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## Editorial

# Maternal Mortality - Causes and Remedy

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**Maternal death** is defined by the World Health Organization (WHO) as "the death of a woman while pregnant or within 42 days of termination of pregnancy, irrespective of the duration and site of the pregnancy, from any cause related to or aggravated by the pregnancy or its management but not from accidental or incidental causes.[1]

There are two performance indicators that are sometimes used interchangeably: maternal mortality ratio and maternal mortality rate, which confusingly both are abbreviated "MMR".[2] According to the United Nations Population Fund (UNFPA) this is equivalent to "about one woman every two minutes and for every woman who dies, 20 or 30 encounter complications with serious or long-lasting consequences. Most of these deaths and injuries are entirely preventable.[3]

Worldwide mortality rates have been decreasing in modern age. High rates still exist, particularly in impoverished communities with over 85% living in Africa and Southern Asia.[3] The effect of a mother's death results in vulnerable families and their infants, if they survive childbirth, are more likely to die before reaching their second birthday.[3]

The most common causes are postpartum bleeding (15%), complications from unsafe abortion (15%), hypertensive disorders of pregnancy (10%), postpartum infections (8%), and obstructed labor (6%).[4] Other causes include blood clots (3%) and pre-existing conditions (28%).[5] Indirect causes are malaria, anemia,[6] HIV/AIDS, and cardiovascular disease, all of which may complicate pregnancy or be aggravated by it.

Sociodemographic factors such as age, access to resources and income level are significant indicators of maternal outcomes. Young mothers face higher risks of complications and death during pregnancy than older mothers,[7] especially adolescents aged 15 years or younger.[8] Adolescents have higher risks for postpartum hemorrhage, puerperal endometritis, operative vaginal delivery, episiotomy, low birth weight, preterm delivery, and small-for-gestational-age infants, all of which can lead to maternal death.[8] Structural support and family support influences maternal outcomes. Furthermore, social disadvantage and social isolation adversely affects maternal health which can lead to increases in maternal death.[9] Additionally, lack of accesssssss to skilled medical care during childbirth, the travel distance to the nearest clinic to receive proper care, number of prior births, barriers to accessing prenatal medical care and poor infrastructure all increase maternal deaths. Unsafe abortion is another major cause of maternal death. According to the World Health Organization, every eight minutes a woman dies from complications arising from unsafe abortions. Complications include hemorrhage, infection, sepsis and genital trauma.[10] Globally, preventable deaths from improperly performed procedures constitute 13% of maternal mortality, and 25% or more in some countries where maternal mortality from other causes is relatively low, making unsafe abortion the leading single cause of maternal mortality worldwide.[11]

According to the 2010 United Nations Population Fund report, developing nations account for ninety-nine percent of maternal deaths with the majority of those deaths occurring in Sub-Saharan Africa and Southern Asia.[12] Globally, high and middle income countries experience lower maternal deaths than low income countries. The Human Development Index (HDI) accounts for between 82 and 85 percent of the maternal mortality rates among countries.[13] In most cases, high rates of maternal deaths occur in the same countries that have high rates of infant mortality. These trends are a reflection that higher income countries have stronger healthcare infrastructure, medical and healthcare personnel, use more advanced medical technologies and have fewer barriers to accessing care than low income countries. Therefore, in low income countries, the most common cause of maternal death is obstetrical hemorrhage, followed by hypertensive disorders

of pregnancy, in contrast to high income countries, for which the most common cause is thromboembolism.[14]

At a country level, India (19% or 56,000) and Nigeria (14% or 40,000) accounted for roughly one third of the maternal deaths in 2010. Democratic Republic of the Congo, Pakistan, Sudan, Indonesia, Ethiopia, United Republic of Tanzania, Bangladesh and Afghanistan comprised between 3 and 5 percent of maternal deaths each.[12] These ten countries combined accounted for 60% of all the maternal deaths in 2010 according to the United Nations Population Fund report. Countries with the lowest maternal deaths were Estonia, Greece and Singapore.[15]

In the United States, the maternal death rate averaged 9.1 maternal deaths per 100,000 live births during the years 1979–1986,[16] but then rose rapidly to 14 per 100,000 in 2000 and 17.8 per 100,000 in 2009.[17] In 2013 the rate was 18.5 deaths per 100,000 live births, with some 800 maternal deaths reported.[18]

UNFPA estimated that 289,000 women died of pregnancy or childbirth related causes in 2013.[3] These causes range from severe bleeding to obstructed labor, all of which have highly effective interventions. As women have gained access to family planning and skilled birth attendance with backup emergency obstetric care, the global maternal mortality ratio has fallen from 380 maternal deaths per 100,000 live births in 1990 to 210 deaths per 100,000 live births in 2013, and many countries halved their maternal death rates in the last 10 years.[3]

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## Original Article

# Level of Knowledge on EPI Vaccination according to Respondents Socio-economic Condition in a Selected Urban Community in Rangpur District

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**Abstract:**

**Context:** Vaccination is a strong need all around the world, especially in developing countries to save the children from death & diseases. Children are vulnerable to disease & constitute a high proportion of total death. The estimated number of under five children at present in Bangladesh is 20 million. 10% of them are dying from vaccine preventable diseases each year. So we can prevent a large number of under five deaths by immunization. Objective of the study was to ascertain the knowledge of respondents on immunization. **Methods:** It was a descriptive type of cross sectional study. The sample size was estimated by the WHO 30 clusters survey methodology. From each cluster 7 mothers were included and total simple size was 210. **Results:** It was observed that respondents were reportedly very good response in case of need for vaccination (96.2%), number of BCG vaccine (94.3%), and age at BCG vaccine (80.0%). On the contrary, the respondents had average knowledge in terms of frequency of taken vaccination center (65.7%), number of DPT Vaccine (67.6%), number of OPV Vaccine (62.9%) and age at measles (66.2%); but partial knowledge was found in terms of number of immunizable disease (86.2%). The mean score of knowledge was 10.4 ± 3.3 ranging from 2.0 -14.0. **Conclusions:** It was concluded that improvement of educational status of the people and training of the health workers from time to time (refresher training) should be conducted to increase EPI coverage.

