex. For example changing from one type of uterotonic (ergometrine) to another (oxytocin) would be expected to be relatively straightforward if the agent is available. Using oxytocine instead of ergometrine for the management of the third stage of labour would not require changes in daily routine, learning new procedures or cost more.<sup>4</sup> However, the implementation of a program of labour companionship to reduce obstetrics interventions and increased maternal satisfaction with care is likely to be more complex. The facilities may lack sufficient privacy, the staff may not be too keen on having other non professional people around, the labour companions may need training and there may be some costs and other unforeseen barrier.<sup>6</sup> It is important to consciously asses the barriers because the target of the intervention to establish the change will be based on overcoming those particular barriers.

**Evaluation of evidence based practice:**

We need to evaluate our approach at frequent intervals, in order to know how we are doing and where we need to improve. Formal auditing of performance may be needed to show whether EBM approach is improving patient care. An audit program is also proposed as part of the workshop so that the staff can monitor the standards of care themselves.

**Importance of evidence based practice in obs and Gynae:** <sup>5,9</sup>

It promotes the use of evidentiary knowledge in medical decision making and attempts to minimize the use of non evidentiary knowledge. These represents a breakaway from traditional practices whose tools often lie in knowledge regarded as non-evidentiary by EBM. It promotes practices that have better outcomes and are scientifically proven to be effective. The objective of EBM is to keep up-to-date knowledge and change practices that are ineffective or harmful in favor of those that have been demonstrated to be more effective by rigorous research methods—thus promoting patient safety.

There are some evidence based practices which are effective in obs and gynae.<sup>5</sup>

Active management of the third stage of labour on decreasing blood loss after delivery, use of Magnesium Sulphate to control convulsion in eclampsia, Use of simplified partograph to monitor labour, Antibiotics for pre-term pre-labour rupture of membranes prolong pregnancy and reduce maternal and infant infectious morbidity, Corticosteroids prior to pre-term delivery reduce neonatal mortality, respiratory distress syndrome and intraventricular hemorrhage. Antibiotic prophylaxis for caesarean section, Antibiotic for asymptomatic bactera in pregnancy.

**Evidence based practices identified few ineffective practices in obs and gynae.**<sup>5</sup>

As for example, delivery in supine position found to be ineffective, Routine use of episiotomy is not needed, Routine electronic foetal monitoring is not needed in low risk group.

**Conclusion:**

Evidence based Medicine is considered an important advance in improving clinical care. It focuses on promoting the use of evidentiary knowledge in medical decision making. Our patient care should be rooted in the best external evidence. Clinical research is consistently producing new findings that may contribute to effective and efficient patient care. In future all clinical practice will be evidence based practice. EBM is considered an

important advance in improving clinical care. Along with other specialists maternity care standards should be based on available evidence identified through systematic review of the literature. Evidence based health care with its emphasis on the need for searching retrieving summarizing and utilizing the best evidence in decision making has become essential in setting standards.

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# Mother of Two Children with Takayasu's Arteritis - A Case Report

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### Abstract

*Takayasu's Arteritis mostly affects young woman of child bearing age sometimes coinciding with pregnancy. The optimal management for pregnant patients with this disease has not yet been defined. A 30 years old patient with Takayasu's Arteritis treated with methotrexate came to the ward of Obstetrics and Gynaecology for therapeutic termination of pregnancy. The termination of that pregnancy was done with medication. Then she was treated with immunosuppressive drugs for 2 years and her all symptoms were improved and then medication was stopped. After then she delivered two healthy babies 4 years apart by elective caesarian section with co-ordinated support of obstetrician, cardiologist, rheumatologist and anesthesiologist. Perinatal outcome of pregnant patient with Takayasu's Arteritis was satisfactory but required close monitoring of mother and fetus with good co-ordination between obstetrics and cardiology rheumatology and anesthesiology team. The safety of pregnancy and a more favorable outcome may be achieved if there is plan in advance of the pregnancy to assess the extent of the disease and review of the medication.*

**Key word:** Takayasu's arteritis, Aortic arch syndrome, Nonspecific aortoarteritis, Pulse less disease, granulomatous vasculitis.

