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Post Pandemic ‘New Normal’ Era: Adapting a Transforming Health Care System

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During the period of Covid-19 pandemic, we have learned about ‘social distancing’ as one of measures to reduce the transmission of the disease. The term social distancing has affected mostly the medical professionals and the whole healthcare system in Bangladesh; furthermore, it has also created some inhuman examples of damaging relationship within family during this pandemic whereas only the social solidarity could help to overcome the ongoing struggle of post pandemic new normal life in this world. Social bondage is the one of the important factor that creates solidarity but also opens scope for the transmission of the communicable diseases.

Failure to aware the citizens about the exact meaning of social distancing has created examples that the family bonding couldn’t help the affected person to have simple humanity at their end life state and even after death they have failed to get proper ritual funerals and burial. We cannot ignore the accountability for such humanity crisis.

Corona virus disease (COVID-19) is an infectious disease caused by the SARS-CoV-2 virus with possible origin from a seafood animal market at Wuhan in China¹. Most people who fall sick with COVID-19 will experience mild to moderate symptoms and recover without special treatment. However, some will become seriously ill and require medical attention². The World Health Organization (WHO) on January 30, 2020, has declared COVID-19 outbreak a public health emergency of global concern and classified it as a pandemic on March 11, 2020³. In Bangladesh, from 3 January 2020 to 21 October 2021, there have been 1,566,907 confirmed cases of COVID-19 with 27,801 deaths which have been reported to WHO. As of 18 October 2021, a total of 58,801,055 vaccine doses have been administered⁴. Bangladesh reported its first three cases of Covid-19 on March 8, 2020. The first death was reported 10 days later⁴.

Pandemic has revealed the necessity of painful adjustments to the new reality. Bangladesh is also not an exception. However, Bangladesh has surprisingly managed well the acuteness of the pandemic and its impact on economy and

society are less severe than many other developed economies. A number of reports have been found to highlight the significant inadequacies and inefficiencies in the healthcare sector revealed during this pandemic. Careful planning and investments in public healthcare facilities in Bangladesh is among the lowest in the world. In the post Covid-19 era, public expenditure in the health sector should be significantly increased. The introduction of a universal healthcare system should be the key priority⁵⁻⁷.

Family is the strongest and fundamental institution for social solidarity. We need to rebuild the damaged relationship in family, workplace, community at the national and global level. Civil society originations need to share the responsibility to repair the relationship within healthcare community, between physicians and the patient, and between healthcare authority and healthcare workers. Thus, to achieve universal healthcare system, Restorative approach in healthcare system could be a trusted solution for repairing relationship at every community level starting from family to global governance.

[Journal of Monno Medical College, December 2021;7(2): 61]

References

1. Cyranoski D. Mystery deepens over animal source of coronavirus. *Nature* 2020;579:18–9
2. Coronavirus disease (COVID-19) – WHO, World Health.
3. World Health Organization. WHO Director General’s Opening Remarks at the Media Briefing on COVID-19, 2020. March 11, 2020
4. Bangladesh: WHO Coronavirus Disease (COVID-19) Dashboard
5. Clinical spectrum of SARS-CoV-2 infection, 2021; Accessed: April 21, 2021 Website: <https://www.covid19treatmentguidelines.nih.gov/overview/clinical-spectrum>.
6. COVID-19 rapid guideline: managing the long-term effects of COVID-19. (2020). Accessed: December 18, 2020 Website: <https://www.nice.org.uk/guidance/NG188>.
7. Post COVID-19 return to “new normal” in surgical care: joining the dots

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Knowledge and Practices of Hand Washing among Rural People of Manikganj: A Community Based Cross Sectional Study

Ali KM¹, Alam MJ², Mahjabin A³, Akter T⁴, Emdad MS⁵, Nabila FN⁶

Abstract

Background: Hand washing is well recognized preventive tool for disease prevention. **Objective:** The study was intended to assess the status of hand washing practice among the rural people of Manikganj. **Methodology:** This community based cross-sectional study was conducted among rural people of Velabad village of Harukandi union at Harirampur upazila of Manikganj district of Bangladesh from November 2019 to April 2020 for a period of nearly 6 month under the Department of Community Medicine at Monno Medical College, Manikganj, Bangladesh. **Results:** A total number of 360 individuals participated in the study. Majority were in the age group of 20 to 40 years which was 206(57.2%) respondents. Regarding knowledge about necessities of hand washing, 61.9% respondents washed hand for removal of dirt. About 77.8% subjects had knowledge of occurring diarrhea without proper hand washing. In 46.1% participants, source of information regarding importance of hand washing was family. However, all (100.0%) respondents practiced hand washing after defecation either with soap (94.7%) or with plain water (1.9%), mud (3.3%). About 98.9% respondents, 63.3% respondents and 54.1% respondents had practiced hand washing before meal, preparation of food and before feeding their children respectively. About 73.9% subjects used soap to wash hand before meal about 56.1%, only water to wash hand before preparing food 59.5% used only water to wash hand before feeding the child, 70.3% respondents washed both hand before meal. **Conclusion:** Rural people still have a lack of knowledge about proper hand washing practice. [*Journal of Monno Medical College, December 2021;7(2):62-]*

Keywords: Hand washing; practices; rural community; Manikganj

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Introduction

Contaminated hands play a major role in fecal-oral transmission of diseases. Public health importance of hand washing as well as its importance in reduction of communicable diseases such as diarrhea and acute respiratory infections have been highlighted in many studies worldwide¹. The Millennium Development Goals have firmly established the issues of "water, sanitation, and hygiene" on the global agenda. Neglect of hygiene goes a long way in explaining why water and sanitation programmes have often not brought the expected benefits².

Hand washing with soap has been viewed as one of the most cost-effective ways of reducing the global infectious disease burden³. Despite the irrefutable evidence in favour of hand washing, it is rarely practiced at times when pathogen transfer could be interrupted and even more rarely involves the use of soap⁴. Every year 15th October is celebrated as a Global Hand washing Day. Global Hand washing Day was originally created for children and schools, but can be celebrated by anyone promoting hand washing with soap⁵. However this study aimed at to find out the status of hand washing practices among the rural people of Manikganj. The

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study was intended to assess the status of hand washing practice among the rural people of Manikganj.

Methodology

This community based cross sectional study was conducted among rural people of Velabad village, Harukandi union, Harirampur upazila of Manikganj district from November 2019 to April 2020 for a period of nearly 6 month under the dept. of Community Medicine, Monno Medical College, Manikganj. The ethical clearance was approved by ethics review committee of Monno Medical College. All the adult people aged 18 years and above, both male and female providing informed written consent were selected for the study conveniently. Psychologically abnormal and seriously ill patients were excluded from the study. Research instrument was semi-structured questionnaire which was pretested at homogenous non-sample area and face to face interview of the respondents were taken. The data were checked and verified for any omission or inconsistency. All data were recorded systematically in preformed data collection form and quantitative data were expressed as mean and standard deviation and qualitative data were expressed as frequency distribution and percentage. Data were presented by suitable chart and diagram. Statistical analysis was performed by using window based computer software devised with Statistical Packages for Social Sciences with 95% confidence limit.

Results

A total number of 300 people were recruited. Most 206(57.2%) of the respondents belonged to the age group (20 to 40) years, majority 223(61.9%) were female, 174(48.3%) completed below SSC level, most 198(55.0%) of the respondents were housewives and majority 160(44.4%) had monthly family income (5000 to 10000) taka (Table 1). the groups (Table 1).

Regarding washing hand before preparation, consumption of food and after defecation, 228 (95.4%), 356(98.9%) respondents and 360(100.0%) respondents of the respondents washed their hands respectively (Table 2).

In relation to ingredients used in washing hand before meal, majority 128 (56.1%) used only water and 100 (43.9%) of respondents used soap as well after defecation majority 341 (94.7%) used soap, 12 (3.3%) of respondents used mud and only 7 (1.9%) used water (Table-3).

In relation to diseases of improper hand washing, 280 (77.8%) 46 (12.8%) and 32(8.9%) respondents had knowledge of occurring diarrhoea, dysentery and helminthiasis respectively (Table 4).

In connection with sources of learning process about hand washing, 166 (46.1%), 90 (25.0%) and 88 (24.4%) respondents learned from their parents, from television and from their school respectively (Table 5).

Table 1: Socio- Demographic Characteristics of the Respondents (n=360)

Socio-demographic characteristics	Frequency	Percent
Age Group		57.2
20 to 40 Years	206	32.2
41 to 60 Years	116	10.6
61 to 80 Years	38	
Mean±SD= 40.96±15.2		
Gender		38.1
Male	137	61.9
Female	223	
Religion		77.2
Muslim	278	22.8
Hinduism	82	
Education of mother		28.9
Illiterate	104	48.3
Below SSC	174	10.8
SSC	39	11.9
HSC & above	43	
Occupation		13.3
Agriculture	48	55.0
Housewife	198	10.6
Business	38	13.6
Service holder	49	6.1
Day laborer	22	1.4
Others	05	
Monthly Family Income		1.4
Less than 5000 BDT	5	44.4
5,000 to 10,000 BDT	160	35.3
10,000 to 15,000 BDT	127	18.9
More than 15,000 BDT	68	

Table 2: Washing hand before preparation, consumption of meal and after defecation

Attributes	Frequency	Percent
Washing hand before preparation of food		
Yes	228	95.4
No	11	4.6
Washing hand before consumption of meal		
Yes	356	98.9
No	4	1.1
Washing hand after defecation		
Yes	360	100.0
No	0	0.0

Table 3: Ingredients used in washing hand before meal and after defecation

Attributes	Frequency	Percent
Ingredients used before meal		
Soap	100	43.9
Only water	128	56.1
Ingredients used after defecation		
Soap	341	94.7%
Mud	12	3.3%
Only water	7	1.9%

Table 4: Diseases those may occur due to improper hand washing

Diseases	Frequency	Percent
Helminthiasis	32	8.9
Dysentery	46	12.8
Diarrhoea	280	77.8
Skin disease	2	0.6

Table 5: Learning sources of hand washing

Learning sources	Frequency	Percent
School	88	24.4
Parents	166	46.1
Television	90	25.0
Others sources	16	4.4

Discussion

In this study, most (57.2%) of the respondents belong to the age group of 20 to 40 years, majority (61.9%) are female, 48.3% respondents have completed below SSC level and most (55.0%) of the respondents are housewives.

A similar study that has been conducted in India⁶ shows that 37.26% respondents belong to the age group 21 to 40 years; 45.5% respondents are female; however, 13.8% respondents has completed below SSC level which is inconsistent with this study. This dissimilarity could be due to variation of time, place, person and sample size. Another study which has been conducted by Halder et al⁷ reveals that majority (24%) are homemaker which is consistent with this study. This similarity could be due to the similar study place and quite near time frame.

Regarding washing hand before preparation and consumption of food as well as after defecation, 95.4% respondents, 98.9% respondents and 100.0% respondents wash their hands respectively. Another study which has been conducted in West Bengal⁸ shows that 64.0% respondents wash hand before preparing food and 100.0% respondents wash hand after defecation which is almost similar with the results of this present study.

In relation to ingredients, 43.9% respondents and 94.7% respondents use soap during washing hand before taking

meal and after defecation respectively. A study that has been conducted by Ray et al⁹ reflects that only 13.0% respondents and 71.0% respondents use soap before meal and after defecation respectively. That means majority of the respondents wash hand with soap after defecation which is consistent with this study.

In relation to diseases of improper hand washing, 77.8% respondents and 12.8% respondents have knowledge regarding diarrhea and dysentery respectively. A study which has been conducted by Aiello et al¹⁰ shows that only 31.0% respondents have knowledge of occurring gastrointestinal illness which is inconsistent with the results of the study.

In connection with sources of learning process about hand washing, 46.1% respondents and 24.4% respondents learn from their parents and from their school respectively. A study that has been conducted in Saudi Arabia¹¹ reveals that majority (62.0%) learn hand washing process from their parents and 18.0% respondents learn from their school which is almost similar with this study.

There are limitation of the study. This is a small study conducted in a small area selected conveniently. The sample size was also small for which it may not reflect the real picture of Bangladesh.

Conclusion

The study reveals that regarding washing hand before preparation and consumption of meal and after defecation, majority wash hand before preparation and consumption of food and all the respondents wash hand after defecation. In relation to ingredients used in washing hand before meal about half of the respondents use soap and about three-fifths of the respondents use only water as well as after defecation, majority use soap. In relation to diseases of improper hand washing, majority have knowledge of occurring diarrhoea. In connection with sources of learning process about hand washing, majority have learned from their parents and one-fourths of the respondents have learned from television and from their school respectively. Rural people still have a lack of knowledge about proper hand washing practice that results a lot preventable diseases. So, a community based training program for rural people is needed.

References

1. Ray SK, Amarchand R, Srikanth J, Majumdar KK. A study on prevalence of bacteria in the hands of children and their perception on hand washing into two schools of Bangalore and Kolkata. *Indian J Public Health*. 2011;55:293-97
2. Ray SK, Zaman FA, Laskar NB. Hand washing practices in two communities of two states of Eastern India: An intervention study. *Indian J Public Health*. 2010;54:126-30
3. Cairncross S, Valdmanis V. Water supply, sanitation, and hygiene promotion. In *Disease Control Priorities in Developing Countries*. New York: Oxford University Press. 2006:771-92
4. Curtis VA, Danquah LO, Aunger RV: Planned motivated and habitual hygiene behaviour: an eleven country review. *Health Educ Res* 2009,24(4):655-73

5. Global Hand washing Partnership. Global Hand washing Day. 2017. [Updated on:2017; Viewed on: 15 August,2021; Website:<http://globalhandwashing.org/ghw-day>.]
6. Pandve HT, Chavan VM, Giri PA. Study of Health Problems and Addiction Pattern among Elderly Population in Rural Areas of Pune, India. *Epidemiology (Sunnyvale)*. 2017;7(303):2161-1165
7. Halder AK, Tronchet C, Akhter S, Bhuiya A, Johnston R, Luby SP. Observed hand cleanliness and other measures of handwashing behavior in rural Bangladesh. *BMC Public Health* 2010 Dec;10(1):1-9
8. Ray SK, Dobe M, Lahiri A, Basu SS. Hand washing practices in urban and rural communities in and around Kolkata, West Bengal. *Indian Journal of Public Health* 2009;53(3):192-5
9. Ray SK, Dobe M, Maji S, Chakrabarty D, AK SR, Basu SS. A pilot survey on hand washing among some communities of West Bengal. *Indian Journal of Public Health* 2006;50(4):225-30
10. Aiello AE, Coulborn RM, Perez V, Larson EL. Effect of hand hygiene on infectious disease risk in the community setting: a meta-analysis. *American J Public Health* 2008;98(8):1372-81
11. Almoslem MM, Alshehri TA, Althumairi AA, Aljassim MT, Hassan ME, Berekaa MM. Handwashing Knowledge, Attitudes, and Practices among Students in Eastern Province Schools, Saudi Arabia. *J Environmental Public Health* 2021;2021

Development of Genetic Counseling Evaluation Format for Bangladeshi Adult Acute Myeloid Leukemia Patients: A Cross-Sectional Study

Raman MZ¹, Uddin ME², Asha MT³, Sumon MSR⁴, Bilkis S⁵, Mohammed I⁶, Akter F⁷, Yesmin ZA⁸, Banu LA⁹

Abstract

Background: Scattered patient counseling services are available at different public and private institutions in Bangladesh but organized genetic counseling services are either at an early stage of development. **Objective:** The aim of this study was to develop a genetic counseling evaluation format for adult Bangladeshi patients with AML. **Methodology:** The present research was a cross sectional descriptive study. It was carried out in the Department of Anatomy at Bangabandhu Sheikh Mujib Medical University (BSMMU), Dhaka, Bangladesh from March 2016 to February 2017 for a period of one year. After taking this in account, a draft format was prepared by reviewing relevant documents available online. An expert panel was selected from Dhaka city which was consisted of two hematologists, one educationist, one psychiatrist, and one counselor for a group discussion. **Results:** A draft format was prepared by reviewing relevant documents available and then a proposed format was developed on the basis of the opinion of the expert panel, for better communication and effectiveness in Bangla and English. **Conclusion:** This format has enabled the counselors, and clinicians about the utility and importance of providing sincere quality full genetic counseling. Also, the patients feel importance for taking part in counseling and counseling evaluation process. [*Journal of Monno Medical College, December 2021;7(2):62-*]

Keywords: Consultant; genetic counseling; evaluation format

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Introduction

Cancer starts when the cell in a part of the body begins to grow out of control and can spread to other areas of the body¹. Acute myeloid leukemia (AML) is a malignant disease of the bone marrow in which precursors of blood cells are arrested in an early stage of development². The American Cancer Society's estimates for leukemia in the United States for 2016 are about 19,950 new cases of AML and about 10,430 deaths from AML. According to Hossain et al³ the median age at onset of AML in Bangladesh is 35 years and was the most frequent haematological malignancy 28.3%

cases. The incidence of therapy related (secondary) AML is 10.0 to 20.0% of all AML cases⁴. Down syndrome is associated with a 10 to 20 fold increased risk of AML⁵. Familial AML is a rare type of inherited leukemia which is transmitted by a non-sex chromosome in a dominant fashion⁶. Cancer genetic risk assessment involves use of pedigree analysis with available risk assessment models to determine whether a family history is suggestive of sporadic, familial, or hereditary cancer⁷. In this context family history holds important information about an individual's past and future life. The workshop 'Genetic Counseling/ Consultations in

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South-East Asia' at the 10th Asia Pacific Conference on Human Genetics in Kuala Lumpur, Malaysia, in December 2012 with aimed at addressing culture- and context-specific genetic counseling/ consultation practices in South-East Asia. For this reason, need is felt to communicate the complex cancer genetic information to the consultant using everyday language. There are a large number of AML patients in Bangladesh. Genetic counseling is a communicative process⁸. The unique aspects of AML genetic information can guide a course of action to minimize distress and maximize benefit for both the patient and the family. The conversation issues in counselling are to communicate the right medical information through mother language.