**Indexing wards:** EPI, Knowledge, Socio-economic condition, Urban community

**Introduction:**

Immunization is one of the most powerful and cost effective health protective measures of modern medical science and thus immunization service has been given required priority to be practiced in the world today. Although immunization cover in the world is progressing rapidly but lack of knowledge on immunization is an obstacle to achieve the desired target and goal[1].

In a study done by ICCDDR, B suggests that giving information and education is an essential part of the motivational process for EPI vaccination. A hospital stay is not only a chance to give the first dose of vaccine, but it is also an opportunity to give health education that will effectively motivates parents in the future.[2] Despite of all facilities available, vaccination is still underutilized especially in developing countries like Bangladesh. Parents can save two-thirds of the 14 million children who die every year. Immunization alone could save three millions of lives. Probably lack of awareness among the people is one of the most important causes of under utilization of immunization in our country[3].

Global immunization efforts open with a view of the history of the Expanded Program on Immunization (EPT) from its inception in 1974. The EPI's goal of facilitating the use of vaccines in the developing world required the establishment of immunization policy at the global and national levels[4].

One of the most dramatic current goals for EPI is the eradication of poliomyelitis by the year 2000. But there are still difficulties in raising the resources needed to ensure that the job is finished on time. Reported BCG and $DPT_3$ coverage have remained steady since 1990 at about 90% and 80% respectively. Countries in greatest need have reported a slow but steady improvement for $DPT_3$ coverage, increasing from 26% in 1988 to 44% in 1996. At least 86

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countries have now introduced hepatitis B vaccine into their routine immunization program and at least 25 have introduced Hemophilus influenza type B (HIb) vaccine. EPI have focused attention on countries in greatest need-those requiring technical and financial support. Such countries have low national program implementation capacity and have received little support compared to other countries, which are financially and technically stronger. Support for immunization the area of, for instance, training has resulted in improvement in other areas of health care[5].

Child mortality rate is high in Bangladesh where approximately 833000 children under 5 years of age die per year and about one third of this die due to six vaccines preventable diseases. One child in four dies before his 5th birthday but more than half of this death occurs before the child reaches one year[6].

Bangladesh government has also taken up ambitious acceleration program of EPI through NID (National Immunization day) on 16th march and 16th April 1995 and this program the goal is polio free world by the year 2000 i.e. (a) Eradications of poliomyelitis by 2000 AD (b) elimination of neonatal tetanus by the year of 1995 (c) Reduction of measles by the year 2000[7].

Many factors may be considered responsible for this state of affairs. Acceptance of various health care facilities is especially dependent on the motivation of the people, creating awareness among the people, which in turn is influenced by the factors like education and economic freedoms of individuals and families. One can therefore, reasonably expect a difference in acceptance level of health care services provided in these various community[8].

**Methods:**

This study was a descriptive of cross sectional study. This study was conducted at different wards in Rangpur municipality and population was between the period of January 2003 and June 2003. The mothers having children of ages ranging from 12-23 months with history of EPI vaccination within one year age was the subjects of the study. The sample size estimated by the WHO 30 clusters survey methodology and total simple size were 210.

From different Mohollah each cluster was selected randomly b y using COSAS software. From each cluster 7 mothers were selected purposively. A structured questionnaire and observational checklist were used for data collection through face to face interview and observation. Proper ethical permission was taken from the Municipal authority and the mothers. The percentage and other statistical calculations and analysis were done by using software SPSS version 11.

**Results:**

It was observed from Table 1 that respondents were reportedly very good response in case of need for vaccination (96.2%), number of BCG vaccine (94.3%), and age at BCG vaccine (80.0%). On the contrary, the respondents had average knowledge in terms of frequency of taken vaccination center (65.7%), number of DPT Vaccine (67.6%), number of OPV Vaccine (62.9%), age at measles (66.2%), but partial knowledge was found in terms of number of immunizable disease (86.2%). The mean score of knowledge was 10.4 ± 3.3 ranging from 2.0-14.0.

**Table 1:** Scoring of the level of knowledge on immunization

| Level of knowledge | Score | Frequency | Percent |
|---|---|---|---|
| **Need for vaccination** | | | |
| No knowledge | 0 | 8 | 3.8 |
| Correct knowledge | 1 | 202 | 96.2 |
| **Age of completion of vaccination** | | | |
| No | 0 | 59 | 28.1 |
| Partial | 1 | 47 | 22.4 |
| Full | 2 | 104 | 49.5 |
| **Frequency of taken vaccination center** | | | |
| No knowledge | 0 | 72 | 34.3 |
| Correct knowledge | 1 | 138 | 65.7 |
| **No of BCG Vaccine** | | | |
| No knowledge | 0 | 12 | 5.7 |
| Correct knowledge | 1 | 198 | 94.3 |

| Level of knowledge | Score | Frequency | Percent |
|---|---|---|---|
| **No of DPT Vaccine** | | | |
| No knowledge | 0 | 68 | 32.4 |
| Correct knowledge | 1 | 142 | 67.6 |
| **No of OPV Vaccine** | | | |
| No Knowledge | 0 | 43 | 20.5 |
| Partial | 1 | 35 | 16.7 |
| Full | 2 | 132 | 62.9 |
| **Age at BCG Vaccination** | | | |
| No Knowledge | 0 | 10 | 4.8 |
| Partial | 1 | 32 | 15.2 |
| Full | 2 | 168 | 80.0 |
| **Age at measles Vaccination** | | | |
| No Knowledge | 0 | 15 | 7.1 |
| Partial | 1 | 56 | 26.7 |
| Full | 2 | 139 | 66.2 |
| **No of immunizable disease.** | | | |
| No Knowledge | 0 | 0 | 0.0 |
| Partial | 1 | 181 | 86.2 |
| Full | 2 | 29 | 13.8 |