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### Introduction:

Takayasu's Arteritis also known as 'aortic arch syndrome', 'nonspecific aortoarteritis' and the 'pulse less disease',<sup>1</sup> is a form of large vessel granulomatous vasculitides with massive intimal fibrosis and vascular narrowing affecting often young or middle-aged women. It mainly affects the aorta and its branches as well as the pulmonary arteries. Females are about 8-9 times more likely to be affected than males.<sup>2</sup> It is not uncommon to encounter this disease during pregnancy.

Optimum management for pregnant patients with this disease has not yet been established due to the manifold cardiovascular complications that can occur in the course of the disease. Management of pregnancies in TA patients

is a challenge for the obstetrician, the Rheumatologist and the cardiologist.

### Case presentation:

A patient now aged 30 years was first consulted by gynaecologist in 2006 for therapeutic abortion, referred by rheumatologist as she was under methotrexate therapy for management of Takayasu's Arteritis. In her past history it was revealed that she had been suffering with severe physical illness since her 5 years of age. She had frequent attack of high fever, severe myalgia, occasionally extreme generalized weakness. At her age of 8, she was wrongly diagnosed as Rheumatic fever and treated with long acting penicillin. It was continuing for one year, improvement was unsatisfactory. For these physical sufferings she could not even complete her Secondary School Certificate examination. During that period she was seen by a rheumatologist and got admitted under him in 2006 with complaints of fever severe body ache, red spots of both upper arms and history of bluish coloration of arms nails on cold exposure. On general examination her pulse and blood pressure could not be ascertained on both hands. She was referred for peripheral angiography which revealed total occlusion of left common carotid, left sub-clavian, left axillary artery and right axillary artery.

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She was referred to a vascular surgeon but surgical revascularization could not be done due to unavailability of grafting vessel. Then management with Tab. Methotrexate, Tab. Azathioprine and Tab. Aspirin were started by rheumatologist.

Treatment was continuing and gradually she was improving and became almost symptom free. She got married in 2008. She did not practice any contraceptive method and she became pregnant. She was referred by her physician to gynaecologist for therapeutic termination of pregnancy as she was on cytotoxic therapy. Accordingly we did it by medication. Her immunosuppressive medication was continued till 2010. At times her all symptoms were improved remarkably and subsequently all drugs were stopped. After pre-conceptional checkup and evaluation, permission was given to carry pregnancy. Luckily without any delay she conceived. We had started meticulous supervision and regular consultation with rheumatologist. Including fetal growth and other findings were quite satisfactory. At her 38 completed weeks elective caesarian section was done. She delivered a male baby weighing 2800 gm with satisfactory Apgar score. The patient did well postoperatively. She gave exclusive breast feeding to her baby. She had a follow-up appointment 6 weeks after delivery, at which time she was asymptomatic, her inflammatory markers were normal. She was advised barrier contraceptive method. She kept contact with us regularly.

In 2016 she met gynaecologist with 6 weeks pregnancy again. She was clinically stable whole through pregnancy period as before. She delivered a healthy female baby weighing 2700 gm with good Apgar score by elective cesarean section.

Her both pregnancies were evaluated and managed by routine medication and some investigations including serial ultrasound for growth assessment, umbilical artery Doppler studies and biophysical profile assessment from 24 weeks gestation.

Before surgery our patient was meticulously evaluated by anesthetist and spinal anesthesia was given in both surgeries. Exclusive monitoring and all physiological parameters including proper hydration were maintained per and post operatively.