Responding to the global trends, the human genetics research in Bangabandhu Sheikh Mujib Medical University (BSMMU) has already been modernized with the help of Higher Education Quality Enhancement Project (HEQEP) of University Grants Commission of Bangladesh. It would, therefore, be a great opportunity to modernize our medical knowledge specially it will open a great opportunity in front of our anatomist in this field for the betterment of the patient care with minimum training if format present for other diseases like this AML which will help to provide institutional base organized service. Therefore, the purpose of this study was to develop a genetic counseling 'evaluation' format for acute myeloid leukemia (AML) patients.

Methodology

This present research was a cross-sectional descriptive study. It was carried out in the Department of Anatomy at at Bangabandhu Sheikh Mujib Medical University (BSMMU), Dhaka, Bangladesh from March 2016 to February 2017 for a period of one year. This study was approved by the Institutional Review Board (IRB) of Bangabandhu Sheikh Mujib Medical University, Dhaka, Bangladesh. The study had involved many steps. The AML counseling evaluation tools was available online; other cancer related counseling formats, journal articles and books related to AML counseling were reviewed and a 'draft format' for genetic counseling evaluation was developed for the adult Bangladeshi patients with AML. A group discussion (GD) for analysis of the draft format was organized. Purposive sampling was performed for selecting five (5) specialists which was consisted of two hematologists, one educationist, one psychiatrist and one counselor and were selected for the discussion. Relevant documents were sent to the participants seven days prior to

the group GD. For convenience, participants for GD were chosen from Dhaka city. The participants provided a written feedback after the discussion. A 'proposed genetic counseling evaluation format' was developed for AML patients by modifying the draft format according to the feedback of the GD participants. Both the draft and proposed formats were in Bangla (the mother tongue) the meaning of English not being directly used and as well as its original English. The study was conducted after receiving ethical approval from the institutional review board (IRB) of BSMMU. All the participants of the group discussion attained voluntarily. A written informed consent form was provided to the participant and GD was conducted only after getting their consent in that form. Anonymity and confidentiality of the information of the participant was maintained.

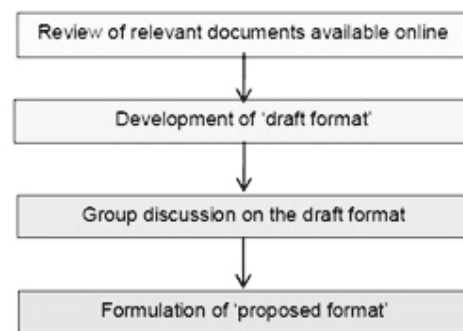


Figure I: Steps of development of genetic counseling evaluation format for adult Bangladeshi AML patients

Results

The draft format for genetic counseling evaluation was prepared by analyzing journal articles, counseling evaluation formats available online for AML and other cancers documents. The draft format was constructed on the following parameters like domain A, evaluation of consultant wellbeing; domain B, evaluation of consultant perceived personal control; domain C, evaluation of consultant expectation and domain D, post counseling evaluation of consultant satisfaction. Journal articles related to counseling evaluation, counseling formats for AML and other cancers available online, and books on genetic counseling were helpful for idea generation and construction of the draft format. The draft format was presented to the specialists for group discussion. The participants discussed on various aspects of the draft format. The opinion of the group discussion participants on the draft format is presented (Table 1).

Table 1: Opinions of the Group B members of the GD on the proposed issues of the preliminary draft genetic counseling evaluation format for AML patients

Topic	Proposed issues	Opinion
Questionnaire of the draft format for evaluation	Feeling at first saw	<ul style="list-style-type: none"> • Should be numbered as section-A, Section-B and under Section- A all questionnaire numbered as A1, A2. • The number of the question should be corrected as for e.g., Section A- A1, A2))

Topic	Proposed issues	Opinion
Consultand wellbeing	Statement	<ul style="list-style-type: none"> • In case of statements questions it needs modification' • The questions should be included all the 28 and the translation of this question should be corrected • The statement should be in question form • The heading should be started with 'Have you recently', • The Bangla of the questions should be corrected
	Answering options	<ul style="list-style-type: none"> • The questions answering Bangla option should be modified ◊ Much worse than usual ◊ Worse than usual ◊ Same as usual ◊ Better than usual
Consultand perceived personal control (PPC)	Answering options	<ul style="list-style-type: none"> • The response should be in Likert scale • The language of Bangla option of the Likert scale should be changed & English option like this - ◊ Not at all certain ◊ Not that certain ◊ Almost certain ◊ Absolutely certain ◊ Undecided
Consultand expectation	Statement item	<ul style="list-style-type: none"> • The number of the questions should be included • The first two statement should be excluded • Question should be added
Consultand satisfaction	Answering options	<ul style="list-style-type: none"> • The option should be in Yes/ No/ Undecided
	Statement item	<ul style="list-style-type: none"> • The serial of the questions should be corrected • Should have 'The counselling session was valuable to me' • The question 10 and 11 should be made one
	Answering options	The option (Bangla & English) of the Likert scale should be given

Discussion

The format acts as a guideline for the counselor for ensuring better patient care according to their demand. According to Nishat¹¹ and Yesmin¹² analyses of available relevant documents is an important step for formulating any new format^{11,12}. Outcome of genetic counseling is difficult to evaluate, as it does not involve treatment and cure. Evaluating patients/consultand knowledge is given importance that the delivery of factual information is the most frequent interaction between genetic counselor and consultand/clients⁹. Biesecker and Peters (2001) stated that genetic counseling is a dynamic psycho-educational process in which the primary goal is to facilitate clients' ability to use genetic information in a way that minimizes psychological distress and increases personal control¹⁰. Factors which appear to assist in ameliorating these negative reactions within the genetic counseling setting include the individual's level of general wellbeing, perceived personal control (PPC), satisfaction with the service, as well as patient's expectations of the service.

Subsequently development of 'proposed' genetic counseling 'evaluation format' for AML patients' through modification according to the written and verbal opinion of the

participants of the GD addressing the different components covering the 'preliminary draft' genetic counseling 'evaluation format'. The questionnaire/ statements of the 'proposed format' was in mother language the Bangla and also in English.

Payne et al¹³ reported that genetic counseling is a communication process to provide information and support patients so that they could understand the medical facts. The psychological orientation of a person is significantly affected by the mother tongue or known language. But it was observed that it is quite difficult to communicate with patients in the English version of the format.

The Cronbach's alpha values for the Bangla proposed genetic counseling evaluation format ranging from 0.66 to 0.93 that indicates the domain specific Bangla items is reliable and very much internally consistent. Tiffani et al¹⁴ reported in their study that the Cronbach's alpha value for genetic counseling satisfaction was 0.90 but in present study the Cronbach's alpha value for consultand satisfaction was 0.66. So the final format was in Bengali to overcome the linguistic barrier and for better communication with patients. The English version of the proposed format is attached herewith.

Conclusion

Genetic counseling is about sharing information regarding genetic and disease risks in a manner useful to an individual, couple or family. The final genetic counseling evaluation format will help a variety of professionals to evaluate AML patients genetic counseling and will maintain the quality of the AML genetic counseling service also help to find out barriers to effective quality full genetic counseling. The face to face conversation will increase the importance of evaluation among family member and other members of the society.

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References

1. American Cancer Society (ACS) US, What is acute myeloid leukemia, 2016
2. Karen S. Acute Myelogenous Leukemia, 2015
3. Hossain MS, Iqbal MS, Khan MA, Rabbani MG, Khatun H, Munira S, Miah MM, Kabir AL, Islam N, Dipta TF, Rahman F. Diagnosed hematological malignancies in Bangladesh-a retrospective analysis of over 5000 cases from 10 specialized hospitals. *BMC cancer*. 2014;14(1):1-7
4. Leone G, Pagano L, Dina BY, Voso MT. Therapy-Related Leukemia And Myelodysplasia: Susceptibility And Incidence. *Haematologica* 2007;92:1389-1398
5. Xavier AC, Ge Y, Taub JW. Down syndrome and malignancies: a unique clinical relationship: a paper from the 2008 william beaumont hospital symposium on molecular pathology. *The Journal of Molecular Diagnostics*. 2009;11(5):371-80
6. University of New Mexico (UNM), Acute Myeloid Leukemia Screening/Prevention, 24 June 2016
7. Trepanier A, et al. "Genetic cancer risk assessment and counseling: recommendations of the national society of genetic counselors", *Journal of Genetic Counseling*, 2004;13(2):83-114
8. Phadke SR, Pandey A, Puri RD, and Patil SJ. Genetic counseling: the impact in Indian milieu. *Indian Journal of Pediatrics*, 2004;71:1079-82
9. Davey A, Rostant K, Karen H, Jack G, O'Leary P. Evaluating genetic counseling: client expectations, psychological adjustment and satisfaction with service. *Journal of Genetic Counseling* 2005;14(3):151-61
10. Biesecker BB, Peters KF. Process studies in genetic counseling: peering into the black box', *American Journal of Medical Genetics*, 2001;106(3):191-198
11. Nishat L. Needs Analyses and Preparation of Documents for Developing a Clinically oriented Neuroanatomy Course for Four Postgraduate Programmes, Master Thesis, BSMMU, Dhaka, 2013
12. Yesmin ZA. Developing curriculum for Advanced Genetics as an elective subject in the MS Anatomy residency programmes of BSMMU, Master Thesis, BSMMU, Dhaka, 2015
13. Payne K, Nicholls S, McAllister M, MacLeod R, Donnai D, Davies LM. Outcome measurement in clinical genetics services: a systematic review of validated measures. *Value in Health*. 2008;11(3):497-508.
14. Tiffani AD, Beth NP, Bryn DM, Kenneth PT. Patient satisfaction with cancer genetic counseling: a psychometric analysis of the genetic counseling satisfaction scale. *Journal of Genetic Counseling*, 2004;13(4):293-304

Pattern of Drowning Cases recorded from an autopsy center at Tertiary Care Hospital in Sylhet

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Abstract

Background: Globally drowning remains a leading cause of unintentional mortality of all age and sex groups, commonly accidental in nature, affecting highest rates in low and middle income countries. **Objective:** The objective of the study was to see the victims of common age group, common manner of death and socioeconomic characteristics who suffer death due to drowning. **Methodology:** This was retrospective study and all drowning cases autopsied cases during the period of July 2015 to July 2017 were analyzed at the Department of Forensic Medicine and Toxicology at Sylhet MAG Osmani Medical College (SOMC), Sylhet, Bangladesh. **Results:** A total number of 44 cases were brought to the Department of Forensic Medicine at SOMC, Sylhet. Maximum number of cases belongs to (0 to 10) year age group and male to female ratio was 2.3:1. Accidental drowning occurs 22 cases and suicidal occurs 12 cases. Manner of death could not be assessed in 10 cases because body was completely decomposed. **Conclusion:** In the conclusion, the study reveals that majority drowning cases are from low socio-economic condition with an early age group. [*Journal of Monno Medical College, December 2021;7(2):62-*]

Keywords: Asphyxia; drowning; autopsy

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Introduction

Drowning is a form of violent asphyxia death where the respiratory passage is occupied by fluid or water, due to submersion under water and inhalation of water¹. Drowning literally means 'suffer death by submersion in water or any other liquid because of being unable to breath². Complete submersion is not necessary, for submersion of nose and mouth alone for a sufficient period can cause death from drowning³. Drowning is classified in to two major types like typical drowning and atypical drowning.

In typical drowning also known as wet drowning, there is actual water in to the air passage by the fluid or water into it. In atypical drowning there is very little or no fluid or water into air passage. It includes: dry drowning, immersion syndrome, submersion of unconscious and secondary drowning⁴. Recently dry drowning is also classified by

outcome into: death ongoing health problems and no ongoing health problem⁵. Dry drowning is reported to account for 10 to 15 percent of all drowning cases in west⁶ and (10-20) percent of death due to drowning in India⁷. In Immersion syndrome, death results from cardiac arrest due to vagal inhibition⁸. Submersion of unconscious occur due to asphyxia⁹.

Drowning remains an important public health problem around the world. As indicated by the World Health Organization, it is one of the 10 leading causes of death for individuals aged 1 to 24 years in every region of the world¹⁰. Worldwide drowning is the third leading cause of accidental death. In 1990, number of deaths due to drowning was 545,000 and 2013, it was estimated to have resulted in 368,000 deaths¹¹. This amounts to 7.0% of all accidental deaths, with major amount of these deaths occurring in low

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and middle-income countries¹². Worldwide total number of death for the age of 1 to 4 years was 19,69,567. Of them 3.3% of total mortality of specific age group was due to drowning¹³. The objective of the study was to see the victims of common age group, common manner of death and socioeconomic characteristics who suffer death due to drowning.

Methodology

This was retrospective study which was carried out from July 2015 to July 2017. During this time all autopsies were referred to Department of Forensic Medicine at Sylhet MAG Osmani Medical College, Sylhet, Bangladesh from different police stations at Sylhet District. Total number of 44 cases of unintentional deaths by drowning were found. After fulfillment of pre-requisites of autopsy, all body cavities were opened and the organs were examined thoroughly and positive findings regarding confirmation of death caused by drowning were found out carefully.

Results

Total 44 cases were brought by 20 police stations for autopsy to the department of Forensic Medicine at SOMC College, Sylhet. The age group was noted in table 1. Highest age group is present in the (0-10) years.

Table 1: Age Wise Distribution of Cases

Age Group	Frequency	Percent
0 to 10 Years	20	45.4
11 to 20 Years	10	22.7
21 to 30 Years	05	11.4
31 to 40 Years	05	11.4
41 to 50 Years	04	9.09
Total	44	100

The sex group was noted in the table 2. Sex ratio: Male and female was 2.3:1.

Table 2: Gender wise distribution of cases

Gender	Frequency	Percent
Male	31	70.5
Female	13	29.5
Total	44	100

The manner of death was noted in table 3. Accidental drowning constitutes 22 cases followed by suicidal drowning 12 cases.

Table 3: Manner Wise Distribution of Cases

Manner	Frequency	Percent
Accidental	22	50
Suicidal	12	27.3
Unknown	10	22.7
Total	44	100

Distribution of cases accordingly to socio-economic status was noted at table 4. Higher frequency of drowning is found in the lower socio-economic group.

Table 4: Distribution of Cases according to Socioeconomic Status

Socioeconomic Status	Frequency	Percent
Upper class	10	22.7
Middle class	14	31.8
Lower class	20	45.5
Total	44	100

Discussion

In this retrospective study a total number of autopsied cases was 400 during the period of 1st July 2015 to 1st July 2017 out of which drowning constitute 44 cases. This total number of 44 cases were brought by 20 police stations for Post mortem examination to the Department of Forensic Medicine at Sylhet MAG Osmani Medical College, Sylhet. In present study, Highest age group belongs to (0 - 10) years. The trend of drowning cases is increased from (2015 - 2017) respectively. The reason is lack of knowledge to swim water. However, negligence of elders is also responsible for this. However, Male to Female ratio was 2.3:1. This because male are more exposed to water sources such as irrigation, fishing and swimming. Accidental drowning more common than other cases. In some cases manner of death could not be assessed because body was completely decomposed & identity was not established by Investigating officer.

Considering Socio-economic status of the victim, higher frequency of drowning found in lower Socio-economic group. The reason of more victims in this socio-economic status is due to bathing in the pond water which is due to lack of shower in their house. In USA death rates & neonatal injury rates were highest among children below 4 years. Drowning is the most common cause of accidental death in Australian children; these children most commonly drowned in swimming pools. In Canada, it has 525 water related fatalities. Children were at highest risk of death from unexpected by falling into water. Children age in 1 to 4 years accounted for 21.0% of fatalities¹⁴. According to study, in a rural area of Bangladesh in (1983 - 95). Death occur due to drowning ranged from about 10.0% to 25.0% child¹⁵. About 91.0% of all global drowning fatalities occur in low and middle income countries¹⁶.

Most unintentional drowning event occurred in communities with natural water such as rivers, lakes, Ponds and sea. Subsequently victims were found dead at the scene many hours after the drowning event occurred. The signs of drowning in a dead body recovered from the water for the same period are wet body, cloths, presence of mud & sand over the body. Persistent white, copious, fine, leathery froth has been found in mouth & nasal opening which is the vital finding in case of death due to drowning. However, sand,

mud is also found in esophagus, stomach, intestine, on dissection. The lungs are found voluminous, edematous balloon like. The lungs pit on pressure. Diatoms which are unicellular algae are found in some organ and tissue including brain and bone marrow.

There are changes in blood chemistry like increased chloride & potassium ion in fresh water drowning, on the other hand decreased sodium level, magnesium may be increased in Salt water drowning. Death in drowning will show a discrepancy from country to country due to geographic environment. The picture of death due to drowning will not same if we compare them between district to district and division to division in our country as the number of victims of drowning will more in localities where there is easy access to natural water like ponds, river.

As drowning is preventable and simple steps can be taken to help with water safety, future study required for sustainable improvements in drowning prevention as well as increase emergency responsive services in all possible steps in order to prevent unnatural drowning deaths to overcome the situation.

Conclusion

In conclusion, majority drowning cases are from low socio-economic condition with an early age group. Drowning is preventable cause of death, thus, preventable death must be approached with vigilance. This issue should be carried out and should be addressed appropriately as to take special measures and essential steps by government, non-government and voluntary organization to save these lives of victims irrespective of age, sex and socio-economic condition. However, special attention should be attributed according to the finding of the study to save the lives of children who commonly become the victims of unintentional death due to drowning.