In this study an attempt was made to assess the knowledge on different type of immunization. To quantify the knowledge an arbitrarily score was given for each option such as no knowledge scored 0, partial knowledge scored 1 and full knowledge scored 2 and in case two level for each question correct knowledge 1 and no knowledge scored 0; the full level of knowledge was scored from 0-14 After wards it was weighted into 1.i.e. on other way, it could be said, those who scored 14 will be weighted as 1 and those who had no response or incorrect response will get 0 score. So final full level of knowledge was ranging from 0-1; so the mean weighted knowledge was 0.74±0.2 ranging from 0.14 to 1.0. Arbitrarily, up to 0.5 score categorized as poor and above 0.5 score categorized as good knowledge.

**Table 2:** Distribution of respondents by level of knowledge on immunization

| Level of Knowledge | Frequency | Percent |
|---|---|---|
| Poor | 63 | 30.0 |
| Good | 147 | 70.0 |
| Total | 210 | 100.0 |

Mean ±SD =0.74±0.2
Range = 0.14 to 1.0

Table 3 shows that the mean age of mother with poor knowledge was 26.3±6.7 years and that of good knowledge was 27.4±6.4 years. No statistically significant difference was found in terms of level of knowledge on immunization and age of the mother (p>0.05) although the mother poor knowledge were a bit young than the mother with good knowledge.

**Table 3:** Distribution of respondents by level of knowledge and Age

| Age in year | Level of knowledge | | Total |
|---|---|---|---|
| | Poor | Good | |
| <20 | 8(30.8) | 18(69.2) | 26(100.0) |
| 20-29 | 36(33.0) | 73(67.0) | 109(100.0) |
| ≥30 | 19(25.3) | 56(74.7) | 75(100.0) |
| Total | 63(30.0) | 147(70.0) | 210(100.0) |
| Mean ±SD | 26.3±6.7 | 27.4±6.4 | 27.1±6.5 |

$x^2$ = 1.261, p Value= 0.532

It was observed from Table 4 that mother who was engaged in different type of job that is working mother had good knowledge on immunization (87.7%) than the non working mother i.e. housewife having poor knowledge on

immunization and the difference was statistically significant. (p<0.01)

**Table 4:** Distribution of respondents by level of knowledge and occupation

| Occupation of respondents | Level of Knowledge | | Total |
|---|---|---|---|
| | Poor | Good | |
| Housewife | 55(37.9) | 90(62.1) | 145(100.0) |
| Others | 8(12.3) | 57(87.7) | 65(100.0) |
| Total | 63(30.0) | 147(70.0) | 210(100.0) |

$x^2$ =14.032, p value=0.001.

From Table 5 it was observed that no statistically significant difference was found in terms of level of knowledge on immunization and husbands occupation (p>0.05).

**Table 5:** Distribution of respondents by level of knowledge and Occupation of husband

| Occupation (Husband) | Level of knowledge | | Total |
|---|---|---|---|
| | Poor | Good | |
| Non manual job | 42(30.0) | 98(70.0) | 140(100.0) |
| Manual job | 21(30.0) | 49(70.0) | 70 (100.0) |
| Total | 63(30.0) | 147(70.0) | 210(100.0) |

$x^2$ =0.000, p value=1.000.

It was evident from Table 6 that illiterate mother had poor knowledge on immunization (36.7) compared with literate mother who had good knowledge on immunization (75.0%).
But the difference was not statistically significant (p>.05).

**Table 6:** Distribution of respondents by level of knowledge and educational status

| Level of education of respondents | Level of knowledge | | Total |
|---|---|---|---|
| | Poor | Good | |
| Illiterate | 33(36.7) | 57(63.3) | 90(100.0) |
| Literate | 30(25.0) | 90(75.0) | 120(100.0) |
| Total | 63(30.0) | 147(70.0) | 210(100.0) |

$x^2$ =3.333, p value=0.068.

A statistically significant difference was found in terms of level of knowledge and level of education of husband (p<0.05) indicating literate husband had good knowledge on immunization (75.2%) than the illiterate husband (Table 7).

**Table 7:** Distribution of respondents by level of knowledge and educational status of husband

| Level of education (respondents) | Level of knowledge | | Total |
|---|---|---|---|
| | Poor | Good | |
| Illiterate | 24(45.3) | 29(54.7) | 53(100.0) |
| Literate | 39(24.8) | 118(75.2) | 157(100.0) |
| Total | 63(30.0) | 147(70.0) | 210(100.0) |

$x^2$ =7.885, p value=0.005.

It was revealed from Table 8 that Mother of Muslim by religion had poor knowledge (30.6%) on immunization compared with non –Muslim mother (75.0%) having good knowledge on immunization, But the difference was not statistically significant (p>0.05).

**Table 8**: Distribution of respondents by level of knowledge and Religion

| Religion | Level of knowledge | | Total |
|---|---|---|---|
| | Poor | Good | |
| Muslim | 57(30.6) | 129(69.4) | 186(100.0) |
| Non Muslim | 6(25.0) | 18(75.0) | 24(100.0) |
| Total | 63(30.0) | 147(70.0) | 210(100.0) |

$x^2$ =0.323, p value=0.750.

It was observed from Table 9 that divorced mother had poor knowledge on immunization (40.0%) compared with currently married mother having good knowledge (70.0%)
Difference was not statistically significant (p>0.05)

**Table 9:** Distribution of respondents by level of knowledge and marital status

| Marital Status | Level of knowledge | | Total |
|---|---|---|---|
| | Poor | Good | |
| Married | 61(29.8), | 144(70.2), | 205(100.0) |
| Divorced | 2(40.0) | 3(60.0) | 5(100.0) |
| Total | 63(30.0), | 147(70.0) | 210(100.0) |

$x^2$ =0.244, p value=0.621.