#### **Discussion:**

Takayasu's Arteritis was first described in 1908 by two Japanese ophthalmologists.<sup>3</sup> Although more common in Oriental woman it is seen worldwide.<sup>4</sup> The causes is unknown but it seems to be related to auto immunity, sex

hormones and genetic (Demonstrated by the predisposition of the Human Leukocyte Antigen-HLA 5W52).<sup>5</sup>

Four types of TA can be identified. Type - I (Disease involving the aortic arch and its branches), Type - II (Lesions restricted descending thoracic aorta and abdominal aorta), Type-III (Patients have characteristics of Type - I and Type - II) and Type-IV (Involvement of the pulmonary artery).<sup>6</sup>

Treatment of TA involves the use of corticosteroids, the first line treatment for inflammatory activity as well as immunosuppressive drug including methotrexate and azathioprine.

Vaginal delivery could be indicated for patients in group I and IIA.<sup>7</sup> In groups IIB, III, one should prefer caesarian section since the increased blood volume and blood pressure observe during uterine contraction as well as increased cardiac output observe during labour may lead to cardiac decompensation<sup>8</sup> although our patients were haemodynamically stable, she underwent caesarian section as we did not have additional supplementary investigation of the abdominal vessels. Regional anesthesia is the method of choice because it allows monitoring brain perfusion through the patient's level of consciousness. In this patient, both surgery done by spinal anesthesia. Proper monitoring and hydration was maintained carefully.

The cause of the disease since to be unaffected or worsened by pregnancy.<sup>9,10,11</sup> However it is yet unclear whether pregnancies affect the individual prognosis. Pregnancy does not interfere on disease progression, although hypertensive complication such as preeclampsia and exacerbation of chronic hypertension fatal complication like IUGR and fetal death have been repeated in 60% to 90% of the cases.<sup>12</sup>

Considering pregnancy in patients with TA as high risk, good prenatal care is essential to prevent pregnancy complications. Good quality of medical care can improve the both maternal and fetal outcome. In this case during antenatal care her BP monitoring cannot be done as her both brachial arteries were occluded. Her evaluation was done by estimation of urinary total protein, S. creatinine, S. uric acid, Doppler flowmetry, biophysical profile and CTG. Low dose aspirin and calcium were prescribed to prevent pre eclampsia.

The puerperium also needs special attention as complication may develop in this period. Pupereal infection may also have higher incidence considering the intake of immunosuppressive therapy by most patients. Post-partum period was uneventful in this patient.

In conclusion perinatal outcome in pregnant patient with TA are satisfactory but require close monitoring of mother and fetus with good coordination between obstetrics and cardiology rheumatology and anesthesiology team. The safety of pregnancy and a more favorable outcome may be achieved if there is plan in advance of the pregnancy to assess the extent of the disease and review of the medication.

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# Cervical Tuberculosis with Uncommon Presentation

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### Abstract

*A 27 years old married woman, mother of two child presented at the outpatient department of International Medical College & Hospital with history of amenorrhoea for 2 years, postcoital bleeding and irregular per vaginal bleeding for 3 months. On examination she was average body built, weight was 47 kg, mildly anaemic, no accessible lymphnode was palpable. Perabdominal examination lower abdomen was soft & nontender, no palpable mass was present. Per speculum examination-cervix was broad & hypertrophied, ulcerative growth was present on both lips of cervix which was friable, bleeds on touch. Bimanual examination-uterus was normal in size, anteverted, mobile, fornices were free. Per rectal examination-rectal mucosa was free. Visual inspection aided with acetic acid(VIA) was positive. Cervical biopsy was taken from VIA positive area. Biopsy also include healthy margin of cervix. Histopathology report of cervical tissue showed areas of caseation necrosis surrounded by focal collection of epithelioid cells, Langhans giant cells and lymphocytes suggestive of tuberculosis. The patient was treated with anti-tubercular drugs and she responded well with the treatment.*

**Keywords:** Cervical tuberculosis, Genital tuberculosis.

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### Introduction:

Female genital tuberculosis is not uncommon in countries where pulmonary tuberculosis is wide spread. But tuberculosis of cervix accounts for 0. 1% to 0. 65% of all cases of tuberculosis and 5-24% of genital tract tuberculosis.<sup>1-7</sup> In 92% of cases, genital tuberculosis is secondary to focus in the lungs, lymph nodes, intestine, urinary tract, bones and joints. Genital organs most frequently affected include fallopian tubes(95-100%), endometrium(50-60%), and ovaries(20-30%). Mostly genital tuberculosis is diagnosed during evaluation of infertility. Major presenting symptoms of genital tuberculosis are infertility (45-55%), pelvic pain(50%), poor general health (25%) and menstrual disturbance

(20%). Female genital tuberculosis is treated with the same combined anti tubercular drugs therapy used in pulmonary & extrapulmonary tuberculosis but the diagnosis is critical. This paper briefly describes the cervical tuberculosis which present as clinical features suggestive of early stage of cervical carcinoma.

### Case presentation:

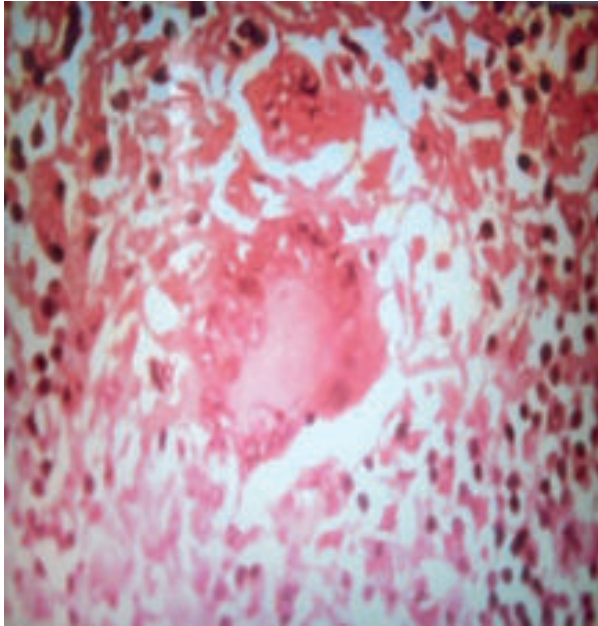
A 27 years old woman, married for 8years, Para: 2, no history of MR or abortion, ALC: 5 years, presented at the outpatient department of International Medical College with history of amenorrhoea for 2 years, postcoital bleeding and irregular per vaginal bleeding for 3 months. She didn't take any contraceptive method. Patient gave no personal or family history of pulmonary tuberculosis. On examination she was anxious but cooperative, average body built, weight was 47 kg, mildly anaemic, no accessible lymphnode was palpable, perabdominal examination-lower abdomen was soft & non-tender, no palpable mass was present . Per speculum examination-cervix was broad & hypertrophied, ulcerative growth was present on both lips of cervix which was friable & bleeds on touch. Bimanual examination uterus was normal in size, anteverted, mobile, fornices were free. Per rectal examination-rectal mucosa was free. Visual inspection aided with acetic acid (VIA) was positive. Cervical biopsy was taken from VIA positive area & healthy margin of cervix. Histopathology report of cervical tissue showed areas of caseation

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necrosis surrounded by focal collection of epithelioid cells, Langhans giant cells and lymphocytes suggestive of tuberculosis. No evidence of active or old pulmonary tuberculosis on chest X-ray. Mantoux test was positive(15mm). Now patient is treated with antitubercular drugs & patient is improving. After one month of onset of treatment during follow up patient had no irregular per vaginal bleeding & postcoital bleeding. Patient completed her antitubercular drugs and repeat VIA was done which was negative.