References

1. Nandy A. principal of Forensic Medicine including Toxicology. Revised reprinted, ed. New book central Agency, Kolkata, India: 2014; 540.
2. VijK. Text Book of Forensic Medicine and Toxicology 6thed, Elsevier, Reed Elsevier Private Ltd, India: 2011; 126-7.
3. Parikh CK. Parikh's Textbook of Medical Jurisprudence, Forensic Medicine & Toxicology, 6thed. CBS publishers & Distributors Pvt. Ltd New Delhi, India: Reprint – 2014; 6: 62.
4. Rao NG. Textbook of Forensic Medicine & Toxicology, 1sted. Jaypee Brothers Medical Publishers (P) Ltd New Delhi, India, 2006; 204.
5. Beeck V, Branche CM, Szpilman D, Modell JH, Bierens JJLM, A new definition of drowning; towards documentation and prevention of a global public health problem, Bulletin of World Health Organization Past issues. 2005; 83(II): 801 – 80.
6. DiMao VJ, DiMao D, Forensic Pathology, 2nded, CRC press, New York: ISBN 9780849 300721 – CAT # 007.
7. Nandy A, principle of Forensic Medicine including Toxicology, Revised reprinted ed. New central Book agency, Kolkata, India.
8. Redy KSN, The essential of Forensic Medicine & Toxicology. 33rded, Jaypee Brothers Medical Publishers (P) Ltd. New Delhi, India, 2004, 215.
9. Rao NG, Textbook of Forensic Medicine & Toxicology, 1sted. Jaypee Brothers Medical Publishers (P) Ltd New Delhi, India, 294; 366.
10. World Health Organization. Global report on drowning: preventing a leading killer. (World Health Organization,2014).
11. GBD 2013 Mortality & Causes of Death collaborators. Global, Regional and national age – sex Specific all cause & cause-specific mortality for 240 causes of death, 1990-2013. A systematic analysis for the Global Burden of Disease study 2013. Lancet 2014; 385: 117 – 171.
12. “Drowning”. World Health Organization. Available from: <http://www.who.int/mediacentre/factsheets/fs347/en/>. [Last cited on 2010 Dec 30].
13. Lozano R, Naghavi M, Foreman K, et al. Global & regional mortality from 235 causes of death for 20 age groups in 1990. A systemic analysis for 20 age groups in 1990. A systemic analysis for the global burden of disease study 2012; 380: 2095 – 128.
14. <http://horizon.parachutecanada.o9rg/en/article//water-related-fatality-facts-glance-canada-1991-2010>.
15. Ahmed MK, Rahman M, Van J, Ginneken J. Epidemiology of child death due to drowning in Matlab, Bangladesh. Int J Epidemiol. 1999; 28: 306-11.
16. (WHO) Global Health Estimates (GHE).

Bacteriological Evaluation of Commercially Available Drinking Bottled Water at Sylhet City of Bangladesh

Mollika FA¹, Rahman MM², Jahan T³, Farzin A⁴, Hossain M⁵, Das P⁶, Haque MM⁷

Abstract

Background: There have been increased uses of bottled drinking water in an assumption that the bottled water is safer than tap water. **Objectives:** This study was carried out to evaluate the bacteriological status of bottled water available at Sylhet city. **Methodology:** This cross-sectional study was conducted during the period from January 2019 to December 2019 in the Department of Microbiology and Virology at Sylhet MAG Osmani Medical College, Sylhet, Bangladesh. In the present study, samples of bottled water of different brands were collected from different shops and restaurants. Each sample filtered through a membrane filter and then placed on MacConkey agar media for total and fecal coliform count and 0.1 ml of water spread on nutrient agar media for heterotrophic plate count (HPC). **Results:** In the present study, 150 samples of bottled water of 15 brands were collected from different shops and restaurants. Out of 150 bottled water samples 11(7.33%) samples were found culture positive of 12 organisms. Among 12 isolates *Staphylococcus aureus* was prevalent which was 6(50%) followed by *Pseudomonas aeruginosa* and *Aeromonas species* which was 5(41.66%) and 1(8.33%) respectively. Out of 150 samples 81.81% and 18.18% contained HPC less than 500 CFU/ml and greater than 500 CFU/ml respectively. None of the bottled water contained total and fecal coliform. **Conclusion:** In conclusion bacteria is found in the commercially available drinking water of which *Staphylococcus aureus* and *Pseudomonas aeruginosa* are the most common bacteria. [Journal of Monno Medical College, December 2021;7(2):62-]

Keywords: Total coliform; fecal coliform; drinking water; commercially available

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Introduction

Water is an essential requirement of all life forms. A loss of just 4% of total body water leads to dehydration and a loss of 15.0% can be fatal; moreover, a person could survive a month without food but wouldn't survive 3 days without water¹. A satisfactory supply of safe drinking water is essential for health. According to WHO guidelines "safe drinking water" is defined as the water which does not represent any significant risk to health over a lifetime of consumption, including different sensitivities that may occur between life

stages². Safe water should be free from microorganisms and chemical substances³. The unavailability of safe drinking water is widespread and this has serious health implication. In developing countries, 80.0% of all diseases and over 30.0% of deaths are related to drinking water⁴. More than 40.0% of the world population does not have supply of safe drinking water. As a consequence consumption of unsafe drinking water, 3.4 million people die annually and 3,900 children daily in the world⁵.

Bangladesh is one of the most densely populated countries in

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the world and has plentiful water sources. These sources are being polluted continuously with different toxic trace metals, coliforms as well as other organic and inorganic pollutants⁶. As most of the population uses these water sources a wide number of pathogens can be transmitted by consuming this contaminated water. Hence, the main purpose of water testing is to know whether the water is contaminated by water borne pathogens or not. It is impossible to detect all types of water-borne pathogens, any of which may be present only intermittently⁷. The WHO guidelines for drinking water quality focus on fecal coliform bacteria. In addition to fecal pathogens, other microbial hazards may be of public health importance under special circumstances².

A subset of total coliform is fecal coliform which are the most appropriate indicators of fecal contamination⁸. The presence of fecal contamination is mostly evaluated using members of coliform group which are known as indicator organisms. These indicator organisms are not dangerous, but their presence indicates that fecal matter has entered the water supply, fecal bacteria have not been killed or removed by the purification process and that the supply is contaminated with dangerous intestinal pathogens⁹. Ideally drinking water or potable water should not only be safe but also pleasant to drink. It should be clear, colorless and devoid of disagreeable taste or smell. It should be free from pathogenic microorganisms and chemical substances⁸. In drinking water, unpleasant taste and odor may develop during storage and distribution due to microbial activity. Taste and odor may indicate some form of pollution of drinking water. It may therefore be an indication of the presence of potentially harmful substances¹⁰. So, it is necessary to test the quality of water and isolate the organisms before use.

There is worldwide concern over the quality of tap water, due to pollution, bacterial contamination, and the associated taste and odor¹¹. Therefore, people are turning to bottled water for safety and quality characteristics. In recent times demand for bottled water is growing day by day around the world and Bangladesh is no exception to it. The usage of bottled water in the world includes mainly North America (30%), Europe (29%), Asia (27%) and other parts of world (14%)¹². In Bangladesh the consumption of bottled and more especially, plastic container drinking water is dramatically increased for the past few decades¹³. The increase in demand for this bottled water is due to changes in fashion towards the consumption of designer water. The use of bottled water is also seen in shopping areas, fast food shops as well as restaurants, with a requirement for good drinking water. However, bottled water is not necessarily safe. Many studies have reported the presence of heterotrophic bacteria along with coliforms in bottled water in counts, exceeding national and international standards^{11,14-16}. Heterotrophic plate count (HPC) measurements are used to indicate the effectiveness of water treatment processes, thus as an indirect indication of pathogen removal¹⁷. Bottled water used by the people of developing countries like Bangladesh is also not free from germs and contamination. In Bangladesh a study conducted

by Khan et al¹⁸ on four different brands of bottled water revealed the presence of some bacterial isolates.

Currently, in a renowned newspaper of Bangladesh, a report was published where Bangladesh Standards and Testing Institution (BSTI) has cancelled the license of three bottled water brands after finding their water unsafe¹⁹. Therefore, water must be regularly monitored to ensure the supply of pure drinking water. Sylhet is an important divisional city of Bangladesh and a very attractive place for tourists. Due to natural resources and beauties, many tourists and business entrepreneurs are attracted to this city and many organizations choose this city for different programs and seminars. Thus, it is necessary that the city maintains a health friendly environment, safe water and healthy food. So, it is important that the available bottled water should be safe. This study was carried out to evaluate the bacteriological status of bottled water available at Sylhet city.

Methodology

This cross-sectional survey was conducted during the period from January 2019 to December 2019 in the Department of Microbiology and Virology at Sylhet MAG Osmani Medical College, Sylhet, Bangladesh. Ethical clearance was taken from the local Institutional Review Board (IRB).

Sample Collection: Bottled water of 15 different brands, 10 samples of 10 batches from each brand was purchased from different retail shops and restaurants. The sample was then transferred to the Microbiology and Virology Department where the samples were taken in a sterilized glass bottle of 200 ml size and then labelled for further investigations.

Enumeration of heterotrophic plate count by spread plate method: The heterotrophic plate count of all water samples was determined by spread plate method. 0.1(100µl) ml of water was measured by a micropipette and then spread on the nutrient agar plate by a sterilized spreader. The plate was then incubated for 24 hours at 37°C. Following incubation all the colonies were counted with the help of a magnifying glass and expressed as colony forming unit per ml of water.

Enumeration of total coliform count: It was done by membrane filtration method. In this method 100 ml of water was filtered through a sterile membrane filter of 47 mm diameter and 0.45µm of pore size. The filter membrane was then placed on MacConkey agar facing the grid upward and then incubated at 37°C for 24 hours.

Enumeration of fecal coliform count: It was done by the membrane filtration method. In this method 100 ml of water was filtered through a sterile membrane filter of 47 mm diameter and 0.45 µm of pore size. The filter membrane was then placed on MacConkey agar facing the grid upward and then incubated at 45°C for 24 hours.

Isolation and Identification of Organisms: All the organisms found on Nutrient and MacConkey agar plates were identified according to colony morphology, Gram's staining, motility and standard biochemical test.

Statistical Analysis: Analyses was performed with SPSS software, versions 22.0 (IBM SPSS Statistics for Windows,

Version 22.0. Armonk, NY: IBM Corp.). Categorical or discrete data were summarized in terms of frequency counts and percentages.

Results

A total of 150 bottled water samples were collected and studied in the Microbiology and Virology department of Sylhet MAG Osmani Medical College, Sylhet. The outcomes of the study were as follows.

Distribution of Water according to Heterotrophic Plate Count (HPC): The following table shows the distribution of HPC in bottled water. In this study out of 150 water samples 11(7.33%) revealed growth of heterotrophic bacteria, of which 9(81.81%) samples showed HPC less than 500 CFU/ml and the remaining 02 (18.18%) showed HPC more than 500 CFU/ml.

Table 1: Distribution of water sample according to HPC (n=11)

HPC	Frequency	Percent
<500 CFU/ml	9	81.8
>500 CFU/ml	2	18.2
Total	11	100.0

Frequency of isolated bacteria in Bottled water: This pie diagram shows the frequency of isolated bacteria in bottled water. Out of 150 bottled water 11(7.33%) showed growth of total 12 organisms. Among these 12 organisms *Staphylococcus aureus* was highly prevalent which was found in 6 (50%) cases, followed by *pseudomonas aeruginosa* in 5 (41.66%) cases and *Aeromonas* species in only 1(8.33%) case.

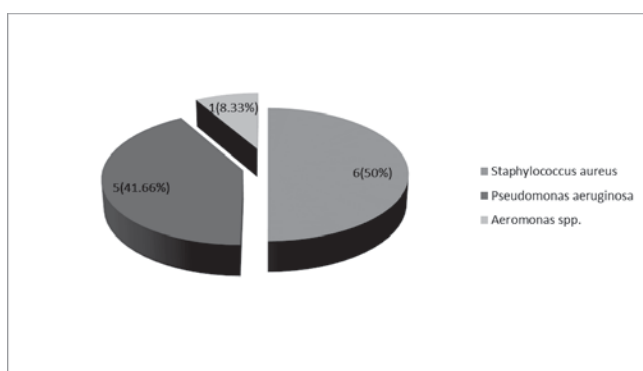


Figure I: Pie diagram showing the frequency of isolated bacteria in Bottled water (n=12)

Batch wise distribution of isolated bacteria in bottled water: This table shows the batch wise distribution of isolated bacteria in bottled water. Out of 15 brands the maximum growth was found in brand H and brand D followed by brand M, I, C, A and E.

Table 2: Batch wise distribution of isolated bacteria in bottled water

Sample ID	Batch No.	Isolated bacteria
BWD2	15	<i>Pseudomonas aeruginosa</i>
BWH3	14	<i>Staphylococcus aureus</i>
BWD3	A 10:01	<i>Staphylococcus aureus</i>
BWD4	07	<i>Pseudomonas aeruginosa</i>
BWM2	18	<i>Pseudomonas aeruginosa</i>
BW14	Aug-23	<i>Staphylococcus aureus</i>
BWC5	9:28	<i>Pseudomonas aeruginosa</i>
BWH5	17	<i>Staphylococcus aureus</i>
BWA6	679	<i>Aeromonas spp.</i>
BWE6	212	<i>Staphylococcus aureus</i>
BWH9	29	<i>Staphylococcus aureus,</i> <i>Pseudomonas aeruginosa</i>

BW= Bottled water: D, H, M, I, C, A, E = Brand names that were kept confidential

Discussion

Access to safe drinking water is a vital agent for the human being. Consumption of contaminated drinking water may cause various gastrointestinal diseases like diarrhea, dysentery, cholera, typhoid and paratyphoid fever. In Bangladesh, diarrheal diseases constitute one of the major causes of morbidity and mortality, particularly among children and infants. Nearly 26.0% of total deaths among under-5 children are due to diarrheal diseases alone in Bangladesh²⁰.

The bottled water market has steadily increased over the last decade and is now the largest category of the commercial beverage by volume sold in Bangladesh. A number of people now prefer bottled water rather than tap water for a number of reasons. In this study bacteriological analysis of 150 bottled water samples was tested are of better bacteriological characteristics according to WHO guidelines but some of the bottled water brand showed HPC more than 500 CFU/ml. Water for human consumption is required to be free from any bacteria that might pose a health risk. The presence of heterotrophic plate counts (HPC) more than 500 CFU/ml play a main role in the presence of potential pathogens in drinking water. It can be considered as one of the notable parameters to control the quality of water for human consumption. Therefore high HPC indicating a need for regular monitoring of the bottled water by the concerned authorities. As a result, bacteriological examination of water should routinely be carried out to monitor and control the quality and safety of drinking water.

The main objective of this study was bacteriological evaluation of bottled water available in Sylhet city. In this study 15 different brands of bottled water (10 batches from each brand) were investigated. Among 150 bottled water samples 11 (7.33%) were found culture positive. According to WHO guidelines for drinking water there should be no

coliform per 100 ml of water, therefore all the bottled water samples meet the WHO drinking water standard of zero coliform per 100 ml making them suitable for human consumption.

Coliform organisms may not always be directly related to the presence of fecal contamination or pathogen in drinking water, the coliform test is still useful for monitoring the microbial quality of drinking water. The presence of coliform bacteria in the water samples indicates the ineffectiveness or malfunctioning of the treatment process.

In this study all the bottled water samples were analyzed for fecal coliform. Fecal coliform is considered more as an indicator of fecal contamination because coliform can also exist in the environment whereas fecal coliform are found in intestinal tract of warm blooded animals.

In the present study none of the bottled water contained any fecal coliform. A study conducted by Aditi et al¹⁷ showed the complete absence of total and fecal coliform in all brands of bottled water. Whereas, a study was conducted in Bangladesh by Majumder et al²¹ showed the presence of 31.11% and 28.89% of total and fecal coliform among 45 samples. The absence of coliform bacteria in all brands of bottled water could be attributed to the better hygienic practices observed in the bottled water industry.

Further the current study revealed that the heterotrophic plate count (HPC) was very high in 2 sample of bottled water. According to WHO presence of high HPC concentration in drinking water could be the reason of some aesthetic problem²². Nevertheless HPCs are used as a good indicator of the overall bacteriological quality of production. There is no universal HPC measurement. But some authors use an HPC limit of 500 CFU/ml in case of drinking water. However based on the recommended standard limits of 500 HPCs per ml of drinking water by Canadian Drinking Water guidelines²³, 9 samples showed HPC <500 CFU/ml and 2 samples showed HPC > 500 CFU/ml among 150 water samples. In a study a total of 14 from 45 examined bottled water showed HPC >500 CFU/ml and 31 samples showed HPC <500 CFU/ml²¹.

The result of this study showed the presence of some microorganisms in the water samples. Out of 150 bottled water 11(7.33%) samples showed positive culture of 12 organisms. Among these 12 organisms *Staphylococcus aureus* 6 (50%) being the most common isolates followed by *Pseudomonas aeruginosa* 5 (41.66%) and *Aeromonas species* 1(8.33%). This finding is similar to the study conducted by Aditi et al. showed the presence of 12 *Staphylococcus* isolates among 20 samples¹⁶. Another study conducted by Igbeneghu and Lamikanra²⁴ as well as Jeena et al¹⁴ also showed the presence of *Staphylococcus aureus* in 27.9% and 13.4% respectively. Lack of personal hygiene among the personnel involved in the operations in some of the bottling facilities is indicated by the incidence of *Staphylococcus* as one of the predominant genera encountered in the samples.

In this study different brands of bottled water were tested in batches. Out of 15 brands of bottled water 7 brands revealed bacterial growth. Among these 7, brand H and D (three batches from each brand) showed different type of bacterial growth. A study conducted by Majumder et al²¹ also found variation in bacterial growth in different batches.