A statistically significant difference was found in terms of level of knowledge on immunization and monthly family income (p<0.05) indicating mother with poor knowledge had monthly income below tk 5000 where as with good knowledge had better income of above tk 5000 (Table 10).

**Table 10:** Distribution of respondents by level of knowledge and monthly income

| Monthly income taka | Level of knowledge | | Total |
|---|---|---|---|
| | Poor | Good | |
| <2500 | 30(46.2) | 35(53.8), | 65 (100.0) |
| 2500-5000 | 20(25.0) | 60(75.0) | 80 (100.0) |
| 5000-10000 | 10(20.0) | 40(80.0) | 50(100.0) |
| >- 10000 | 3(20.0) | 12(80.0) | 15(100.0) |
| Total | 63(30.0) | 147(70.0) | 210(100.0) |

$x^2$ =12.125, p value=0.007

It was observed from Table 11 that the mean family size having poor knowledge was 5.17±1.5 and good knowledge was 5.2±1.5. No statistically significant difference was found in terms of level of knowledge and family (p>0.05) although mother having good knowledge had a bit large family than poor knowledge family.

**Table 11:** Distribution of respondents by level of knowledge and family size

| Family size | Level of knowledge | | Total |
|---|---|---|---|
| | Poor | Good | |
| 3-4 | 33(29.2) | 80(70.8), | 113 (100.0) |
| 5-6 | 24(33.8) | 47(66.2) | 71(100.0) |
| ≥7 | 6(23.1) | 20(76.9) | 26(100.0) |
| Total | 63(30.0) | 147(70.0) | 210(100.0) |
| Mean ±SD | 5.17±1.46 | 5.21±1.51 | 5.20±1.49 |

$x^2$ =1.116, p value=0.572

Table 12 shows the distribution of infants by pattern of immunization. It was observed that coverage of immunization gradually fall from BCG vaccine to Measles vaccine.

**Table 12:** Distribution of infants by immunization

| Vaccine | No | 1st Dose | 2nd Dose | 3rd Dose | 4th Dose | Measles |
|---|---|---|---|---|---|---|
| BCG | 210 | 210(100.0) | - | - | - | - |
| DPT | 210 | 210(100.0) | 189(90.0) | 169(80.5) | - | - |
| OPV | 210 | 210(100.0) | 189(90.0) | 169(80.5) | 158(75.2) | - |
| Measles | 210 | - | - | - | - | 158(75.5) |

** Figure in parenthesis indicates percentage.

**Discussion:**

In this study, regarding knowledge on the need of vaccination it was found that, those who had no knowledge had zero coverage of her children in EPI vaccination and those who had correct knowledge had 67.2% coverage of her children in EPI vaccination. Regarding knowledge on age at completion of vaccination, those who had no knowledge had 10.2% of coverage, those who had partial knowledge had 68.1% coverage and those who had correct knowledge had 95.2% coverage. Regarding knowledge on frequency of taken to vaccination center, those who had no knowledge had only 11.1% coverage and those who had correct knowledge had 93.5% coverage and those who had correct knowledge had 93.5 coverage. Regarding knowledge on number of BCG vaccine, those who had no knowledge had zero percent coverage and those who had correct knowledge had 69.2% coverage. Regarding knowledge on number of DPT vaccine, those who had no knowledge had 7.4% coverage and those who had correct knowledge had 93% coverage. Regarding knowledge on number of OPV vaccine, those who had no knowledge had zero percent of coverage and those who had partial knowledge had 14.3% coverage and those who had correct knowledge had no dropout. Regarding knowledge on age at BCG vaccine those who had no knowledge had cent percent of dropout and those who had partial knowledge had 37.5% coverage and those who had correct knowledge had 74.4% coverage. Regarding age at measles vaccine those who had no knowledge had zero percent coverage and those who had partial knowledge had 14.3% coverage and those who had correct knowledge had 92.8% coverage. Regarding number of immunizable disease, those who had partial knowledge had 65.2% coverage and those who had correct knowledge had only 65.5% coverage.

From this study it was evident that among the mothers of age group below 20 years less percentage of coverage was present and 20 to 29 years age group was in second position. Majority of the respondents were young aged group and this has similarities with the study conducted by Begum et al[3] where she showed that young mothers were less aware and inexperience of the six killer diseases as well as wives were dominated by their husbands or mother-in-low. But another study done by Hossain[9] showed that coverage were less in the children of middle aged (20-30) mothers.

National coverage evaluation survey Bangladesh done by DGHS and WHO in 1997. Coverage rate of $DPT_1$- to measles were 30% decrees in Dhaka division and $DPT_1$ to measles 15% in Khulna division. $DPT_1$-$DPT_3$. $DPT_1$ to measles 18% in urban area. $DPT_1$ to measles 14% in Dhaka city corporation. Reason for failure of vaccination were lack of information about doses were needed, place and time of immunization unknown[10].

**Conclusion & recommendation**:

In this study it was found that many mothers had poor knowledge about immunization and was not aware of the need of vaccination. Poor knowledge was found regarding frequency of taken to vaccination center, number of doses of immunizable diseases. Very few had partial knowledge on age of completion of vaccine and number of immunizable diseases. Lastly it was concluded that improvement of educational status of the people is to be strengthened to increase EPI coverage. Training of the health workers from time to time (refresher training) is to be conducted.