**Fig.-1:** Histopathological features of tuberculosis



**Fig.-2:** Naked eye view of cervical TB

### Discussion:

Female genital tuberculosis is not uncommon in countries where pulmonary tuberculosis is wide spread. But tuberculosis of cervix accounts for 0.1% to 0.65% of all cases of tuberculosis and 5-24% of genital tract tuberculosis.<sup>1-7,9</sup> Pelvic organs are infected from a primary focus, usually the chest, by haematogenous spread.<sup>2,4,5,10,11,12</sup> The cervix is infected as a part of this process, by lymphatic spread or by direct extension. The vagina and vulva are rarely involved. The primary lesion is often healed by the time of presentation.<sup>5-13</sup> Symptomatic genital TB usually present with abnormal vaginal bleeding, menstrual irregularities, amenorrhoea, abdominal pain and constitutional symptoms.<sup>6,9,10,11</sup> The diagnosis of the cervical and vulvovaginal TB is usually made by histopathological examination of cervical and vulvovaginal biopsy.<sup>3,9,12</sup> Specimen staining of AFB is not found to be very useful in making the diagnosis of genital TB.<sup>14</sup> Tuberculosis is one of the oldest disease known to affect human.<sup>15</sup> Female genital TB is a rare disease in some developed countries but it is a frequent cause of chronic pelvic inflammatory disease (PID) and infertility in other parts of the world.<sup>16</sup> Some authors suggest the existence of primary genital tuberculosis which may spread by venereal transmission. These lesions are extremely rare and usually present as isolated chronic ulcerative lesions of the external genitalia in absence of TB of the upper urogenital system.<sup>17,18,19,20</sup> The presence of extra genital foci of TB, as a rule is rare when genital lesion is discovered. The extent of genital lesion may be minimal or advanced. Minimal genital TB is usually asymptomatic except for sterility. Examination of pelvis may reveal no abnormality. It is uncommon for tuberculosis to involve the vulva and vagina. The gross appearance may be ulcerative with multiple sinuses, it may be hypertrophic with elephantiasis or it may be similar to that of carcinoma. There may be hormone dependence of infection given that 80% of cases occur in the reproductive age. The macroscopic finding of cervical TB was illustrated by this case. There may be papillary or vegetative growth, milliary appearance or ulceration present, thus simulating invasive cervical cancer. Microscopically, there are caseating granulomata in cervical lesion. The differential diagnosis of granulomatous disease of cervix include amoebiasis, schistosomiasis, brucellosis, sarcoidosis and foreign body reaction. Cervical cytology showed inflammatory cells with mild dyskaryosis, therefore, the presence of typical granuloma is sufficient for diagnosis if other causes of cervicitis are excluded or primary focus identified. In the

present case the primary focus is thought to be lung and other causes of the ulcerative cervical lesion e.g. syphilis, malignancy were excluded. Molecular probe may be more sensitive than culture but also have reduced specificity. Khilani and colleagues reported that when the cervical cytologic smear reveals the presence of clusters of epitheloid cells, it may be suggestive of tuberculous lesion of cervix, but it would be diagnosed histopathologically or bacteriologically.<sup>19</sup> Once the diagnosis of genital TB is confirmed, it is important to rule out TB in other parts of the body. A chest radiograph and three early morning sputum or gastric aspirate samples or early morning urine samples for AFB stain and culture and IVU are recommended.<sup>20,21</sup> Daly and Monif reported that 10% of females with genital TB also show evidence of renal TB.<sup>22</sup> Here in this case, cervical infection exists without evidence of the active pulmonary infection which is theoretically primary. After completion of TB treatment endometrial and vaginal sampling should be done for biopsy irrespective of resumption of menstruation. But there is strong possibility of endometrial involvement as the patient suffered from amenorrhoea for last two years. Before the advent of effective chemotherapy, surgery was the mainstay of treatment of genital tract TB and post-operative complication such as bowel fistula (14%) and mortality from primary disease (2.2%) were high. Experts suggest that extra-pulmonary TB may be even easier to treat than pulmonary TB owing to the decreased concentration of organisms in these lesions and increased accessibility of the sites. If surgical intervention is needed, chemotherapy makes it safer, easier and more effective if the regimen contain multiple drugs and taken regularly for a sufficient period of time. In the index case, though standard anti-tubercular regimen was initiated. The major determinant of the outcome of treatment is the patient adherence to the drug regimen. A lesion on the genital tract provides a marker to assess response to therapy. Here in this case only after four weeks of treatment, patient improves clinically. Cervical growth also disappeared except a small area on congestion. The lesion should respond to six months standard anti-tubercular therapy but in the index case the response was dramatic. Histological examination of serial biopsy can confirm therapeutic response, complete hemogram should be done with sputum culture for AFB after six weeks. Radiological follow up should be done by ultrasonogram and MRI in case of amenorrhoea. MRI is better to visualize endometrium, myometrium and junctional zone and any appearance consistent with Asherman's syndrome and lymphadenopathy. Fertility is very poor even after treatment owing to endometrial and tubal involvement at presentation and sub-sequent healing by fibrosis.<sup>10-12</sup> The incidence of TB has increased recently and is partly attributable to HIV pandemic. There should be high index