Conclusion

In conclusion culture of commercially available drinking water in Sylhet has shown the growth of bacteria. There are several bacteria detected of which *Staphylococcus aureus* and *Pseudomonas aeruginosa* are the most common bacteria. Since water is one of the important sources of infectious diseases, so water purification should be the most significant concern for ensuring public health.

References

1. Sargen M. Biological Roles of Water: Why is water necessary for life? sitn.hms.harvard.edu Accessed on 29 October 2019.
2. WHO. Guidelines for drinking water quality. World Health Organization, Geneva, Switzerland. First addendum 3rd ed, 2006.
3. Chakraborty P. A textbook of Microbiology, 3rd ed. India: New Central Book agency Pvt. Ltd; 2013.
4. Onweluzo JC, Akuagbazie CA. Assessment of the quality of bottled and sachet water sold in Nsukka town. Agro-Science Journal of Tropical Agriculture, Food, Environment and Extension 2010; 9(2):104-10.
5. WHO/UNICEF. Joint Monitoring Programme for Water Supply and Sanitation; Meeting the MDG drinking water and sanitation target: a mid-term assessment of progress. www.who.int>jmp04(accessed on 19 September 2019).
6. Hasan MK, Shahriar A, Jim KU. Water pollution in Bangladesh and its impact on public health. Elsevier 2019; 5
7. Parija SC. Textbook of Microbiology & Immunology. 2nd ed. India: Elsevier; 2012. 623-28.
8. Cheesbrough M. District Laboratory Practice in Tropical Countries, 2nd Ed. India: Cambridge University Press India Pvt. Ltd; 2012
9. Senior BW. Examination of water, milk, food and air. In: Collee JG, Marmion BP, Fraser AG & Simmons A, editors. Mackie & McCartney Practical Medical Microbiology. 14th ed. USA: Churchill Livingstone Inc; 1996.p.883-92.
10. WHO. Guidelines for drinking-water quality. World Health Organization, Geneva, Switzerland. Fourth edition incorporating the first addendum, 2017.
11. Semerjian LA. Quality assessment of various bottled waters marketed in Lebanon. Environmental Monitoring and Assessment 2011; 172(1-4):275-85.
12. Anonymous. "The Global Bottled Water Market." Beverage Marketing Corporation. Accessed on: 7 November 2019; Website: https://www.beveragemarketing.com/shop/assets/PDFs/BottledWatGlobal.pdf
13. Ahmed W, Yusuf R, Hasan I, Ashraf W, Goonnetilleke A, Toze S, et al. Fecal indicators and bacterial pathogens in bottled water from Dhaka, Bangladesh. Brazilian Journal of Microbiology 2013;44(1):97-103.
14. Jeena MI, Deepa P, Mujeeb MKM, Shanthi RT, Hatha AAM. Risk assessment of heterotrophic bacteria from bottled drinking water sold in Indian markets. International Journal of Hygiene and Environmental Health 2006; 209(2):191-96.
15. Khatoon A, Pirzada ZA. Bacteriological quality of bottled water brands in Karachi, Pakistan. Biologia (Pakistan) 2010; 56(1&2):137-43.
16. Aditi FY, Rahman SS, Hossain MM. A Study on the Microbiological

- Status of Mineral Drinking Water. *The Open Microbiology Journal* 2017; 11:31-44.
17. Bartram J, Cotruvo J, Exner M, Fricker C, Glasmacher A. Heterotrophic plate count measurement in drinking water safety management. *International Journal of Food Microbiology* 2004; 92: 241-47.
18. Khan MR, Saha ML, Kibria AHMG. A bacteriological profile of bottled water sold in Bangladesh. *World Journal of Microbiology and Biotechnology* 1992; 8: 544-45.
19. Molla MAM, Sarkar A. Unsafe Bottled, Jar Water: BSTI acts against 10 brands. *The Daily Star*. 2019 Feb 27.
20. Rahman M, Alamgir AKM, Hafez A, editors. Rashid, Khabir, Hyder's Textbook of community medicine and public health. 5th ed. Bangladesh: MAH; 2012.
21. Majumder AK, Islam KM, Nite RN, Noor R. Evaluation of Microbiological Quality of Commercially Available Bottled Water in the City of Dhaka, Bangladesh. *Stamford Journal of Microbiology* 2011; 1(1):24-30.
22. WHO. Heterotrophic Plate Counts and Drinking-water Safety 2003.
23. Health Canada. Guidance on the use of Heterotrophic plate count in Canadian drinking water supplies. WWW.canada.ca (accessed on 20 December 2019)
24. Igbeneghu OA, Lamikanra A. The bacteriological quality of different brands of bottled water available to consumers in Ile-Ife, south-western Nigeria. *BMC Research Notes* 2014; 7:859

Indications and Post-Operative Complication among Primigravida with or without Episiotomy in the Management of Labor: A Comparative Study

Mollika FA¹, Rahman MM², Jahan T³, Farzin A⁴, Hossain M⁵, Das P⁶, Haque MM⁷

Abstract

Background: Episiotomy is given to reduce severe perineal tear and preserve better sexual function. **Objectives:** The main objective of this study was to assess the maternal and fetal condition in labor at term in primigravida with or without episiotomy. **Methodology:** This cross sectional descriptive study was done at DMCH from July to December 2014. 100 term primigravida who went spontaneously into labor, with average size baby were taken, where half were given episiotomy and half were delivered without it. Labor was conducted smoothly. Any complications faced with and without episiotomy were noted. **Results:** Duration of 2nd stage of labor was slightly longer in episiotomy group than in non-episiotomy group. In distribution of perineal tear, 3rd degree tear occurred 4% in both group but 2nd degree tear was found slightly higher without episiotomy. Para urethral trauma slightly higher without episiotomy and labial trauma was higher in episiotomy group. In case of associated complications, extension rates were slightly higher without episiotomy. Age and height had no effect on both episiotomy & non-episiotomy groups. **Conclusion:** No significant difference found in both group. Though done in small number of cases, it demonstrated that selective episiotomy should be encouraged than routine in primigravida. Further large scale study with long term follow-up are required to evaluate the result. [*Journal of Monno Medical College, December 2021;7(2):62-*]

Keywords: Indications; complication; episiotomy; labor; primigravida

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Introduction

Episiotomy is the surgical enlargement of the vaginal orifice by an incision on the perineum during the second stage of labor when the perineum has thinned out and fetal head is crowning¹. It is given to prevent untoward perineal tear. Although episiotomy is a common surgical procedures it was introduced without strong scientific evidence of its effectiveness². Reported rates of episiotomies around the world are 62.5% in USA³, 30% in Europe⁴ and with higher estimates in Latin America⁵. In Argentina³ episiotomy is a routine intervention in nearly all nulliparous and primiparous births. The concept that episiotomy prevent 3rd and 4th degree

perineal tear, protects pelvic floor-has been repeatedly disproved in some studies⁵. The suggested maternal beneficial effects of episiotomy are the reduction in the likelihood of third degree tears⁶⁻⁷, conservation of the muscle relaxation of the pelvic floor and perineum leading to improved sexual function and a reduced risk of fecal and or urinary incontinence. Being a straight, clean incision, an episiotomy is easier to repair and heals better than a laceration⁸⁻¹¹.

On the other hand, hypothesized adverse effects of routine use of episiotomy are extension of episiotomy either by cutting the anal sphincter or rectum or by unavoidable

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extension of the incision, narrowing of the introitus, vaginal prolapse, recto-vaginal fistula and fistula in ano¹², increased blood loss and hematoma¹³⁻¹⁴, pain and edema in the episiotomy region¹⁵, infection and dehiscence¹⁶⁻²⁰, dysperunia, increases the need for perineal suturing and thereby may cause complications in healing process at postpartum period, produces unnecessary pain and discomfort and has potentially harmful long term effects²¹⁻²³. So, keeping these points in mind this study was conducted to justify its routine use in uncomplicated primigravida and to assess whether it's necessary or not in primi gravida.

This study was done to assess the maternal and neonatal condition during labour at term in primigravida where labour was conducted with and without episiotomy. Furthermore, this study was to assess the amount of perineal laceration during delivery conducted with and without episiotomy, to assess any other lower genital tract laceration and to see any neonatal complications like birth asphyxia both with and without episiotomy.

Methodology

This was a comparative cross-sectional study conducted in Department of Obstetrics and Gynaecology at Dhaka Medical College and Hospital, Dhaka, Bangladesh (indoor only) over a period of 6 months from July 2014 to December 2014 for a period of six months. All pregnant women attending Dhaka Medical College Hospital and fulfil the inclusion criteria delivered during the study period were selected randomly. Analyses was performed with SPSS software, versions 22.0 (IBM SPSS Statistics for Windows, Version 22.0. Armonk, NY: IBM Corp.). Continuous data were summarized in terms of the mean, standard deviation, and number of observations. Categorical or discrete data were summarized in terms of frequency counts and percentages. For end points analysis, Chi-square test corrected by Fisher's exact test was used for categorical variables and an analysis of variance (Student t Test) for continuous outcomes. Baseline characteristics were presented by two groups.

Results

A total number of 100 women were recruited for this study of which 50 women were in the group of episiotomy and the rest of the 50 cases were non-episiotomy. The mean with the SD of the age was 24.16±5.259 years and 22.88±5.506 years in episiotomy and non-episiotomy group respectively. The mean height with the SD was 150.7±3.071 cm and 150.8±3.172 cm in episiotomy and non-episiotomy group respectively. The mean duration of 2nd stage of labour with the SD was 59±17.78 and 49±21.09 in episiotomy and non-episiotomy group respectively (Table 1).

Labial trauma was found more in episiotomy than non-episiotomy groups which was 12(24.0%) cases and 10(22.0%) cases respectively. Paraurethral trauma was found in 8(16.0%) cases and 10(22.0%) cases in in episiotomy and non-episiotomy groups respectively. The difference of the episiotomy and non-episiotomy groups were not statistically

significant (p=0.94) (Table 3).

Table 1: Age Statistics of the Patients in Both Group (Mean±SD)

Group	Age (Years)	Height (cm)	Duration of 2 nd Stage of Labour	BW of Babies
Episiotomy	24.16±5.259	150.7±3.071		2.8±0.27
Non-episiotomy	22.88±5.506	150.8±3.172		2.7±0.29

Table 2: Distribution of patients according to tear in both episiotomy & non-episiotomy group

Tear	Episiotomy	Non-episiotomy	Total	P Value
No Tear	20(40.0%)	20(40.0%)	40(40.0%)	
1st degree	20(40.0%)	18(36.0%)	38(38.0%)	
2nd degree	8(16.0%)	10(20.0%)	18(18.0%)	0.955
3rd degree	2(4.0%)	2(4.0%)	4(4.0%)	
Total	50(100.0%)	50(100.0%)	100(100.0%)	

Table 3: Distribution of Patients according to Genital Trauma in both groups

Types of Tear	Episiotomy	Non-episiotomy	Total	P Value
No Trauma	24(48.0%)	24(48.0%)	48(48.0%)	
Labial trauma	12(24.0%)	10(22.0%)	22(22.0%)	
Paraurethral Trauma	8(16.0%)	10(22.0%)	18(18.0%)	0.94
Ant. vaginal Wall Trauma	6(12.0%)	6(12.0%)	12(12.0%)	
Total	50(100.0%)	50(100.0%)	100(100.0%)	

Table 4: Distribution of the patients according to complications in both group

Complications	Episiotomy	Non-episiotomy	Total	P Value
No Complications	30(60.0%)	36(72.0%)	66(66.0%)	
Urinary Retention	2(4.0%)	4(8.0%)	6(6.0%)	
Hematoma	6(12.0%)	0(0.0%)	6(6.0%)	0.062
Extension	4(8.0%)	8(16.0%)	12(12.0%)	
Difficulty in defecation	8(16.0%)	2(4.0%)	10(10.0%)	
Total	50(100.0%)	50(100.0%)	100(100.0%)	

No complication was reported in 30(60.0%) cases and 36(72.0%) cases in episiotomy and non-episiotomy groups respectively. Urinary retention was found in 2(4.0%) cases and 4(8.0%) cases in episiotomy and non-episiotomy groups respectively.

Hematoma was recorded in 6(12.0%) cases only in episiotomy group. In case of associated complications, extension rates were slightly higher without episiotomy. The difference of the episiotomy and non-episiotomy groups were not statistically significant ($p=0.062$) (Table 4).

Discussion

In this study it is found that that in episiotomy group ($n=50$) mean age is 24.16 years and SD is 5.26; minimum age is 16 years and maximum age is 36 years. In non-episiotomy group ($n=50$), patients age also ranged from 16 to 36 years but mean age is 22.88 years and SD is 5.51. the findings correlate with the study of Sadia²³ who showed that age of the patients need to give episiotomy ranged from 20 years to 35 years. In another study²⁴, the mean age of the women selected for the episiotomy was 23.9 years (SD 3.5). Among them, 14.7% were 20 years and below, 84.6% were between 21 to 35 years and 0.7% were 36 years and above.

It has recorded the height in two groups like episiotomy given and episiotomy not given of patients. It has shown that in episiotomy group ($n=50$) mean height is 150.72 cm and SD is 3.07; minimum height is 145 cm and maximum height is 158 cm. In non-episiotomy group ($n=50$), patients height also ranged from 145 to 158 cm but mean height is 150.76 cm and SD is 3.17.

The current study showed the comparative duration in 2nd stage in between two groups (episiotomy given and episiotomy not given) of patients. It is showed that in episiotomy group ($n=50$) mean duration is 59 min and SD is 17.79; minimum duration is 35 min and maximum duration is 95 min. In non-episiotomy group ($n=50$), duration in 2nd stage ranged from 20 to 90 min but mean duration is 49 min and SD is 21.09. This study findings are shorter in comparison with other study²³⁻²⁶. They found that Maternal exhaustions said to occur when the mother fails to push after more than 2 hours of efforts. It has been observed that mothers are asked to push down for a long period of time from early second stage and this leads to maternal exhaustion. Our study demonstrates no significant relation between episiotomy or non-episiotomy with the duration of labour in primigravida.

The present study found birth weight in between two groups (episiotomy given and episiotomy not given) of patients. It is showed that in episiotomy group ($n=50$) mean birth weight is 2.80 kg and SD is 0.27; minimum birth weight is 2.40 kg and maximum birth weight is 3.40 kg. In non-episiotomy group ($n=50$), birth weight ranged from 2.30 to 3.40 kg but mean birth weight is 2.70 kg and SD is 0.29. These findings are almost similar with study of Sathyasekaran²⁴. The study shown that birth weight was below 2500 grams and it was much higher for birth weight between 2500 to 3500 grams and for more than 3500 grams, which comparable with this study.

The concept that episiotomy prevent 3rd and 4th degree perineal tear, protects pelvic floor-has been repeatedly

disproved in some studies²⁷. One systematic review has found that restricting episiotomy to specific fetal and maternal indications reduces rates of posterior perineal trauma but slightly increases the rate of anterior vaginal and labial trauma⁶. It is now recognized that routine episiotomy confers no benefits and that this operation should only be employed for specific indication.

Routine episiotomy to all women to avoid third and fourth degree perineal tears has been a practice in many developing countries. World Health Organization (WHO) has clear guidelines stating that liberal use of episiotomy has failed to reduce the rates of perineal tears¹. In our study, in episiotomy group, no tear was found in 20 (40%) patients, 1^o tear is found in 20 (40%) patients, 2^o tear is found in 8 (16%) patients and 3^o tear is found in only 2 (4%) patients. In non-episiotomy group, no tear was found in 20 (40%) patients, 1^o tear is found in 18 (36%) patients, 2^o tear is found in 10 (20%) patients and 3^o tear is found in only 2 (4%) patients. No statistical significant difference was found in between two groups ($p=0.955$). Another study finding showed that the prevalence of third degree perineal tears was 3.7% and there was no occurrence of fourth degree tears in both groups. However, selective mediolateral episiotomy was associated with an increased risk of periurethral and labial injury compared with the routine group (4.5% versus 0%). As a result of cooperation and compliance from all staff, the rate of episiotomy fell from 64% in 2006 to less than 20% in 2008, with no increase in the incidence of third- and fourth-degree tears²⁵.

This study shows the comparison of genital traumatic injury in between two groups (episiotomy and non-episiotomy). In episiotomy group, no trauma was found in 24(48%) patients, labial trauma was found in 12(24%) patients, paravental trauma was found in 8 (16%) patients and trauma in anterior ventral wall was found in only 6(12%) patients. In non-episiotomy group, no trauma was found in 24(48%) patients, labial trauma was found in 10 (20%) patients, paravental trauma was found in 10(20%) patients and trauma in anterior ventral wall was found in only 6(12%) patients. No statistical significant difference was found in between two groups ($p=0.939$).

Episiotomy is not totally free from complications like perineal pain, wound dehiscence and increased bleeding. The study found in episiotomy group, no complication was found in 30(60%) patients, Urinary retention was found in 2 (4%) patients, haematoma was found in 6 (12%) patients, extension was found in 8(16%) patients and Difficulties in defecation was found in only 4(8%) patients. In non-episiotomy group, no complication was found in 36(72%) patients, Urinary retention was found in 4 (8%) patients, no haematoma was found in any patients, extension was found in 4(8%) patients and Difficulties in defecation was found in only 6(12.0%) patients. No statistical significant difference was found in between two groups ($p=0.062$). However, despite the said benefits, multiple

studies has demonstrated significant complications associated with episiotomy, including anal sphincter laceration, fecal and urinary incontinence and dyspareunia. The large Argentine Episiotomy Trial Collaborative Group with 2606 participants reported significantly more third or fourth degree tear in the routine episiotomy group. It resulted in 15.5% more women with intact perineum and therefore obviates the need for suturing, risk of bleeding or hematoma formation, risk of episiotomy wound infection and cosmetically unacceptable scar.