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## Original Article

# Evaluation of Serum CK-MB Levels in Congestive Heart Failure

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**Abstract**

**Context:** The objective of this cross sectional study was to find out the relationship between the level of serum CK-MB and congestive cardiac failure. **Methods:** In total 72 subjects of different socioeconomic class were included randomly and was divided in to four groups, 36 subjects were apparently healthy and 36 subjects were divided in to three groups according to NYHA staging of heart failure. **Results:** The mean serum CK-MB was 0.897 ± 0.721 ng/ml among healthy subjects and 2.492 ± 2.535 ng/ml among the heart failure patients having significant difference ($p<0.001$) between two groups and the difference was more marked in NYHA class III group of heart failure patients. **Conclusions:** These findings show that there was a definite rise of serum CK-MB level as heart failure advances. The evaluation suggests the use of CK-MB as a marker for staging of heart failure.

**Indexing wards:** Serum CK-MB level, Congestive heart failure

**Introduction:**

Congestive heart failure (CHF) is defined as impairment of systolic and/or diastolic function of the heart, leading to failure of the heart to meet the demands of the peripheral tissues, or leading to maintenance of cardiac function under higher filling pressures[1]. In the mildest form of heart failure cardiac output is adequate at rest and becomes inadequate only when metabolic demand increases. The syndrome of heart failure in precise mechanistic and/or clinical terms is that the clinical syndrome of heart failure almost certainly represents the summation of multiple anatomic, functional and biological alterations that interact together in an exceedingly complex manner and in different genetic and environmental backgrounds over a sustained but variable period of time[2]. Heart failure is associated complex neurohormonal changes including activation of the renin angiotensin aldosteron axis and sympathetic nervous system[3]. At first these changes may help to optimize cardiac function by altering the after load or preload and by increasing myocardial contractility. The transition of asymptomatic cardiac dysfunction to symptomatic heart failure is associated with extensive remodeling of the muscular, collagenous, and vascular compartments of the myocardium[4].

Two mechanisms of cell death have been described in heart failure necrosis and apoptosis[5]. Apoptotic cells can be identified through histochemical visualization of nuclear DNA fragments or demonstration of a characteristic “ladder” of small DNA fragments[6].

The progression CHF results from a continuing loss of viable myocytes, dysfunction of viable myocyte, or both[6], with progressive chamber dilation and LV dysfunction[7]. If CHF progresses from a continuing loss of myocytes, then serum markers of myocardial necrosis might be

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identified in patients with progressive CHF. Reports from more than twenty years ago did not show an association between serum levels of creatine kinase (CK) or CK-MB and heart failure[8]. However, more sensitive assay techniques have been developed now. Furthermore with the development of more sensitive assays for detection of myocardial injury (cardiac troponins T and I & CK MB) has attracted recent interest about these markers.
CK-MB mass and myoglobin concentrations were in the normal reference range for all groups that is, healthy controls, hospitalized controls, and heart failure patients[4]. However congestive heart failure patients demonstrated an absolute increase in the CK-MB and myoglobin levels that paralleled the increase of cardiac troponin I[4]. Of the thirty five heart failure patients, eight had CK-MB level that exceeded the assay upper reference limit of 6ng/ml. importantly, when patients were stratified according to the CK-MB cut off, all markers of myocardial injury clearly tended to be increased in the group of CK-MB positive heart failure patients[4]. Serum concentrations of CK-MB and Tn-I may become elevated in severely symptomatic patients with CHF (particularly NYHA class III-IV), demonstrating a relationship between clinical severity of the disease and elevation of myocardial enzymes (CK-MB and Tn-I)[9]. The objective of this cross sectional study was to find out the relationship between the level of serum CK-MB and congestive cardiac failure.

**Methods:**
This cross sectional analytical study was carried out in the Department of Biochemistry Bangabandhu Sheikh Mujib Medical University (BSMMU) jointly with the Department of Cardiology of the same university between the period of July 2003 and June 2004. A total seventy two subjects were included in this study, among them thirty six from the inpatient division of cardiology department of BSMMU and thirty six healthy controls among the students and stuffs of the different departments of BSMMU, and were grouped as follows. Proper ethical permission was taken from the Ethical review board of BSMMU.

**Group-I** (n=12) Patients with congestive cardiac failure and belongs to the group of NYHA (New York Heart Association) class I patients of congestive cardiac failure. **Group-II** (n=12) Patients with congestive cardiac failure and belongs to the group of NYHA class II patients of congestive cardiac failure. **Group-III** (n=12) Patients with congestive cardiac failure and belongs to the group of NYHA class III patients of congestive cardiac failure and **Group-IV** (n=36) normal healthy adults with no history of any disease living in the same geographical area. Diagnosis was based on clinical history, examinations and echocardiography. Blood samples were collected from the subjects.

Serum CK-MB measurement was based on Microparticle enzyme Immunoassay (MEIA) principle[10]. Serum creatinine was estimated by alkaline picrate method[11]. Serum ALT was estimated by single vial Method[12]. Echocardiography was done by ALOKA prosound SD 5000 echocardiography machine. Twelve lead ECG was performed to exclude acute myocardial infarction and unstable angina.

Analysis of variance (ANOVA) test, independent samples 't' test (unpaired 't' test) and Pearson correlation test were done using computer based SPSS 12.0 for windows software. Mean values of the different parameters were compared for difference between groups and 95% confidence limit was taken as level of significance.

**Results:**

**Serum CK- MB**
The mean concentration of serum CK-MB in control subjects and CHF patients were 0.897 ± 0.721 ng/ml and 2.492 ± 2.535 ng/ml (Table 1) respectively having significant difference between two groups (p<0.001). The mean concentration of serum CK-MB in group I was 1.742 ± 2.339 ng/ml, in group II was 1.233 ± 1.182 ng/ml, in group III was 4.5 ± 2.614 ng/ml (Table 2) respectively having significant difference among the groups (p<0.001). Independent "t" test was done between the groups shows significant difference (p <0.001) between group III and any other groups.