of suspicion of genital tuberculosis in women with abnormal appearance of cervix, vulva and vagina in where HIV and TB is prevalent.

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# Acute Puerperal Uterine Inversion - A Case Report

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### Abstract

*Uterine inversion is a potentially fatal childbirth complication with a maternal survival rate of about 85%. It occurs when the placenta fails to detach from the uterus as it exists, pulls on the inside surface, and turns the organ inside out. The most common cause is the mismanagement of 3<sup>rd</sup> stage of labour. It is often associated with significant post-partum hemorrhage. In this case a 35 years old multiparous lady came in a private hospital with shock and post-partum hemorrhage, 6 hours following vaginal delivery. The lady was in shock with severe anemia (Hb: 5 gm%). At first she was resuscitated, 4 units of blood were transfused with joined collaboration with anaesthesiologist. Manual reposition of uterus was tried first, but it was not successful, then leparotomy was performed which was managed successfully. The patient had a good recovery and was discharged from the hospital at 7<sup>th</sup> post operative day. However in this case the patient presented late, after home delivery and surgical treatment was required for correction it is essential to keep in mind that every case of PPH and shock should be promptly diagnosed and managed to save the life of the mother.*

**Keywords:** Uterine Inversion, Puerperium

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### Introduction:

Uterine inversion is as an extremely rare but a life-threatening complication in third stage of labour in which the uterus is turned inside out partially or completely. It can be either puerperal (obstetric) or non puerperal (gynecological). Puerperal (obstetric) uterine inversion is a rare but potentially life threatening obstetric emergency. The incidence of uterine inversion varies and ranges from 1:2500<sup>1,2</sup> to 1:20,000.<sup>2,3</sup> Uncommonly it has also been reported at the time of caesarean section. It is an obstetric emergency with significant maternal morbidity and mortality. The typical presentation is that of major obstetric haemorrhage and shock with most patient needing blood transfusion. It is imperative that the condition is recognized quickly and managed promptly and appropriately by a multi-disciplinary team, in order to minimize the risk of maternal morbidity and mortality.

Uterine inversion may be classified in two ways according to anatomical severity and/or timing of the inversion.

Classification of Uterine Inversion according to Severity.<sup>3</sup>

First Degree – There is dimpling of the fundus, which still remains above the level of internal os.

Second degree – The fundus passes through the cervix but lies inside the vagina.

Third degree – The endometrium with or without the attached placenta is visible outside the vulva.

Fourth degree - The vagina is also involved with complete inversion through the vulva.

### Classification According to Timing of the Event<sup>2,3</sup>

The timing of the inversion may be acute (within 24 hours of delivery), subacute (more than 24 hours postpartum)

or it may be chronic (more than 4 weeks postpartum), the prevalence of each class is 83.4%, 2.6% and 13.9% respectively.<sup>4</sup>

A number of predisposing factors have been implicated but often there is no clear cause. In about half of reported cases it appears to occur spontaneously, mostly in young primiparous women.<sup>5</sup> However, factors associated with puerperal uterine inversion are listed in the table below.<sup>6,7</sup>

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**Table-I**  
*Factors associated with puerperal uterine inversion*