Conclusion

In conclusion no significant difference found in both group. Though done in small number of cases, it demonstrated that selective episiotomy should be encouraged than routine in primigravida. Further large scale study with long term follow-up are required to evaluate the result. The finding of the present study and other large randomized trails in other countries states that routine use of episiotomy is not necessary in all primigravid. There is no doubt that the need for episiotomy in some situations when it simply can not be avoided and the benefits overweight the risks. So, use of episiotomy should be individualized and restricted on specific fetal and maternal indications in primigravida, not generalized.

References

- Johanson R. Obstetrics procedures. Dewhurst's textbook of Obstetrics & Gynaecology; 6th edition:208-10
- Carrolli G, Belizan J. Episiotomy for vaginal birth. Cochrane Database of Systematic Reviews 1999, Issue 3. Art.No.:CD000081
- Tricker SB, Banta HD. Benefits & risks of episiotomy: An interpretive review of the English language literature, 1860-1960
- Rockner G, Fianu-jonasson. Changed pattern in the use of episiotomy in Sweden; British Journal of Obstetrics & Gynaecology 1999; 95-105
- Mac Arthur C, Bick DE, Keighley MRB. Faecal incontinence after childbirth: British Journal of Obstetrics & Gynaecology 1997;104: 46-50
- Lisa B Signorello et al. Midline episiotomy & anal incontinence: retrospective cohort study. BMJ 2000;320:86-90.
- Lede R, Belizan JM, Carrolli G. Is routine use of episiotomy justified? AJOG 1996;174:1399-402
- Weber AM, Meyen L (2002). Episiotomy used in the united states, 1979-1997. Obstet Gynecol 100(6);1177-82
- Althabe F, Belizan JM, Bergel E (2002). Episiotomy rates in primiparous women in Latin America: Hospital based descriptive study. BMJ 324(7343):945-6
- Hartman K, Viswanathan M, Palmieri R, Gartlehner G, Thorpe J, Lohr KN. Outcome of Routine Episiotomy. a systemic review. JAMA 2005;293(17):2141-8
- Wooley RJ. Benefits and risks of Episiotomy. A Review of the English language literature since 1980. Obstet Gynaecol Surv 1995; 50: 806-35
- Sarefil R, Marechaud M, Magnin G, Comparison of blood loss during caesarean section and during vaginal delivery with episiotomy: J. Gynaecol Obstet Biol Reprod 1999;28:48-58
- Thorpe JM J, Bowes WAJ, Episiotomy can its routine use be defended? AMJ Obstet Gynaecol 1989.160:1027-30
- Thorpe JM J, Bowes WAJ, Episiotomy can its routine use be defended? AMJ Obstet Gynaecol 1989,160;1031-1033
- Fernando Althabe, Jose M Belizan, Eduardo Bergel. Episiotomy rates in primiparous women in latin America; Hospital Based descriptive study: British Medical Journal 2002;324:945-6
- Mc Condlish, Bowler U, Van Aster H, et al. A randomized controlled trial of care of perineum during second stage of normal labour. Br J Obstet Gynaecol;1998;105:1262-72
- Sleep J, Grant A, Gracia J et al. West Berkshire perineal management trial. British Medical Journal 1984;298:587-690
- Glanzener CMA, Abdullah M, Stroud P, et al. Post natal maternal morbidity, extent, causes, prevention and treatment, Br J Obstet Gynaecol, 1995;102:286-87
- Dutta DC. Operative obstetrics, Text book of Obstetrics; 6th edition
- Episiotomy, Obstetrics by Ten Teachers; 16th edition: 288
- Clemons JL, Towers JD, McClure GB, O'Boyle AI, Decreased anal sphincter lacerations associated with restrictive episiotomy use. AM J Obstet Gynaecol 2005;192:1620-1625
- Alber's, LL, et al. Factors related to Genital Tract Trauma in Normal spontaneous Vaginal Births. Birth 2006;33(2).94-100
- Saadia Z. Rates and indicators for episiotomy in modern obstetrics—a study from Saudi Arabia. Materia socio-medica. 2014;26(3):188
- Sathiyasekaran BW, Palani G, Iyer RH, Edward S, Dharmappal CD, Rani A, Stanly M, Kannan L, Varadarajan S. Population based study of episiotomy. Sri Ramachandra Journal of Medicine. 2007;1(2):9-14
- Fernandes S, Benjamin EE, Edwards G. Using evidence to reduce the rate of episiotomy in a Dubai hospital. Evidence-Based Midwifery. 2009;7(2):60-4
- Idris N. Routine Versus Selective Medio-Lateral Episiotomy For The Prevention Of Third Or Fourth Degree Lacerations In Nulliparous Women. Department Of Obstetrics And Gynecology, Malaysia.

Comparison of Serum Calcium Level among Normal Pregnancy and Preeclamptic Patients in Bangladesh

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Abstract

Background: Preeclampsia is one of the most common cause of maternal and fetal morbidity and mortality. The exact etiology is not known but it may be associated with alteration of serum calcium. **Objective:** The study was design to evaluate the serum calcium level in preeclampsia and normal pregnancy. **Methodology:** This cross-sectional study was carried out at the Department of Biochemistry at Mymensingh Medical College, Mymensingh, Bangladesh from July 2018 to June 2019 for a period of one year. The subjects were collected from Department of Obstetrics & Gynecology, Mymensingh Medical College Hospital, Mymensingh, Bangladesh. In group I (control) apparently normal healthy pregnant women aged between 20 to 40 years and gestational age more than 20 weeks were included. In group II (case) diagnosed preeclamptic patients aged between 20-40 years and gestational age more than 20 weeks were selected in this study. For laboratory investigations, required amount of blood was collected, processed and preserved for estimation of different biochemical parameters. **Results:** A total number of 120 respondents were recruited of which 60 participants were preeclamptic patients and 60 participants were healthy pregnant. Mean \pm SD of maternal age was higher 29.70 ± 4.02 in preeclamptic patients and lower 27.23 ± 4.40 in healthy pregnant. In this study, it was observed that mean serum calcium levels were 6.05 ± 0.82 and 9.20 ± 0.38 mg/dL in Group II (case) and Group I (control) respectively. A significant ($P < 0.05$) decrease in serum calcium levels were observed in preeclamptic patients (case) when compared to that of the normal healthy pregnant women. **Conclusion:** Analyzing the findings of the present study, significant alterations in serum calcium, help in the establishment of diagnosis of preeclampsia before appearance of its clinical manifestations. [*Journal of Monno Medical College, December 2021;7(2):62-*]

Keywords: Pregnancy; preeclampsia; calcium

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Introduction

Pregnancy is a biological stress associated with many complex and interrelated biochemical, physiological and anatomical alterations happening in the body. Biochemical parameters reflect these adaptive changes and are obviously distinct from the non-pregnant state¹. Pre-eclampsia is one of the most common complications of pregnancy. It is one of the most common causes of maternal and fetal morbidity. Clinically pre-eclampsia is characterized by a persistently

elevated blood pressure of greater than 140/90 mm Hg, proteinuria and oedema². Multiple hypotheses have been put forward to explain its occurrence. The basic pathophysiological mechanism is probably a failure of the trophoblastic invasion of the spiral arteries, leading to maladaptation of maternal spiral arterioles associated with an increased vascular resistance of the uterine artery and a decreased perfusion of the placenta³⁻⁵. Incidence of preeclampsia worldwide is around 5.0% to 10.0% of all

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pregnancies⁶.

Calcium is an important element as it is necessary for muscle contraction and neuronal activity⁷. The blood pressure changes evident in pre-eclampsia can be attributed to the change in serum calcium levels⁸. Serum calcium levels may also increase blood pressure by stimulating parathyroid hormone and renin release, which in turn increases intracellular calcium in smooth muscles, leading to vasoconstriction, increased vascular resistance and a rise in blood pressure in preeclamptic mother⁹⁻¹¹. However the role of serum calcium, in pregnant women are still being discussed. Thus, comparisons of serum calcium, level in normal pregnancy and preeclamptic women may help to identify whether the changes in the level of this nutrients are contributory to the causation of preeclampsia.

Methodology

Study Settings and Population: This cross-sectional study was carried out at the Department of Biochemistry at Mymensingh Medical College, Mymensingh, Bangladesh from July 2018 to June 2019 for a period of one year. The subjects were collected from Department of Obstetrics & Gynecology, Mymensingh Medical College Hospital, Mymensingh, Bangladesh. Group-I (control): 60 apparently normal healthy pregnant women aged between 20-40 years and gestational age more than 20 weeks selected as control in this study. Group-II (case): 60 diagnosed preeclamptic patients aged between 20-40 years and gestational age more than 20 weeks selected as case in this study. In both case and control groups, pre-existing hypertension before pregnancy from history, renal disease from history and other clinical findings or subjects taking any drugs containing calcium and magnesium for last 5 months-from history or drug that causes hyperuricemia and nephrotoxicity for last 5 months from history were excluded from this study.

Study Procedure: For the purpose of the study, subjects both normal pregnant and preeclamptic patients were collected from the antenatal obstetric ward of Mymensingh Medical College Hospital, Mymensingh. The study subjects were selected on the basis of inclusion and exclusion criteria. Their informed written consent were taken. Age, gestational age, occupation, socio-economic status, residential address, family history of diabetes, hypertension, drug history, height, weight and other relevant data were collected and recorded in a preformed data collection sheet. For laboratory investigations, required amount of blood was collected, processed and preserved for estimation of different biochemical parameters. Data were then processed and analyzed to draw a conclusion.

Statistical Analysis: All biochemical values were expressed as mean±SD (Standard deviation). Statistical significance of difference between two groups were evaluated by using Student's unpaired 't' test. All statistical analysis were done by using SPSS (Statistical Package for Social Science) version 21 windows package.

Results

A total number of 120 respondents were recruited after fulfilling the inclusion and exclusion criteria of which 60 participants were preeclamptic patients and 60 participants were healthy pregnant. Mean ± SD of maternal age was higher 29.70±4.02 in preeclamptic patients and lower 27.23±4.40 in healthy pregnant (Table 1).

Table 1: Distribution of Participant according to Maternal Age (Mean ± SD)

Group	Maternal Age (Years)	P value
Preeclamptic Patients	29.70±4.02	0.002
Healthy Pregnant	27.23±4.40	

In this study, it was observed that mean serum calcium levels were 6.05±0.82 and 9.20±0.38 mg/dL in Group II (case) and Group I (control) respectively. A significant (P<0.05) decrease in serum calcium levels were observed in preeclamptic patients (case) when compared to that of the normal healthy pregnant women. Analysis of mean serum calcium levels of study population were presented in figure I.

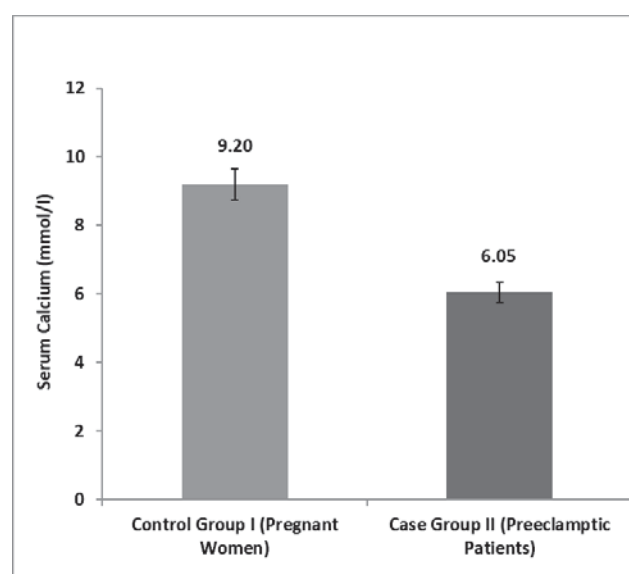


Figure I: Comparison of Mean Serum Calcium Levels in the Study Population

Discussion

Preeclampsia is the third common cause of maternal mortality in the world⁷. In Bangladesh the incidence of preeclampsia is alarmingly high, about 16.0% maternal death are associate with it⁸. Many clinical studies have shown the relationship between the aggravation of the hypertension and the change in maternal serum level of various minerals during pregnancy. Nutritional deficiencies are commonly seen during pregnancy where requirements

increase. This is observed more in pregnant women in developing countries with a diet deficient in essential minerals and vitamins.

A total number of 120 respondents were recruited after fulfilling the inclusion and exclusion criteria of which 60 participants were preeclamptic patients and 60 participants were healthy pregnant. Mean \pm SD of maternal age was higher 29.70 \pm 4.02 in preeclamptic patients and lower 27.23 \pm 4.40 in healthy pregnant. It has been well established that preeclampsia is one of the most common causes of maternal and fetal morbidity and mortality affecting about 5.0 to 7.0% of all pregnancies. In the present study, the result showed a highly significant ($P < 0.001$) decrease in serum calcium and magnesium levels, and highly significant increase in serum uric acid and creatinine levels in preeclamptic patients when compared with normal healthy pregnant women.

In the present study, mean \pm SD of serum calcium were found 9.20 \pm 0.38 mg/dL and 6.05 \pm 0.82 mg/dL in Group I (control) and Group II (case) respectively. There was highly significant ($P < 0.001$) decrease in serum calcium in preeclamptic patients when compared to that of the control group.

Conclusion

Analyzing the findings of the present study, significant alterations in serum calcium, level was observed in preeclamptic and normal pregnant patients. Therefore, routine examination calcium included in this study should be advised for the pregnant women attending the antenatal clinic. This may help in the establishment of diagnosis of

preeclampsia before appearance of its clinical manifestations.

References

1. James PR, Nelson-Piercy C. 2004. Management of hypertension before, during and after pregnancy. *Heart*, 2004;90(12):1499-1504
2. American college of obstetrics and gynaecology (ACOG) practice Bulletin. Diagnosis and management of preeclampsia and eclampsia. *Obstet gynaecol*. 2002; 99; 159-67
3. Sukonpan K, Phupong V. Serum calcium and serum magnesium in normal and pre-eclamptic pregnancy. *Arch Gynecol Obstet*. 2005; 273: 12-16
4. Cunningham FG, Leveno KJ, Bloom SL, Hauth JC, Gilstrap LC, Wenstrom KD. Hypertensive disorders in pregnancy. In: Cunningham FG, Leveno KJ, Bloom SL, Hauth JC, Gilstrap LC, Wenstrom KD (eds) *Williams Obstetrics*, 22nd edn. McGraw – Hill: New York 2005; 761 – 808
5. Walker JJ. Pre-eclampsia. *Lancet* 2000; 356: 1260-5
6. Cunningham, FG, Lenovo, KJ, Bloom, SL, Hauth, J, Rouse, D & Spong, , *Williams Obstetrics*, 23rd edn, Mc Graw-Hill, C 2010
7. Wagner, LK, 'Diagnosis and management of preeclampsia', *Am Fam Physian*, vol.70 no. 12, 2004; pp. 2317-2324
8. Rashid, KM, Rahman, M & Hyder, *Textbook of community medicine and public health*, 4th ed, S 2007; RHM publisher, Dhaka
9. Sukonpan K, Phupong V. Serum calcium and serum magnesium in normal and pre-eclamptic pregnancy. *Arch Gynecol Obstet*. 2005;273:12-16
10. Jain S, Sharma P, Kulshreshtha S, Mohan G, Singh S. The Role of Calcium, Magnesium and Zinc in Pre- eclampsia. *Biol Trace Elem Res* 2010;133:162-70
11. Punthumapol C, Kittichotpanich B. Serum calcium, magnesium and uric acid in pre-eclampsia and normal pregnancy. *J Med Assoc Thai* 2008; 91(7): 968-73
12. Mikhailidis DP, Ganotakis ES. Plasma albumin and platelet function: relevance to atherogenesis and thrombosis. *Platelets*. 1996;7(3):125-137

Prediction of Haemoglobin level and C-Reactive Protein for hospital Outcomes among Heart Failure Patients

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Abstract

Background: The level of haemoglobin and C-reactive protein (CRP) level are important among the heart failure patients. Objective: The purpose of the present study was to see the relationship of Hb and CRP level with different types of heart failure patients. Methodology: This cross-sectional study was conducted in the Department of Cardiac-surgery at National Institute of Cardiovascular Diseases (NICVD), Dhaka, Bangladesh from January 2019 to December 2019 for a period of one year. Patients of acute coronary syndrome who were presented within 12 hours of chest pain were included as study population. Study population were categorized in four groups according to the level of hemoglobin and C-reactive protein. Age, cardiovascular risks factor, history, family history of cardiovascular disease, treatment history and ECG were taken during admission. Blood sample was collected for baseline laboratory investigations like troponin-I, random blood sugar (RBS), blood urea, serum creatinine, lipid profile, hemoglobin & CRP level. Result: The mean age of the population was 52.18±8.88 years. Statistically non-significant mean age difference among the groups. Significant difference of mean left ventricular (LV) ejection fraction was found among the groups. (p=0.005). Maximum patient in group 1 (48.5%) had ejection fraction in the range of 40 to 50%, compare to group 2 (32%), group 3 (11.1%) and group 4 (5.8%). The heart failure was statistically significant in Killip class I (p=0.000) and Killip class II (p=0.000). Conclusion: In conclusion haemoglobin and CRP level of acute coronary syndrome patients is statistically significantly associated with different types of heart failure.

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Keywords: Relationship; haemoglobin level; CRP level; Heart Failure

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Introduction

Lower hemoglobin level is associated with higher mortality in part with myocardial infraction¹. Statistically significant increase in mortality was found in patient presenting with hemoglobin concentration lower than 10 gm/dL². Clinical data suggest that C- reactive protein may represent a valuable marker of risk in the short term as well³. There is rapidly growing evidence suggesting that atherosclerosis is in part an inflammatory condition. CRP is a serum marker of

inflammation which is easily and inexpensively measured⁴.