**Table 1:** Serum CK-MB level of the congestive heart failure patients and the control subjects

| Parameter | Control (n=36) | | CHF (n=36) | | p Value |
|---|---|---|---|---|---|
| | Mean | Range | Mean | Range | |
| CK-MB (ng/ml) | .897 ± .721 | 0.0-2.5 | 2.492 ± 2.535 | 0.5-9.6 | < 0.001 |

**Table 2:** Comparison of CK-MB conc. between different groups

| Comparison | Mean ± SD | p Value |
|---|---|---|
| Gr I vs Gr II | 1.742 ± 2.339 vs 1.233 ± 1.182 | > 0.05 |
| Gr I vs Gr III | 1.742 ± 2.339 vs 4.5 ± 2.614 | < 0.001 |
| Gr I vs Gr IV | 1.742 ± 2.339 vs 0.897 ± .721 | > 0.05 |
| Gr II vs Gr III | 1.233 ± 1.182 vs4.5 ± 2.614 | < 0.001 |
| Gr II vs Gr IV | 1.233 ± 1.182 vs 897 ± .721 | > 0.05 |
| Gr III vs Gr IV | 4.5 ± 2.614 vs 897 ± .721 | < 0.001 |

**Ejection fraction**

The mean ejection fraction of congestive cardiac failure patients and control subjects were 34.22 ± 11.090 % and 67.89 ± 3.276 % (Table 3) respectively having significant difference (p<0.001) between the two groups. Among the congestive cardiac failure patients mean ejection fraction of group I were 46.92 ± 4.379 %, group II were 32.75 ± 7.073 %, group III were 23.00 ± 2.558 % and healthy subjects were 67.89 ± 3.278 (Table 4) respectively having significant difference (p<0.001) among the groups (Table 5).

**Table 3:** Ejection fraction of the patients of CHF and the control subjects

| Parameter | CHF (n=36) | | Control (n=36) | | p Value |
|---|---|---|---|---|---|
| | Mean | Range | Mean | Range | |
| Ejection fraction (%) | 34.22± 11.09 | 62-76 | 67.89 ± 3.276 | 20-52 | < 0.001 |

**Table 4:** Ejection fraction of the different groups of the study subjects

| Group | Ejection fraction (%) | |
|---|---|---|
| | Mean ± SD | Range |
| Group I (n=12) | 46.92 ± 4.379 | 35 - 52 |
| Group II (n=12) | 32.75 ± 7.073 | 20 - 40 |
| Group III (n=12) | 23 ±2.558 | 20 - 28 |
| Group IV (n=36) | 67.89 ± 3.278 | 62 - 76 |

**Table 5:** Comparison of ejection fraction among different groups

| Parameter | G - I | G - II | G - III | G - IV | F value | P value |
|---|---|---|---|---|---|---|
| Ejection fraction (%) | 46.92 ± 4.379 | 32.75 ± 7.073 | 23 ± 2.558 | 67.89 ± 3.278 | 447.682 | < 0.001 |

**Table 6:** Blood pressure, serum creatinine and serum ALT concentration of control subjects and CHF patients

| Parameters | Study subjects | | P value |
|---|---|---|---|
| | Control (36) | CHF (36) | |
| Serum creatinine (µ mol/L) | 1.0306±0.1635 | 0.9667 ± 0.2084 | > 0.05 |
| Serum ALT (IU/L) | 22.3167±9.4236 | 25.4361±11.7639 | > 0.05 |

Figure 1 shows significant negative correlation between the levels of CK-MB with ejection fraction which is the indication of increase in release of CK-MB from damaged myocardium with the progression of heart failure.

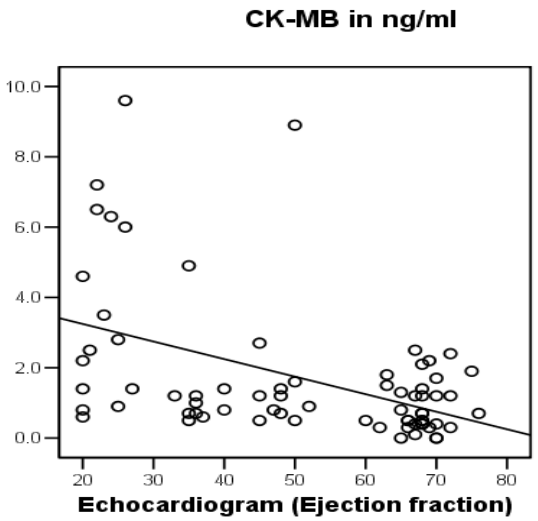



**Figure 1:** Correlation (p<0.05) between serum CK-MB and Ejection Fraction

## Discussion:

Congestive cardiac failure is the only major cardiovascular disorder that is increasing in incidence prevalence and cause of death[13]. The incidence of heart failure has markedly increased over past two decades[14]. Elevated CK-MB level in the serum is an established diagnostic test for the patients of myocardial infarction. According to some the mean concentration of CK-MB in heart failure patients (4.8 ± 0.7ng/ml) significantly higher than in normal healthy donor and hospitalized control subjects (3.0 ± 0.4ng/ml)[4]. They also showed that among the 35 patients of congestive cardiac they studied, 8 have mean serum CK-MB level of 10.2 mg/ml. In this study it is found that the mean CK-MB concentration in heart failure patients was 2.492 ± 2.535 ng/ml tables and in control subjects was