Maternal	Uterine structural anomaly, connective tissue disorders (Marfan's Ehler's-Danlos)
Placenta!	Fundal placenta, placenta praevia abnormal placenta] adherence
Umbilical cord	A short umbilical cord
Fetus	Macrosomia
Labour Intraparrum	Precipitate labour, uterine atony
Iatrogenic	Antepartumtocojysjs eg. MgSO-l. poor management of the third stage of labour due to premature cord traction prior to placental separation
Idiopathic	

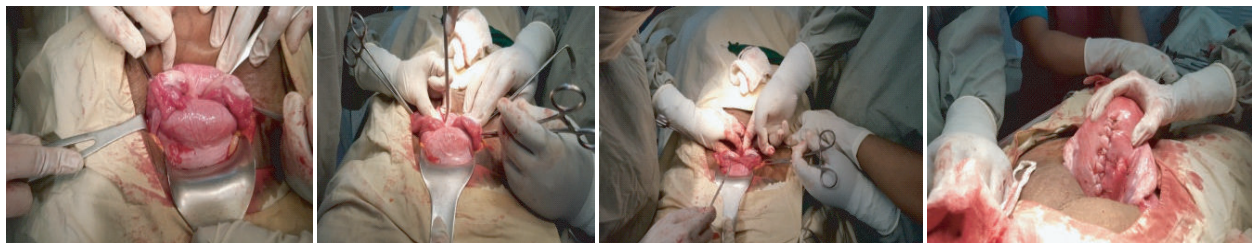
### Case presentaton:

A case of 35 years old woman para 5 came to a private hospital with shock and ongoing post partum hemorrhage, 6 hours after normal vaginal delivery at home. Her vitals were - PR120/min feeble, BP 90/60 mm of Hg, temperature 39 degree c. She was severely pale but conscious .On examination abdomen was soft, uterus was not palpable. On per vaginal examination uterine fundus and body palpated within vagina and the diagnosis was made clinically as complete inversion of uterus. She got delivered at home by traditional birth attendant by spontaneous normal vaginal delivery, baby was healthy, male, 2.5kg. Placenta was also expelled out spontaneously. No active management of third stage of labour was done. Then post partum haemorrhage started and continuing. We received the patient with shock and severe anaemia, 6 hours after her delivery. Anesthesiologist and available helping stuffs were summoned. Patient was resuscitated first and all supportive measures were taken. Her initial Hb% was 5g/dl and Total count was 1400 cmm. She was transfused 4units whole blood and I/V broad spectrum antibiotics were given. Manual reposition tried but was not possible. Usually placenta is to be separated manually after the

uterus has been contracted by adminstering parenteral oxytocics. Placenta may however be removed prior to replacement to reduce the bulk to facilitate replacement or minimise blood lose in partially separated placenta. However here placenta was separated at home. Uterus was dressed with povidon iodine . Then she was taken to operation theatre and manual reposition was tried under G/A with good relaxation but was unsuccessful due to tight cervical ring. Then a laparotomy was carried out. A cup shaped depression was seen and pulling in of the round ligaments.

Uterus was pulled up and the posterior ring of the cup was incised. Then inverted fundus was pulled up through the incision. Some membranes were still attached within the endometrial cavity and cleared off it .The incision on posterior wall of the uterus was stitched with a continuous suture no 01 vicryl and haemostasis achieved . Bilateral tubal ligation was also done. Oxytocin in I/V infusion was continued for next 24 hours. Further 2 unit blood transfused on first post operative day.

She made a good recovery and was discharged on post operative day 7. She is doing well on subsequent follow – ups.



**Figure:** From left to right, inverted uterus, cutting the cervical ring posteriorly, pulling the fundus through incision, after repair.