Hemoglobin and C-reactive protein can be measured in low cost. There are small number of study with hemoglobin and C-reactive protein. This study may help in management to reduce the morbidity and mortality in ACS. With decline in mortality due to infectious and diarrheal disease and death from perinatal cause, cardiovascular diseases particularly CHD will be major health problem and number one killer diseases in developing countries⁵.

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Anemia is common in heart failure and is associated with poor outcome. A large cohort of community-dwelling patient with CHF anemia is a common and an independent prognostic factor for mortality⁶. Lower level of hemoglobin is associated with higher short term mortality in patient with acute myocardial infarction. Specific therapeutic strategies in anemic patient with MI should be further considered². Anemia causes hypoxia-induced vasodilatation leading to increased sympathetic activity and cardiac output. This mechanism decreases coronary reserve, which is already limited in patients with CAD because of high extraction rate of oxygen in cardiac circulation⁷. Manifestation of myocardial ischemia may occur with only mild anemia. Elevated sympathetic activity was also repeatedly associated with worse outcome after acute myocardial infarction⁸. In the long term their alterations lead to gradual development of cardiac enlargement and left ventricular hypertrophy. This present study was undertaken to see the relationship of haemoglobin and CRP level with different types of heart failure patients.

Methodology

This cross-sectional study was conducted in the Department of Cardiac-surgery at National Institute of Cardiovascular Diseases (NICVD), Dhaka, Bangladesh from January 2019 to December 2019 for a period of one year. Patients of acute coronary syndrome who were presented within 12 hours of chest pain were included as study population. Patient who were admitted in CCU with clinical features of ischaemic type of chest pain of both sexes within 12 hours of onset of chest pain and diagnosed as ACS were included in this study. Patients with iron therapy before admission, blood transfusion before admission, History of previous or current haemostatic disorder, patient with recent bleeding, renal

insufficiency, patient admitted with chronic disease or inflammatory condition, patient with malignancy, history of PCI or history of CABG were excluded from this study. All the data were recorded in a data collection sheet. Study population were categorized in four groups according to the level of hemoglobin and C-reactive protein. Patients who had less than 10 gm/dL haemoglobin level and more than or equal to 12 mg/L of CRP were designated as group I. Patients who had more than 10 gm/dl haemoglobin level and less than 12 mg/L of CRP were designated as group II. Patients who had more than 10 gm/dl haemoglobin level and more than or equal to 12 mg/L of CRP were designated as group III. Patients who had less than 10 gm/dl haemoglobin level and less than 12 mg/L of CRP were designated as group IV. Age, sex, cardiovascular risks factor, history, family history of cardiovascular disease, treatment history and ECG were taken during admission. Blood sample was collected for baseline laboratory investigations. Permission from the ethical committee was taken. Continuous data were expressed as mean±SD. Categorical data were analyzed with Chi-square test, Student’s ‘t’ test was used for analysis of continuous variables. Comparison between groups was done by unpaired t-test.

Results

Majority of the study population were in the age group of 41 to 50 Years and 51 to 60 Years of age group which were 73(36.3%) cases in each followed by 61 to 70 Years which was 33(16.4%) cases. The mean age of the population was 52.18±8.88 years. Statistically non-significant mean age difference among the groups (Table 1).

Significant difference of mean left ventricular (LV) ejection fraction was found among the groups. (p=0.005). Maximum patient in group 1 (48.5%) had ejection fraction in the range of 40

Table 1: Age distribution of the study population

Age Group	Group Name				Total (%)
	Group 1	Group 2	Group 3	Group 4	
30 to 40 Years	11 (14.7)	6 (6.5)	5 (22.7)	0 (0)	22 (10.9)
41 to 50 Years	23 (30.7)	38 (41.3)	7 (31.8)	5 (41.7)	73 (36.3)
51 to 60 Years	28 (37.3)	33 (35.9)	8 (36.4)	4 (33.3)	73 (36.3)
61 to 70 Years	13 (17.3)	15 (16.3)	2 (9.1)	3 (25.0)	33 (16.4)

Mean±SD = 52.18±8.88; $\chi^2 = 9.56, P = 0.39$ NS; Group 1=Hb < 10 gm/dl CRP > 12 mg/L; Group 2=Hb > 10 gm/dl CRP < 12 mg/L; Group 3=Hb > 10 gm/dl CRP > 12 mg/L; Group 4= Hb < 10 gm/dl CRP < 12 mg/L

Table 2: Distribution of the study population by Ejection fraction

Ejection fraction	Group Name				Total (%)
	Group 1	Group 2	Group 3	Group 4	
< 40	4 (66.7)	1 (16.7)	1 (16.7)	0 (0.0)	6 (100.0)
40 to 50	48 (48.5)	32 (32.3)	11 (11.1)	8 (5.8)	99 (100.0)
51 to 60	13 (22.4)	38 (65.5)	5 (8.6)	2 (3.4)	58 (100.0)
>60	5 (20.8)	14 (58.3)	4 (16.7)	1 (4.2)	24 (100.0)

$X^2 = 23.736; P = 0.005$; Group 1=Hb < 10 gm/dl CRP > 12 mg/L; Group 2=Hb > 10 gm/dl CRP < 12 mg/L; Group 3=Hb > 10 gm/dl CRP > 12 mg/L; Group 4= Hb < 10 gm/dl CRP < 12 mg/L

Table 3: Distribution of the study population by types of heart failure

Heart Failure	Group 1	Group 2	Group 3	Group 4	P value
No HF	26(34.7%)	70(76.1)	13(59.1%)	8(66.7%)	0.357 ^{NS}
Killip I	1(1.3%)	0(0.0%)	0(0.0%)	0(0.0%)	0.000 ^S
Killip II	29(38.7%)	14(15.2%)	6(27.3%)	3(25.0%)	0.000 ^S
Killip III	12(16.0%)	5(6.5%)	2(9.1%)	1(8.3%)	0.99 ^{NS}
Killip IV	7(9.3%)	2(2.2%)	1(4.5%)	0(0.0%)	0.92 ^{NS}

X² = 31.406; P = 0.002; Group 1=Hb < 10 gm/dl CRP > 12 mg/L; Group 2=Hb > 10 gm/dl CRP < 12 mg/L; Group 3=Hb > 10 gm/dl CRP > 12 mg/L; Group 4= Hb < 10 gm/dl CRP < 12 mg/L

to 50%, compare to group 2 (32%), group 3 (11.1%) and group 4 (5.8%) (Table 2).

The heart failure was statistically significant in Killip class I (p=0.000) and Killip class II (p=0.000). Number of Killip class II was more in Group I (38.7%) than other groups (Table 3).

Discussion

Among the admitted patient in coronary care unit Mymensingh Medical College Hospital, a total of 201 patient diagnosed as acute coronary syndrome including unstable angina, non-ST elevation myocardial infarction and ST elevation myocardial infarction were included in the study after considering the inclusion and exclusion criteria. The patients were divided in to 4 groups group-I, group-II, group-III and group-IV according to level of hemoglobin and C-reactive protein level. Among the 201 patient 75 patients were in group I (Hemoglobin <10 gm/dl, CRP > 12 mg/L), 92 patients in group II (Hemoglobin >10 gm/dl, CRP <12 mg/L) 22 patients in group III (Hemoglobin > 10 gm/dl, CRP > 12 mg/L) 12 patients included in group IV (Hemoglobin: <10 gm/dl, CRP < 12 mg/L).

There was no significant difference of age between these groups. The mean age of the patients was 52.18±8.88 years. The highest percentage of Group-I were 51-60 years, and Group-II were 41-50 years, Islam and Majumder¹⁰ found the mean age of the ACS patients were 53.60±8.5 in Bangladeshi population. Lee et al¹¹ found the mean age of ACS patients were 53.2±10.6 years in Bangladeshi population which supported the finding of present study.

In this study maximum number of patients is Group-I had LV ejection fraction in the range of 40-50%, Group-I 48.5%, Group-II 32.3%, Group-III-11.1% and Group-IV 5.8%, respectively which was statistically significant. Heart failure (any Killip class) was significantly more in Group-I than Group-II, III, IV. Though the incidence of Killip class III and cardiogenic shock/Killip IV were not significant among the groups, but Killip class-II, Killip class- III and Killip class- IV heart failure were more in the patient with low hemoglobin and high CRP level.

Al-Ahmad et al¹² found that highly statistically significant and independent association between low hemoglobin concentration and adverse cardiovascular outcome among the patient with ACS. Their finding was worsening degrees of anemia were associated with progressively higher rates of

hypotension tachycardia and heart failure. Franklin et al¹³ found that the patient group with lower hemoglobin concentration on admission more likely suffered from cardiogenic shock, CCF and post infarction angina than the groups with higher hemoglobin level on admission.

Conclusion

In conclusion haemoglobin and CRP level of acute coronary syndrome patients is statistically significantly associated with different types of heart failure. Patient with ACS has variable levels of hemoglobin and C-reactive protein. It has been found that patient with lower hemoglobin and higher CRP level have adverse in hospital outcome including heart failure and death. So categorizations of patient with ACS on basis of hemoglobin and CRP level may help for risk stratification and management.

References

1. Sarnak MJ, Tighiouart H, Manjunath G, MacLeod B, Griffith J, Salem D, Levey AS. Anemia as a risk factor for cardiovascular disease in The Atherosclerosis Risk in Communities (ARIC) study. *Journal of the American College of Cardiology*. 2002;40(1):27-33
2. Lipšič E, van der Horst IC, Voors AA, van der Meer P, Nijsten MW, van Gilst WH, van Veldhuisen DJ, Zijlstra F. Hemoglobin levels and 30-day mortality in patients after myocardial infarction. *International journal of cardiology*. 2005;100(2):289-92
3. Biasucci LM. CDC/AHA workshop on markers of inflammation and cardiovascular disease: application to clinical and public health practice: clinical use of inflammatory markers in patients with cardiovascular diseases: a background paper. *Circulation*. 2004;110(25):e560-7
4. Franklin K, Goldberg RJ, Spencer F, Klein W, Budaj A, Brieger D, Marre M, Steg PG, Gowda N, Gore JM. Implications of diabetes in patients with acute coronary syndromes: the Global Registry of Acute Coronary Events. *Archives of Internal Medicine*. 2004;164(13):1457-63
5. Wu WC, Rathore SS, Wang Y, Radford MJ, Krumholz HM. Blood transfusion in elderly patients with acute myocardial infarction. *New England Journal of Medicine*. 2001;345(17):1230-6.
6. Ezekowitz JA, McAlister FA, Armstrong PW. Anemia is common in heart failure and is associated with poor outcomes: insights from a cohort of 12 065 patients with new-onset heart failure. *Circulation*. 2003;107(2):223-5.
7. McKechnie RS, Smith D, Montoyo C, Kline-Rogers E, O'Donnell MJ, DeFranco AC, Meengs WL, McNamara R, McGinnity JG, Patel K, Share D. Prognostic implication of anemia on in-hospital outcomes after percutaneous coronary intervention. *Circulation*. 2004;110(3):271-7.
8. Al Falluji N, Lawrence-Nelson J, Kostis JB, Lacy CR, Ranjan R, Wilson AC. Effect of anemia on 1-year mortality in patients with acute myocardial infarction. *American heart journal*. 2002;144(4):636-41.

9. Goncalves PA, Ferreira J, Aguiar C, Trabulo M, Silva JA, Seabra-Gomes R. Prognostic value of baseline hemoglobin in acute coronary syndromes. *Circulation* 2002;106(19):402-402
10. Islam AM, Majumder AA. Coronary artery disease in Bangladesh: A review. *Indian heart journal*. 2013;65(4):424-35
11. Lee PC, Kini AS, Ahsan C, Fisher E, Sharma SK. Anemia is an independent predictor of mortality after percutaneous coronary intervention. *Journal of the American College of Cardiology*. 2004;44(3):541-6.
12. Al-Ahmad A, Rand WM, Manjunath G, Konstam MA, Salem DN, Levey AS, Sarnak MJ. Reduced kidney function and anemia as risk factors for mortality in patients with left ventricular dysfunction. *Journal of the American College of Cardiology*. 2001;38(4):955-62
13. Franklin K, Goldberg RJ, Spencer F, Klein W, Budaj A, Brieger D, et al. Implications of diabetes in patients with acute coronary syndromes: the Global Registry of Acute Coronary Events. *Archives of Internal Medicine*. 2004;164(13):1457-63.

Socio-demographic Profiles and Different Percentages of Burn Associated with Inhalation Injury among Patients attended at Largest Teaching Hospital in Bangladesh

Hossain MS¹, Khan SJ², Tahnia NJ³, Hossain MS⁴, Islam R⁵

Abstract

Background: Variation of different percentages of burn occurs during inhalational injury. **Objectives:** The purpose of the present study was to assess the percentages of burn associated with inhalational injury with their demographic characteristics. **Methodology:** This cross-sectional study was carried out in the Department of Plastic Surgery at Dhaka Medical College and Hospital, Dhaka, Bangladesh from November 2014 to October 2015. The burn patients with inhalation injury were selected as per inclusion and exclusion criteria. The details of socio-demographic characteristics as well as the percentages of the burn were recorded in data collection sheet. **Results:** A total number of 40 patients were recruited for this study. The mean age of the patients was 28.4±9.0 years and the youngest and the oldest patients were 8 years and 70 years respectively. The ratio of male and female was 1.5:1. Most of the study population was secondary level which was 24(60.0%) cases followed by primary level and higher secondary which was 12(30.0%) cases and 3(7.5%) cases respectively. In terms of occupation 37.5% cases were housewife, 17.5% cases were day labourer and 12.5% cases were service holder. The mean percentage of burn was 43.0±12.7% with the minimum of 20.0% as well as maximum of 60.0%. **Conclusion:** In conclusion young adult male patients are mostly suffering from inhalational injury during high percent of burn. [*Journal of Monno Medical College, December 2021;7(2):37-41*]

Keywords: Sociodemographic profiles; percentages of burn; inhalation injury

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Introduction

Inhalation injury during burn involves exposure of the upper airway to heated dry air or steam¹. The lower airway, which is consisting of the tracheobronchial tree and lung parenchyma, is rarely injured by heated dry air because of reflexive vocal cord closure and evaporative cooling capacity. Direct thermal injury manifests similar to cutaneous thermal injury with a resultant inflammatory response and edema, Histamine release, signals by increasing complement at the site of injury, produces reactive oxygen and nitrogen species after formation of xanthine oxidase. These reactive species increases vascular permeability leading to extrusion of fluid and increased tissue oedema².

The inhalation injury is an important risk factor for increased morbidity and mortality in burn patients, and its incidence is approximately 10.0% to 20.0% among burn patients³. The mortality rate of burn patients is approximately 10.0% to 60.0% despite advances in burn management, and has been associated with age, burn area, and the presence of inhalation injury⁴. Inhalation injury interrupts the supply of oxygen to the body via massive swelling of the upper respiratory tract which results from direct thermal damage, chemical irritation of the lower respiratory tract, and injuries resulting from noxious gases such as carbon monoxide and cyanide⁵. Prolonged extrusion of proteinaceous exudate and associated tissue edema may result in the formation of airway casts and

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obstruction, similar to mucous plugging⁶. Smoke and inhaled toxins pose a particular risk to both upper and lower airways. Toxins such as ammonia, sulfur oxides, pyrolysates and chlorine gas, form strong alkalis and acids upon contact with moist mucosal walls. Fat-soluble agents such as aromatics activate alveolar macrophages and may initiate direct cellular damage resulting in hypermia of the airways, which can be visible shortly after injury⁷. If inhalants induce an inflammatory response in the pulmonary parenchyma, surfactant synthesis may be disrupted with further worsening of lung compliance. Loss of ciliary action in the respiratory mucosa can lead to increased pulmonary infections, ultimately resulting in irreparable damage to the respiratory tree. The purpose of the present study was to assess the percentages of burn associated with inhalational injury with their demographic characteristics.

Methodology

This was designed as descriptive cross-sectional study. This present study was conducted in the Department of Plastic Surgery at Dhaka Medical College & Hospital, Dhaka, Bangladesh from November 2014 to October 2015 for a period of one year. All the patients at any age with both sexes who were admitted in the Department of Plastic Surgery at Dhaka Medical College Hospital, Dhaka, Bangladesh with inhalation burn injury within 24 hours of burn were selected as study population. Socio-demographic variables like age, sex, occupation and education and clinical variables like type of burn and percentage of burn were recorded and through examination. Purposive sampling technique was applied to collect the sample. Patients having flame burn or scald with inhalation burn injury, total Burn Surface Area less than 60%, burn within 24 hours and adequately resuscitated patients were included in this study. Patients with poly trauma and life threatening conditions or patients with significant major co-morbid medical conditions like uncontrolled DM, stroke, severe bronchial asthma, chronic renal failure, endocrine disorders which alter electrolyte balance, patients with diagnosed psychiatric disorders, patient with electric burn & chemical burn, grossly contaminated burn wound or patients unwilling to take part in the study were excluded from this study. Inhalation injury was referred to damage to the respiratory tract or pulmonary parenchyma by heat or chemical irritants carried into the airways during respiration. The evaluation and assessment of inhalation injury was performed by researcher himself. Researcher had suspected the smoke inhalation injury in anyone who was trapped in a confined space or who lost consciousness during a fire, especially in the presence of large quantities of heavy smoke. Clinical manifestations was varied among victims, depending on their susceptibility to injury and degree of exposure. Injury might limited to upper airways like nasopharyngeal irritation, hoarseness, stridor, cough or may extend distally with tracheobronchial and alveolar destruction like dyspnoea, chest discomfort, haemoptysis. Inhalation injury was likely in the presence of facial and upper cervical burns, singed

eyebrows and nasal vibrissae, bronchial breath sounds, wheezing, rale, cyanosis and carbonaceous sputum. Researcher had evaluated patients presenting with inhalation injury for the extent of the disease and the degree of hypoxaemia. Patients at low risk of such and with no clinical symptoms had been usually observed for 4 to 12 hours and then had been discharged with a close follow up and instructions to return if symptomatic. Prior to commencement of the study, approval of research protocol was obtained from respective authority. After collection of data, all data were compiled in a master table first. Standard formulae were used and statistical analysis of the result were obtained by using window based computer software devised with Statistical package for Social Science (SPSS-23). The researcher took expert opinion for data analysis.