0.897 ± 0.727ng/ml, significantly higher mean serum CK-MB concentration in the patients of congestive heart failure. Findings of this study and findings of the workers mentioned above are consistent but the mean concentration of CK-MB in any of the studies did not cross the upper reference range. In the literature provided with the AxSYM CK-MB reagent pack provided the information that the concentration of CK-MB in healthy subjects should be low or undetectable and the cut off value for myocardial infarction is 10ng/ml. In our study the mean CK-MB level was 0.897 ± 0.727 (Table I) in control subjects which was significantly lower than the mean CK-MB level of the control subjects of workers mentioned above. The difference of mean CK-MB level of the control subjects of them and us may be due to difference in the height, weight, food habit and physical activity of those subjects and Bangladeshi people. So is possible that mean serum CK-MB level of Bangladeshi people is much lower than American population and needs large number of study population for the fixation of normal serum CK-MB level of Bangladeshi people. In our study we also found significant difference of mean CK-MB level with NYHA class III patients of congestive heart failure with other three groups (control subjects, NYHA class I patients and NYHA class II patients $p<0.001$) Table. This finding suggests the associated release of CK-MB with cardiac troponin I from damaged myocardium. We also found strong positive correlation of CK-MB with cardiac troponin I ($p<0.01$). The positive correlation between CK-MB and cardiac troponin I was also showed by some warkers[4]. Which means that cardiac troponin I and CK-MB may simultaneously released from damaged myocardium. So it can be assumed that the rate of release CK-MB from myocardium increases as heart failure progresses. The level of CK-MB with ejection fraction showed significant negative correlation (Fig I) which is the indication of increase in release of CK-MB from damaged myocardium with the progression of heart failure.

**Conclusion:**

The result of the study showed that serum CK-MB level was significantly higher in patients of congestive cardiac failure especially in NYHA class III patients but, did not exceeded upper reference limit. So it can be assumed that though serum CK-MB level is not exceeding the upper reference limit but the increase positively correlates as heart failure progresses to advance stage. So it may be recommended for estimation of serum CK-MB for the diagnosis and staging of heart failure along with other markers such as serum cardiac troponin I concentration and ejection fraction. But further study should be carried out with the inclusion of large sample and designed as long term prospective is recommended.

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## Original Article

# A Clinico-Epidemiological Study on Pesticide Poisoning

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**Abstract**

**Contexts:** Over the last few decades, agricultural pesticides have become a common household item in rural areas of the developing world. As a result of their easy availability, pesticides have also become commonly used for intentional self poisoning. World Health Organization (WHO) estimates, around 3 million poisoning cases with 220,000 deaths occur annually. About 99% of these deaths occur in developing countries. So, this study was aimed at to know the clinico-epidemiological aspects and to evaluate the immediate outcome of patients admitted with pesticide poisoning. **Methods:** This was a crosss-sectional observational study, carried out on 60 victims of pesticide poisoning admitted to one unit of medical indoor department of Dhaka Medical College Hospital, Dhaka. The diagnosis was based on history of pesticide ingestion and clinical features or with evidence of brought specimen. The age, sex, marital status, occupation, cause of intoxication, poison consumed, time elapsed between ingestion and admission to the hospital, signs and severity of intoxication on admission and treatment outcomes were recorded on a predesign case record form. **Results:** Among the 4378 patients admitted in the unit during this period, total number of poisoning was 796 (18.18%). Number of total deaths was 579 (13.23%), among them 37 deaths was due to poisoning (6.39%). Again, among the poisoning cases, 60 (7.53%) were due to pesticides, and no. of deaths was 13 (2%). Age range of the victims was 13-55 years (mean 23.38 ±1.16 years). Females were 60%, mostly rural (56.7%), married (51.7%) and students (35%). 60(8%) were caused by pesticide, 16(2%) by rodenticide and 8(1%) by fungicide and the rests 711(89%) were caused by other different types of poisoning. the cardinal clinical features of poising were nausea/vomiting (93.33%), myosis (88.33%) and increased sweating (80%) followed by increased salivation (58.33%), hypotension and urinary incontinence (each 51.67%). Majority (93.3%) of the poisoning cases had suicidal intention followed by accidental (5%) and homicidal (1.7%). The suicidal intention was not due to any prior psychiatric illness, rather due to various tripling issues amongst the family members. Nearly three-quarter (73.3%) of the patients recovered completely, 13 (21.7%) patients died of the condition and the rest 3 (5%) were absconded. **Conclusion:** It was a simple observational study and though scientific diagnostic measurement was not possible it may not reflect the total pesticide poisoning situation of Bangladesh and much work is needed to tackle the situation. Awareness of the doctors should be created by giving adequate importance of pesticide poisoning in undergraduate curriculum as well as by continued medical education might help to improve the crisis.

**Indexing words:** Clinical & epidemiological factors, Pesticide poisoning

**Introduction:**

Pesticides are a group of chemicals used predominantly in agriculture defines a pesticide as any substance or mixture of substances intended for preventing, destroying or controlling any pest[1]. Organophosphate pesticide poisoning is a major health problem worldwide and is a leading cause of morbidity and premature loss of life in many developing countries of the Asia-Pacific region[2].

Over the last few decades, agricultural pesticides have become a common household item in rural areas of the developing world.

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As a result of their easy availability, pesticides have also become commonly used for intentional self poisoning. It was estimated that, fourteen of all deaths amongst 10-50 year old women in Bangladesh were due to poisoning, the majority following suicidal ingestion of pesticides[3]. Bangladesh Health Bulletin under DGHS published in 1998, shows that there is increasing frequency of poisoning cases from 1988-1996 except in 1990 and 1993[4]. In attempted suicide, which is considerably more frequent than completed suicide, pesticide poisoning results in temporary or permanent disability. Intentional and unintentional pesticide poisoning has been acknowledged as a serious problem in many agricultural communities of low- and middle-income countries, including China, India, Sri Lanka, and Vietnam[5].