**Discussion:**

The presentation of the uterine inversion will vary depending on the severity of the inversion. The diagnosis of the puerperal uterine inversion is mainly clinical. It is based on three elements: haemorrhage, shock and a strong pelvic pain.<sup>5</sup> The haemorrhage strength is directly related to the duration of inversion. The bleeding is massive in more than 70% of cases and shock is the most constant sign.<sup>9,10</sup> It results from hypovolaemia which is secondary to bleeding and vagal reaction associated with stretching of the nervous fibres contained in uterine ligaments.<sup>8,9,10</sup> The sudden severe pain is less frequent and is present in 7 to 10% of cases. It can be covered by the anaesthesia.<sup>9</sup> Maternal morbidity may be significant with a uterine inversion and mortality rates approach 15%. Therefore it is paramount that further assistance is promptly summoned, so that the patient can be effectively resuscitated and appropriately stabilized. Puerperal uterine inversion should always be excluded in cases of sudden post-partum collapse and / or major post-partum haemorrhage.

The key approach which is usually successful if done immediately, is a non-surgical technique referred to as Johnson's method. Once diagnosed an attempt is made to replace the uterus digitally; which entails manual replacement of the uterus through the vagina past the cervical ring. The hand is placed inside the vagina, with the cup of the inversion in the palm of the operator's hand and the tips of the fingers towards the utero-sacral ligaments. The uterus is then forcefully lifted inside the abdominal cavity above the level of the umbilicus and held for 3 - 5 minutes until the passive action of the uterine ligaments corrects the inversion.<sup>12</sup> Should manual reposition fail to achieve uterine repositioning, then employing the use of hydrostatic method would be the next approach. If uterine inversion has persisted despite non-surgical approach, then surgery will usually be required. Although quite a number of surgical approaches have been described in the literature, the most common methods used are, Huntingtons technique, Haultain technique, Spinell's and Kustner technique. Spinelli and Kustner operations involve replacing the uterine fundus vaginally through the anterior and posterior transections respectively.<sup>13</sup> The abdominal route is preferred over the vaginal as the incision of the uterus is reduced to a minimum, traction on the round and broad ligaments helps in reposition, the uterine wall can be more accurately sutured and haemorrhage more efficiently controlled.<sup>14</sup> Therefore adopted the Haultain's abdominal hysterotomy with a good surgical outcome.

In cases where the uterus is preserved, recurrence is rare in subsequent pregnancies if good obstetrical care is given. Haultain himself has reported good pregnancy outcomes following the correction. Despite the fact that uterine inversion is uncommon, all obstetric care givers need to have a heightened awareness of the inherent dangers that can occur with uterine inversion. These are shock, hemorrhage, pulmonary embolism and if left untreated infection, uterine sloughing and turning to a chronic one, leading to irregular vaginal bleeding and discharge. Prognosis is good if diagnosis is made early, shock corrected blood transfusion arranged and reposition tried early. For prevention of this potentially life threatening condition active management of third stage of labour should be adopted in every case, and expulsion of placenta should not be tried when the uterus is relaxed. By being more aware and preparing for this obstetric emergency, one should respond quickly and appropriately manage this condition.

**Conclusion:**

The low incidence of uterine inversion leads to sparse experience in resolving this obstetric emergency. The best prognosis occurs in situations where the diagnosis and maneuvers for uterine reversal are made at an early stage. However in this case the patient presented late, after home delivery and surgical treatment was required for correction. It is essential to keep in mind this diagnosis in every case of post partum hemorrhage and shock and be updated about the strategies required to resolve the complication for best outcome.

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## PAPER PRESENTED IN CME/CPD ORGANIZED BY MEDICAL EDUCATION UNIT (MEU)

Date	Topic	Organized by	Speaker
13.01.16	Management of Diabetes Mellitus	Dept. of Medicine	Dr. Binti Biswas
27.01.16	Thalassemia: an update	Dept. of Paediatrics	Dr. Sabrin Tabassum Simmy
03.02.16	Pathology of Atherosclerosis	Dept. of Pathology	Dr. Hasan Hafizur Rahman
10.02.16	Problem based learning	Medical Education Unit	Prof. Dr. Ashraf Uddin Ahmed
17.02.16	Zika Virus Infection: A Vector Borne Disease	Dept. of Community Medicine	Dr. Ehsamul Azim
02.03.16	Update on Orthopaedic surgery	Dept. Orthopaedics & Traumatology	Dr. Zobaer Rakib
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