Results

A total number of 40 patients were recruited for this study after fulfilling the inclusion and exclusion criteria. Age distribution had shown that 22(55%) patients were between 16 to 30 years of age group which was highest in number followed by the age group of 31 to 45 years of age which was 11(27.5%) cases. However only 3(7.5%) cases were present in the age group of 0 to 5 years and 46 to 60 years in each. The mean age of the patients was 28.4±9.0 years and the youngest and the oldest patients were 8 years and 70 years respectively (Figure I).

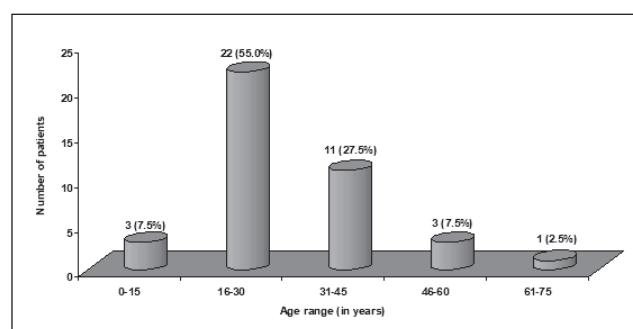


Figure I: Distribution of patients by age

In this study male was predominant than female which was 24(60.0%) cases and 16(40.0%) cases respectively. The ratio of male and female was 1.5:1 (Table 1).

Table 1: Gender Distribution of Study Population (n = 40)

Gender	Frequency	Percent
Male	24	60.0
Female	16	40.0
Total	40	100.0

Regarding the educational status most of the study population was secondary level which was 24(60.0%) cases followed by primary level and higher secondary which was 12(30.0%) cases and 3(7.5%) cases respectively. Only 1(2.5%) case was found in illiterate group. However no patients were found in below

primary and graduate with above (Table 2).

Table 2: Educational Status among the Study Population (n = 40)

Education	Frequency	Percent
Illiterate	1	2.5
Below Primary	0	0.0
Primary	12	30.0
Secondary	24	60.0
Higher Secondary	3	7.5
Graduate and above	0	0.0
Total	40	100.0

In terms of occupation 37.5% cases were housewife, 17.5% cases were day labourer and 12.5% cases were service holder. However, 10.0% cases were rickshaw pullers and business in each. Farmer and students were also reported as a case of inhalation injury patients (Table 3).

Table 3: Occupational Status among the Study Population (n = 40)

Education	Frequency	Percent
Business	4	10.0
Service	5	12.5
Day labourer	7	17.5
Farmer	2	5.0
Rickshaw puller	4	10.0
Student	3	7.5
Housewife	15	37.5
Others	0	0.0
Total	40	100.0

The highest 13(32.5%) patients had 51% to 60% of burn which was highest followed by 31.0% to 40.0%, 41.0% to 50.0% which were 11(27.5%) cases and 8(20.0%) cases respectively. The mean percentage of burn was 43.0±12.7% with the minimum of 20.0% as well as maximum of 60.0% (Figure II).

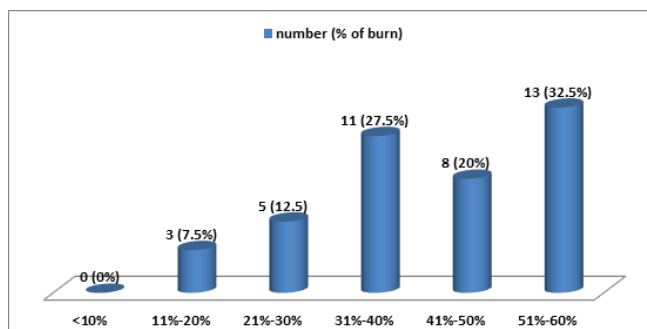


Figure II: Percentage of burn associated with inhalation injury

Discussion

For the clinician, the diagnosis of inhalation injury is a somewhat subjective decision based largely on a history of smoke exposure in a closed space⁸. Physical findings including facial injury, singed nasal hairs, soot in the proximal airways, carbonaceous sputum production and changes in voice may help support the diagnosis. These findings may be confirmed by diagnostic studies including fiberoptic bronchoscopy, typically performed within 24 hours of admission. History includes mechanisms of exposure such as flame, electricity, blast injury, steam or hot liquid, quality of inhaled irritants (house fire or industrial toxins) and duration of exposure with further complications caused by loss of consciousness or physical disability⁹. Physical examination may include findings such as visible injury to the respiratory tract, airway edema or evidence of pulmonary parenchymal damage and dysfunction.

Diagnostic criteria for inhalation injury are complicated by heterogeneous presentation and distinguishing between exposure to inhaled irritants and injury based on heated gas exposure¹⁰. Progressive respiratory failure may not be directly proportional to the degree of smoke exposure. Such differences are likely due to composition of inhaled materials and differences in host response.

Multiple burn centers have demonstrated that patients with inhalation and burn injuries require increased fluid volumes during immediate resuscitation when compared to individuals with burn injury alone¹¹. Changes in lung compliance and airway resistance have also been proposed as predictors of outcome and scales for severity of inhalation injury. Scoring systems, based on bronchoscopic evaluation, have been used for inhalation injury and attempts to identify the relationship of this data to the development of Acute Respiratory Distress Syndrome have been made. Dries and Endorf¹² examine the degree of inhalation injury, PaO₂/FiO₂ ratio, and effects on fluid requirements during acute resuscitation.

Mackie¹³ and Palmieri³ stated that inhalation injury is generally defined as a direct thermal injury of the upper airway, chemical injury of the lower airway and/or an injury caused at the site of the fire by the inhalation of noxious gases. Palmieri³ and Saffle et al⁴ said in their study that the inhalation injury is an important risk factor for increased morbidity and mortality in burn patients, and its incidence is approximately 10.0% to 20.0% among burn patients.

Colohan⁵ stated that the mortality rate of burn patients is approximately 10.0 to 60.0% despite advances in burn management, and has been associated with age, burn area, and the presence of inhalation injury. Inhalation injury interrupts the supply of oxygen to the body via massive swelling of the upper respiratory tract (which results from direct thermal damage), chemical irritation of the lower respiratory tract, and injuries resulting from noxious gases such as carbon monoxide and cyanide. Palmieri³ said that accurate diagnosis and prompt treatment of inhalation injury

is essential for better prognosis, since inhalation injury is closely associated with the requirement of mechanical ventilation, secondary pneumonia, and acute respiratory distress syndrome. Inhalation injury is mainly diagnosed using a subjective history of smoke exposure in a closed space and delayed extrication. Physical findings such as singed facial hair, carbonaceous deposits in the oropharynx or sputum, facial burn, and voice change also help to diagnose inhalation injury.

This prospective observational study was carried out at Department of Plastic surgery, Dhaka Medical College & Hospital. As a specialized unit, patient comes here from different part of the country and other tertiary hospitals for better management. The present study was done to see the alterations of biochemical parameters in inhalation injury within 96 hours. This study was carried out from November, 2014 to October, 2015. In this study age distribution shows that 22 (55%) patients were between 16 - 30 years old. The mean age of the patients 28.4 (± 9.0) years and the youngest and the oldest patients were 08 and 70 years old respectively.

Male patients were predominant 24(60%) cases. Overall male to female ratio was 1.5:1.0. Secondary level educated comprised about one-sixth (60%) and primary level educated formed 30% of the patients. In terms of occupation 37.5 were housewife and 17.5% were day labourer and 10% were rickshaw pullers. In the study of You¹⁴ there was a total 192 burn patients who were suspected to have an inhalation injury. 152 were men and 40 were women. Mean age was 46.1 ± 13.8 years. In another study of Megahed et al¹⁵ there were 130 burn patients of which 61 cases were men and 69 cases were women. Their patient were $<10 - > 60$ years. But exact minimum and maximum age was not mentioned.

The present study shows the mean percentage of total burn surface area (TBSA) was $43(\pm 12.7)\%$. 13 patients (32.5%) had 51% to 60% TBSA of flame burn. Electric burn and chemical burn patients were excluded according to the exclusion criteria of this study. Al-Muhammadi and Azeez⁷ studied on patients suffering from flame and scald burn with total burn surface area between 20,0% to 35.0%. Gauglitz et al¹⁶ studied on two hundred forty two severely burned paediatric patients. Their average burn size was $56 \pm 1\%$ total burn surface area.

There are some limitations of this Study. This study was conducted in only one centre. So, this study did not reflect the total population of our country. Cases are included on suspicion of inhalation injury. But actual injury was not evaluated by bronchoscopy.

Conclusion

In conclusion young adult age group are most commonly suffering from inhalational injury due to burn, In this study male patients are predominant than female which is around double. Housewife are reported as the most commonly

occupational group presented as inhalational injury. Primary, secondary and higher educational level students are mostly reported as inhalational injury. In this study population mostly suffering from inhalational injury during high percent of burn. Multi-centered study can be adopted for better evaluation of the result. The study duration should be larger to get enough representative data.

References

1. Rong YH, Liu W, Wang C, Ning FG, Zhang GA. Temperature distribution in the upper airway after inhalation injury. *Burns*. 2011;37(7):1187-91
2. Rehberg S, Maybauer MO, Enkhbaatar P, Maybauer DM, Yamamoto Y, Traber DL. Pathophysiology, management and treatment of smoke inhalation injury. *Expert review of respiratory medicine*. 2009;3(3):283-97
3. Palmieri TL. Inhalation injury: research progress and needs. *Journal of burn care & research*. 2007 Jul 1;28(4):549-54
4. Saffle JR, Davis B, Williams P, American Burn Association Registry Participant Group. Recent outcomes in the treatment of burn injury in the United States: a report from the American Burn Association Patient Registry. *The Journal of burn care & rehabilitation*. 1995;16(suppl_3_pt_1):219-32
5. Colohan SM. Predicting prognosis in thermal burns with associated inhalational injury: a systematic review of prognostic factors in adult burn victims. *Journal of burn care & research*. 2010;31(4):529-39
6. Thorning DR, Howard ML, Hudson LD, Schumacher RL. Pulmonary responses to smoke inhalation: morphologic changes in rabbits exposed to pine wood smoke. *Human pathology*. 1982;13(4):355-64
7. Al-Muhammadi MO, Azeez HA. Some physiological changes in burn patients. *Medical Journal of Babylon*. 2011;8(3):303-19
8. Belenkiy SM, Buel AR, Cannon JW, Sine CR, Aden JK, Henderson JL, Liu NT, Lundy JB, Renz EM, Batchinsky AI, Cancio LC. Acute respiratory distress syndrome in wartime military burns: application of the Berlin criteria. *Journal of Trauma and Acute Care Surgery*. 2014;76(3):821-7
9. You K, Yang HT, Kym D, Yoon J, Cho YS, Hur J, Chun W, Kim JH. Inhalation injury in burn patients: establishing the link between diagnosis and prognosis. *Burns*. 2014;40(8):1470-5
10. Suzuki M, Aikawa N, Kobayashi K, Higuchi R. Prognostic implications of inhalation injury in burn patients in Tokyo. *Burns*. 2005;31(3):331-6
11. El-Helbawy RH, Ghareeb FM. Inhalation injury as a prognostic factor for mortality in burn patients. *Annals of burns and fire disasters*. 2011;24(2):82
12. Dries DJ, Endorf FW. Inhalation injury: epidemiology, pathology, treatment strategies. *Scandinavian journal of trauma, resuscitation and emergency medicine*. 2013;21(1):1-5
13. Mackie DP. Inhalation injury or mechanical ventilation: which is the true killer in burn patients?. *Burns: journal of the International Society for Burn Injuries*. 2013;39(7):1329-30
14. You K, Yang HT, Kym D, Yoon J, Cho YS, Hur J, Chun W, Kim JH. Inhalation injury in burn patients: establishing the link between diagnosis and prognosis. *Burns*. 2014;40(8):1470-5
15. Megahed MA, Ghareeb F, Kishk T, El-Barah A, Abou-Gereda H, El-Fol H, El-Sisy A, Omran AM. Blood gases as an indicator of inhalation injury and prognosis in burn patients. *Annals of burns and fire disasters*. 2008;21(4):192
16. Gauglitz GG, Finnerty CC, Herndon DN, Mlcak RP, Jeschke MG. Are serum cytokines early predictors for the outcome of burn patients with inhalation injuries who do not survive? *Critical Care*. 2008;12(3):1-8

Determinants, Monitoring and Defaulter Tracing of Patients under Anti-Tubercular Drugs: A Review

Sonia Islam Khan

Abstract

TB treatment is a long process and it is critical to maintain contact with patients throughout treatment to ensure successful outcomes. However, sometimes circumstances interfere with maintaining contact, so that these patients stop their medication or take their drugs irregularly, often resulting in development of drug resistance by the TB bacteria in the patient's body. Monitoring is the regular observation and recording of activities and results taking place in a programme. Follow up the patients throughout the course of anti-TB treatment is necessary by checking the results of sputum examinations and hence monitor their clinical response to treatment. Like any medical activity, TB programmes need continuous monitoring. To achieve this, patients need to be followed very strictly and the outcome of treatment needs to be clearly defined. The role of health worker is very important in ensuring patients are taking their drugs properly. This is called adherence to treatment. Part of the responsibility is to tell the patients very clearly not to interrupt their treatment and to look for side-effects of drugs and to seek help accordingly. This review was designed to describe the monitoring and defaulter tracing of patients under anti-tuberculosis treatment. [*Journal of Monno Medical College, December 2021;7(2):37-41*]

Keywords: Monitoring; defaulter tracing; anti-tuberculosis treatment

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Introduction

It is important to monitor all individuals with TB during treatment, both adults and children by checking that they are taking their medication properly during the intensive phase of treatment, and that they are periodically collecting their drugs during the continuation phase; this is called refilling their drugs¹. Monitoring with sputum examination is readily available only for patients with sputum smear-positive pulmonary tuberculosis and these are usually adults and older children. Routine monitoring of treatment response by chest X-ray is unnecessary and wasteful of resources because it is not readily available and also costly to the patient². But if patients with smear-negative TB and extra-pulmonary TB do not show clinical improvement, their symptoms do not

improve and there is no weight gain, or if patients get worse during or after anti-TB drug treatment, it must be referred such patients to a hospital for further evaluation. For such patients, it is essential to monitor the clinical symptoms and keep monitoring their weight over time³.

Monitoring of Patients

Sputum Smear-Positive Pulmonary TB: Sputum examination is required for diagnosis for all persons suspected of TB and is able to produce sputum; this test is also essential for follow-up of smear-positive TB individuals. The patient must be referred for testing at the times on this schedule⁴.

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Table 1: Monitoring of patients with sputum smear-positive pulmonary TB⁵

Time to refer patients	8 month treatment regimen	6 month treatment regimen
At time of diagnosis	All suspected TB persons	All persons suspected of having TB and producing sputum
At end of intensive phase (end of two months)	Smear-positive TB patient at diagnosis needs sputum examination at end of two months	Smear-positive TB patient at diagnosis needs sputum examination at end of two months
In continuation phase	Smear-positive TB patient at diagnosis needs sputum examination at month five	Smear-positive TB patient at diagnosis needs sputum examination at month five
At end of treatment	Smear-positive TB patient at diagnosis needs sputum examination at month eight	Smear-positive TB patient at diagnosis needs sputum examination at month six

Sputum smears at the end of the intensive phase: The majority of patients will have a negative sputum smear at the end of the intensive phase. If the sputum smear is still positive at this time, intensive phase treatment with the same four drugs 1 (RHZE) should be continued for four more weeks⁶. When the sputum smear is checked again after this extra period, it is unlikely still to be positive. The continuation phase should be continued even if the sputum smear after the extra four weeks of intensive phase treatment is still positive⁷.

Sputum smears in continuation phase: In eight month treatments, a positive smear at five months or any time after five months means treatment failure⁸. In six month treatments, a positive sputum smear at five months or any time after five months means treatment failure. The patient treatment category changes to Category II and the re-treatment regimen begins⁹.

Sputum smears on completion of treatment: If a patient has a negative sputum result at the end of treatment and one additional result at the end of two months, or at five months that is also negative the patient is defined as cured¹⁰.

Referral of Suspected TB Patients

Referring people suspected of having TB should be done specifically those with a cough for two or more weeks to a health institution for TB diagnosis¹¹. Referrals can come about in other ways. Sometimes a doctor may diagnose TB and then refer the patient with the drugs to your health facility to continue their treatment under your supervision. Those patients need registration at the level and continued follow-up needs to be put into place. If a patient is very sick or has major treatment side-effects, it may be necessary to refer the patient to a doctor or to a hospital for care of the acute problem. However, sometimes such a patient then believes that, because of the treatment received at the hospital, there is no need to come for regular TB treatment and he/she may then discontinue treatment¹²⁻¹³. When a referral of this type comes, discuss the situation with the patient and their family and emphasize the need to return to health facility to continue treatment after discharge from the doctor or hospital.

Coordinating Transfers during Moving

If a registered patient plans to move out of the area permanently, find out when and where the patient is moving and identify an appropriate treatment facility in the new area. In discussions with the patient in the period before the move, stress the need to continue treatment and the importance of reporting to the new health facility¹⁴. Make sure that the patient understands that to be cured, he/she must continue taking all of the required drugs for the entire time required. If necessary, provide self-administered doses for several days until the patient has reached their new home. If it is not received confirmation from the receiving health facility, contact the facility to ask whether the patient has reported for treatment. If not, tell the facility where to locate the patient. The District TB Coordinator will ask whether there is any new information about the patient. If the transfer is never confirmed i.e. the patient never reports to the new facility, the patient's treatment outcome will be recorded as a transfer out, transfer TB patient to other health facility¹⁵. If the transfer is confirmed, at the appropriate time, ask the new health facility where the patient was referred about his or her treatment outcome, so that you can record it on the patient's registration.

Discussion with Health workers during Moving

It is important to contact with the District TB Coordinator, this is the person who controls and coordinates TB activity at district level¹⁶. If the patient originates from the district, it is the district's responsibility to find the treatment outcome for the patient. So, it is the responsibility of the originating health facility to find out about the treatment outcome for a patient who transfers out. When a patient has been received from another health facility, make a note that this is a transferred-in patient to remind to report the treatment outcome to the originating health facility. When any patient completes treatment, check to see whether the patient has been transferred in. If so, contact the originating health facility and report the treatment outcome¹⁷.

Arrangements for patients During Travelling

If a patient will be travelling or absent for longer than two weeks, identify a health facility in the area where the patient's

treatment can be followed¹⁸. During their regular treatment visits, ask patients to inform if they have plans to travel, so that arrangements can be made to continue treatment without interruption. If a patient is to travel out of the area, or will be unable to have directly observed treatment for one or more days, provide instructions and drugs for a short period of self-administration; if necessary, you may provide drugs for up to two weeks. If the patient's drugs are not pre-packaged, prepare a separate packet of drugs for each day that the patient will be absent¹⁹. Give the patient careful instructions, in conversation with him/her and in writing, about how to take the drugs. Point out the number and colour of the drugs in each day's packet and tell the patient to take the drugs at the same time each day, take the pills with water and take all of the drugs for the day together.

Ways of tracing defaulters' patient

Conducting Home Visits: Give the patient the missed doses one day at a time an extra dose on any days do not give. If a patient misses a dose of anti-tuberculosis medication during intensive treatment for more than 24 hours, find the patient by making a home visit within the next couple of days. Use the address on the patient's TB registration to find the patient²⁰. When you go on the home visit, take the patient's

drugs with you. If the patient is not at home, ask the family or neighbours where the patient is and see if you can find out why treatment was missed. If necessary, visit the contact person listed on the patient's TB registration. When the patient is found, talk to the patient and the family about the problem that caused the interruption in treatment²¹.

Home visits for patients who fail to collect drugs for self-administration: A patient on a self-administered continuation regimen may fail to collect the drug supply on the appointment day²². If a patient does not come for the drugs within a week, visit the patient's home to find the patient, deliver the drugs and determine the problem. Try to solve any problems after discussion with the patient.

Tracing Patients who Interrupt Treatment

If you cannot locate a 'defaulter' patient who has interrupted treatment at the home address recorded on the TB unit register form, try to find the patient through the contact person listed on the card²³. Information will be seek and leave messages with neighbours and relatives or at the patient's workplace and try to find out whether the patient is just temporarily missing or has permanently moved. If the patient has moved, try to find out the new location and notify the District TB Coordinator¹³. In this way the patient may

Table 1: Monitoring of patients with sputum smear-positive pulmonary TB⁵

Examples of possible causes of missed doses	Possible solutions
Coming to the health facility is inconvenient.	Identify a convenient community TB treatment supporter.
Patient dislikes coming to the health facility because of the long queue.	Make arrangements so that TB patients do not have to wait in a queue. For example, let them enter through a back or side door.
Supervisor at work kept the patient late.	Offer to talk with the supervisor and explain the importance of the treatment, or Identify a community TB treatment supporter at work.
Patient had troublesome side-effects.	Give appropriate advice for side effects, or Refer the patient for further evaluation.
Patient had difficulty swallowing because of pain (due to oral ulceration, common in AIDS patients).	Give appropriate advice and refer patient as necessary for further evaluation.
Patient cannot leave small children at home and is tired of bringing them to the health facility.	Suggest that a family member or neighbour watch the children. Remind family members/neighbours that the patient must continue treatment to protect their health, and particularly the health of the children. If possible, identify a community TB treatment supporter closer to the patient's home.
The patient may simply need to be forced to comply and be reminded of the reasons not to interrupt treatment.	Remind the patient of the need to take all of the recommended drugs together, for the recommended time, to be cured. Even after beginning to feel better, the patient must continue taking the drugs for the entire period of treatment. Motivate the patient with statements such as the following: • TB can be cured if you keep coming for the medicine, and then you will not have to worry about it any more. • You only have 10 more doses to take every day. After that, you will come less often. • These are the safest, most effective drugs available to treat TB anywhere in the world. • Almost all patients who take their medicines as recommended are cured. • If you keep taking your medicine, you will not spread TB to your family.

eventually be transferred to the care of another health facility.

Conclusion

In conclusion failure of anti-TB drug intake should be overcome. If a patient is found and resumes treatment within a month, the same treatment should be continued and should be prolonged to make-up for the missed doses. If treatment is interrupted for between one and two months, the patient will need a new sputum examination before the appropriate treatment can be determined. If treatment is interrupted for two months or more, the patient has defaulted.

References

- Mishra GP, Gandhi SA, Ghorpade SV. Study of Various Causes of Treatment Interruption Among Tuberculosis Patients. *Indian Journal of Basic and Applied Medical Research* 2016;6(1):382-386
- Mishra G, Mulani J. Tuberculosis prescription practices in private and public sector in India. *Natl J Integr Res Med*. 2013;4(2):71-8
- Jaggarajamma K, Muniyandi M, Chandrasekaran V, Sudha G, Thomas A, Gopi PG, Santha T. Is migration a factor leading to default under RNTCP? *Indian Journal of Tuberculosis*. 2006;53(1):33-6
- Basa S, Venkatesh S. Study on default and its factors associated among Tuberculosis patients treated under DOTS in Mayurbhanj District, Odisha. *Journal of Health Research and Reviews*. 2015 Jan 1;2(1):25
- Dye C, Scheele S, Dolin P, Pathania V, Raviglione MC. Consensus statement. Global burden of tuberculosis: Estimated incidence, prevalence, and mortality by country. *WHO Global Surveillance and Monitoring Project*. *JAMA* 1999;282:677-86
- World Health Organization: Resolution WHA 44.8, Tuberculosis Control Programme. Forty-fourth World Health Assembly Resolutions and Decisions Geneva 1991
- Balasubramanian R, Garg R, Santha T, Gopi PG, Subramani R, Chandrasekaran V, Thomas A, Rajeswari R, Anandakrishnan S, Perumal M, Niruparani C. Gender disparities in tuberculosis: report from a rural DOTS programme in south India. *The International Journal of Tuberculosis and Lung Disease*. 2004 Mar 1;8(3):323-32
- TB India. RNTCP status report, RNTCP, Central TB Division. New Delhi: Ministry of Health and Family Welfare, Government of India; 2006
- Vijay S, Balasangameshwara VH, Jagannatha PS, Saroja VN, Kumar P. Defaults among tuberculosis patients treated under DOTS in Bangalore city: A search for solution. *Ind. J Tub*. 2003;50:185-95
- Balasangameswara SV, Jagannatha P, Saroja V, Kumar P. Defaults among tuberculosis patients treated under DOTS in Bangalore city: a search for solution. In 57th National Conference on Tuberculosis and Chest Diseases-Goa 2002 Sep (p. 29).
- Gopi PG, Chandrasekaran V, Subramani R, Narayanan PR. Failure to initiate treatment for tuberculosis patients diagnosed in a community survey and at health facilities under a DOTS programme in a district of South India. *Indian Journal of Tuberculosis*. 2005;52(3):153-6.
- Santha T, Garg R, Frieden TR, Chandrasekaran V, Subramani R, Gopi G, Selvakumar N, Ganapathy S, Charles N, Rajamma J, Narayanan P R. Risk factors associated with default, failure and death among tuberculosis patients treated in a DOTS programme in Tiruvallur District, South India, 2000. *The International Journal of Tuberculosis and Lung Disease*. 2002 Sep 1;6(9):780-8.
- Kaona FA, Tuba M, Siziya S, Sikaona L. An assessment of factors contributing to treatment adherence and knowledge of TB transmission among patients on TB treatment. *BMC Public Health* 2004;4:68
- Chandrasekaran V, Gopi PG, Subramani R, Thomas A, Jaggarajamma K, Narayanan PR. Default during the intensive phase of treatment under DOTS programme. *Indian J Tuberc* 2005;52:197-202.
- Chatterjee P, Banerjee B, Dutt D, Pati RR, Mullick AK. A comparative evaluation of factors and reasons for defaulting in TB treatment in the states of W. Bengal, Jharkhand and Arunachal Pradesh. *Indian J Tuberc* 2003;50:17-22
- Pandit N, Choudhary SK. A study of treatment compliance in directly observed therapy for tuberculosis. *Indian J Community Med* 2006;31:241-3
- Sukumar P, Venugopal KP, Manjooran RS. A social study of compliance with DOTS. *Indian J Tuberc* 2002;49:205-7
- Kusagur MS. Characteristics of adult patients who were Lost to Follow Up from ART programme and reasons for it-A study at Davangere, Central Karnataka. *Int J Biol Med Res*. 2013;4(3):3375-8.
- Joshi A, Hussain MA, Hasan H, Biswas R. Programmatic Contentions Culminating Into Default from Anti Tuberculosis Treatment in an Urban Environment. *Indian J. Prev. Soc. Med*. 2010;41:161-9.
- Jain NK, Bajpai A, Jain S. Outcomes of category III and I in immunocompetent patients of tuberculous lymphadenopathy treated in revised national tuberculosis control programme. *Lung India: Official Organ of Indian Chest Society*. 2010 Jul;27(3):115.
- Moonan PK, Quitugua TN, Pogoda JM, Woo G, Drewyer G, Sahbazian B, Dunbar D, Jost KC, Wallace C, Weis SE. Does directly observed therapy (DOT) reduce drug resistant tuberculosis?. *BMC public health*. 2011 Dec;11(1):1-8.
- Krasniqi S, Jakupi A, Daci A, Tigani B, Jupolli-Krasniqi N, Pira M, Zhjeqi V, Neziri B. Tuberculosis treatment adherence of patients in Kosovo. *Tuberculosis research and treatment*. 2017 Nov 5;2017.
- Mathew TF. Effectiveness of Knowledge Based Approach for the Improvement of Patient Adherence and Reducing the Severity of Adverse Drug Reaction in Anti Tubercular Therapy (Doctoral dissertation, KMCH College of Pharmacy, Coimbatore).

A 20-year Male Presented with Gender Dysphoria: A Case Report

Hossain MJ¹, Islam K²**Abstract**

Gender dysphoria is a new diagnosis added to the Diagnostic and Statistical Manual of Mental Disorders (DSM)-5 to describe the distress experienced by patients previously diagnosed with gender identity disorder. We present a 20-year-old male student who has been diagnosed with gender dysphoria according to DSM-5 guidelines. The purpose of this case report was to explain the fascinating evolution of symptoms in a case of gender dysphoria with difficulties adjusting to the assigned sexual role and management plan. [*Journal of Monno Medical College, December 2021;7(2):37-41*]

Keywords: Gender dysphoria; male; Diagnostic and Statistical Manual of Mental Disorders**Received:** 7 September 2021; **Accepted:** 5 October 2021; **Published:** 1 December 2021**Introduction**

Gender dysphoria is a desire to live as a part of the opposite sex, which often accompanies a sense of discomfort and inappropriateness with one's own anatomic sex as per ICD 10th edition¹. The DSM-5 has included significant distress that should be considered when diagnosing gender dysphoria². Both the DSM and the ICD consider gender dysphoria as a psychiatric disorder.

The prevalence of gender dysphoria is higher in males than females. In children, it ranges from 2:1 to 4.5:1, while in adults it is from 1:1 to 6.1:12. In females, the onset of gender dysphoria usually occurs during childhood. Data shows that there are also various co morbid psychiatric disorders with gender dysphoria such as anxiety disorder, depressive disorder, substance abuse disorder and personality disorder³. A number of etiological factors have been proposed such as genetic, prenatal sex hormone, atypical sexual differentiation of their brain and psychosocial problem.

A combined approach, using psychotherapy and pharmacotherapy, is often useful in the treatment of gender disorder. Magnus Hirschfeld, a physician from Berlin, became the first to provide specialized care for people with gender dysphoria in 1918. He helped them live according to

their natural state instead of their assigned sex⁴. The purpose of this case report was to explain the fascinating evolution of symptoms in a case of gender dysphoria with difficulties adjusting to the assigned sexual role and management plan.

Case Presentation

A 20-year-old young male student from Uchutia Manikganj, was sent to the psychiatry outpatient department by a dermatologist at Monno Medical College Hospital. He belonged to middle socioeconomic group and studied in honours in a reputed university, eldest among two siblings. According to the patient's statement, he was very interested in having sex reassignment surgery. According to his extensive biography, he had uncomfortable with his male gender since the age of roughly ten years and had believed that he should have been a female. He said that he had been aware of his gender dysphoria since he was a teenager, but that because he came from a religious household, he had always been unable to voice his desire to change. He liked to dress up in female clothes and was only interested in doing housework such as cleaning and cooking. When he was 15 years old, he developed a secondary sexual character, which made him uncomfortable. In the beginning of the year, he began shaving

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twice a day to keep his face clean, and he also began wearing make-up to appear female. He was also attracted to male peers during this time, but not to female friends. He said that he tried to tell his parents about it, but that his mother would emotionally force him back into being a male. Due to his feminine behaviour and desire to change his sex, his parents were furious. There were no abnormalities on clinical evaluation in terms of his external genital organs. During the mental state evaluation, he was dressed femininely, and eye contact was made and was maintained. There was no outlandish behaviour. There was no aberration or incoherence in the flow or quantity of his speech. His mood was depressed, and affected irritable. There was no trouble with thought or perception, and insight was partially present. His laboratory testing, which included a complete blood count, random blood sugar level, liver and kidney function tests, serum testosterone, follicle stimulating hormone, luteinizing hormone, thyroid function tests, serum prolactin, and an ultrasonography of the entire abdomen, all came back normal. According to the DSM 5, we have diagnosed him with gender dysphoria. We prescribed an antidepressant and scheduled psychotherapy session for him.

Discussion

The important features of gender dysphoria are a continuous dissatisfaction with one's gender, as well as a desire to shed one's sexual characteristics and acquire those of the other gender⁵. Gender identity disorder (GID) was the diagnostic diagnosis used until the DSM-5 was released in 2013. To avoid the stigma, the illness was renamed.

Patients with gender dysphoria have been involved in disagreements, confrontations, and adjustment difficulties with family members since the adolescent period due to chronic dissatisfaction with his biological sex. Patient wore feminine clothing, make-up, and feminine inner garments at all times. Our patient has been diagnosed with gender dysphoria because of displeasure of his own sex; he plans to undergo sex reassignment surgery and hormone treatment.

Study shows that persons with gender dysphoria have a very high lifetime prevalence of psychiatric disorders. Physicians should be aware of any psychiatric disorders that are co-morbid with gender dysphoria since their management priorities will be influenced by them. By reducing psychiatric disease, peer and social ostracism can be minimized⁷⁻⁹.

The existence of depressed symptoms and significant evidence of increased suicidal idea among people with gender dysphoria should be worrying, and efforts should be

taken to address the suicide risk and behaviour as soon as possible⁶. Psychotherapy to examine gender issues, hormone medication, and surgery are all options for adults with gender dysphoria¹⁰. The use of psychotherapy to return a gender dysphoric to their assigned sexual role had poor results, according to the data¹¹. Furthermore, mental disorders such as depression and anxiety must be treated properly since they cause considerable morbidity and impairment in functioning.

Conclusion

Psychiatric co morbidities, as well as suicide ideation and attempts, are common among gender dysphoric patients. Regardless of treatment status, primary care clinicians must be aware of and rigorously examine these risks. A multidisciplinary, collaborative effort can assist in the care of this vulnerable population and aid to prevent terrible outcomes.

References

1. World Health Organization. International Classification of Diseases, Clinical Description and Diagnostic Guidelines. 10th ed. Geneva: World Health Organization; 1992
2. American Psychiatric Association. Diagnostic and Statistical Manual of Mental Disorders. 5th ed. Washington DC: APA; 2013
3. Bhatia MS, et al. Gender dysphoria with homosexuality and co morbid depressive disorder International Journal of Research in Medical Sciences 2015;3(9):2459-2462
4. Srinivasan SP, Chandrasekaran S. Care of transgender individuals in India: A clinical perspective. Indian J Soc Psychiatry 2020;36:284-8
5. Hatami M, Ayvazi S. Investigating of personality characteristic (extroversion introversion) and early maladaptive schemas (EMS) in males and females with gender identity disorder (GID). Procedia Soc Behav Sci 2013;84:1474-80
6. Haas AP, Eliason M, Mays VM, et al. Suicide and suicide risk in lesbian, gay, bisexual, and transgender populations: review and recommendations. J Homosex. 2011;58(1):10-51
7. Campo J, Nijman H, Merkelbach H, Evers C. Psychiatric comorbidity of gender identity disorders: a survey among Dutch psychiatrists. Am J Psychiatry 2003;160:1332-6
8. Hepp U, Kraemer B, Schnyder U, Miller N, Delsignore A. Psychiatric comorbidity in gender identity disorder. J Psychosom Res 2005;58:259-61
9. Wallien MS, Swaab H, Cohen-Kettenis PT. Psychiatric comorbidity among children with gender identity disorder. J Am Acad Child Adolesc Psychiatry 2007;46(10):1307-14
10. Sadock B, Sadock V. Kaplan and Sadock's Synopsis of Psychiatry Behavioural Sciences/Clinical Psychiatry. 11th ed. Philadelphia, PA, USA: Wolter Kluwer; 2015
11. Rao GP, Aparna B. A Case Report of Gender Dysphoria with Morbid Jealousy in a Natal Female. Indian journal of psychological medicine. 2017;39(6):800-2