World Health Organization (WHO) estimates, around 3 million poisoning cases with 220,000 deaths occur annually. About 99% of these deaths occur in developing countries. Suicide is an important cause of premature mortality accounting for an estimated 849,000 deaths every year[6]. In many agricultural communities of low- and middle income countries pesticide self-poisoning accounts for many of these deaths[7]. In 1985, based on data from Sri Lanka, Jeyaratnam estimated there were approximately 2.9 million cases of acute pesticide poisoning, resulting in around 220,000 deaths each year in the developing world[8]. More recently, based on the finding that pesticide ingestion accounted for over 60% of suicides in many rural areas of China and South-East Asia, Gunnell & Eddleston (2003)[7] estimated that there may be as many as 300,000 deaths each year from intentional poisoning (i.e. suicide by ingestion of pesticides) in these regions alone. This makes it likely that pesticide poisoning is the most frequently used method of suicide worldwide.

To know the clinico-epidemiological aspects and to evaluate the immediate outcome of patients admitted with pesticide poisoning.

**Methods:**

This was a crosss-sectional observational study, carried out over a period of one year between January 2004 and December 2004. Victims of pesticide poisoning admitted to one unit of medical indoor department of Dhaka Medical College Hospital, Dhaka were enrolled in this study. Proper ethical permission was taken from the authority of Dhaka Medical College Hospital.

The diagnosis was based on history of pesticide ingestion and clinical features or with evidence of brought specimen. Total sixty patients of pesticide poisoning were enrolled.

The age, sex, marital status, occupation, cause of intoxication, poison consumed, time elapsed between ingestion and admission to the hospital, signs and severity of intoxication on admission, treatment. Outcomes were recorded on a predesign case record form.

**Results:**

Table 1 shows the frequency of the poisoning patients among the other patients admitted in this unit at that period. Among the total 4378 patients, 18.18% patients were admitted due to poisoning. Among 13.23% deaths in this period, 6.39% was due to poisoning.

**Table 1:** Admission and death due to poisoning in one medical unit of DMCH in 2004

| Hospital profile | Number | % |
|---|---|---|
| No. of patients admitted | 4378 | - |
| No. of total deaths | 579 | 13.23 |
| Total poisoning cases | 796 | 18.18 |
| Total death due to poisoning | 37 | 6.39 |
| Total pesticide poisoning | 60 | 7.53 |
| Total death due to pesticide poisoning | 13 | 2 |

Table 2 shows the socio-demographic characteristics of the patients. It was observed that most of the victims were ≤20years. Mean age of the victims were 23.38±1.16 years. They were mostly female (60%) and students (35%).

**Table 2:** Socio-demographic characteristics of the patients

| Demographic characteristics | Number | % |
|---|---|---|
| **Age (yrs)** | | |
| ≤20 | 31 | 51.7 |
| ≤ 21 – 30 | 19 | 31.7 |
| 31 – 40 | 08 | 13.2 |
| 41 – 50 | 01 | 1.7 |
| > 50 | 01 | 1.7 |
| Mean age = (23.38±1.16) years; range: (13–55) years | | |

| | | |
|---|---|---|
| **Sex** | | |
| Male | 24 | 40.0 |
| Female | 36 | 60.0 |
| **Residence** | | |
| Urban | 26 | 43.3 |
| Rural | 34 | 56.7 |
| **Marital status** | | |
| Married | 31 | 51.7 |
| Unmarried | 29 | 48.3 |
| **Occupation** | | |
| Student | 21 | 35.0 |
| House-wife | 18 | 30.0 |
| Businessmen | 09 | 15.0 |
| Farmer | 04 | 6.7 |
| Garment's worker | 02 | 3.3 |
| Maid-servant | 03 | 5.0 |
| Service-holder | 01 | 1.7 |
| Others | 02 | 3.3 |

Total 796 poisoning cases attended in one medical unit ofθ DMCH, 60(8%) were caused by pesticide, 16(2%) by rodenticide and 8(1%) by fungicide and the rests 711(89%) were caused by other different types of poisoning.

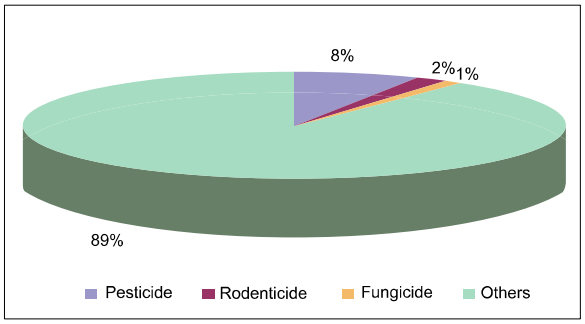



**Figure 1:** Pie chart showing types of material used for poisoning

Table 3 shows that the cardinal clinical features of poising were nausea/vomiting (93.33%), myosis (88.33%) and increased sweating (80%) followed by increased salivation (58.33%), hypotension and urinary incontinence (each 51.67%). Other clinical features were not very common.

**Table 3:** Clinical features of the organophosphorus compound poisoning cases (n= 60)

| Clinical features | Number | % |
|---|---|---|
| Nausea / vomiting | 56 | 91.33 |
| Miosis | 53 | 88.33 |
| Blurred vision | 27 | 45.0 |
| Increased sweating | 48 | 80.0 |
| Increased salivation | 35 | 58.33 |
| Increased bronchial secretion | 30 | 50.0 |
| Bradycardia | 18 | 30.0 |
| Hypotension | 16 | 26.67 |
| Urinary incontinence | 31 | 51.67 |
| Abdominal pain | 31 | 51.67 |
| Muscle fasciculation | 19 | 31.67 |
| Headache | 19 | 31.67 |
| Drowsiness | 10 | 16.67 |
| Disturbance in speech | 27 | 45.0 |
| Seizure | 5 | 8.33 |
| Coma | 11 | 18.33 |

Majority (93.3%) of the poisoning cases had suicidal intention followed by 5% accidental and 1.7% homicidal. The suicidal intention was not due to any prior psychiatric illness, rather due to various tripling issues amongst the family members.

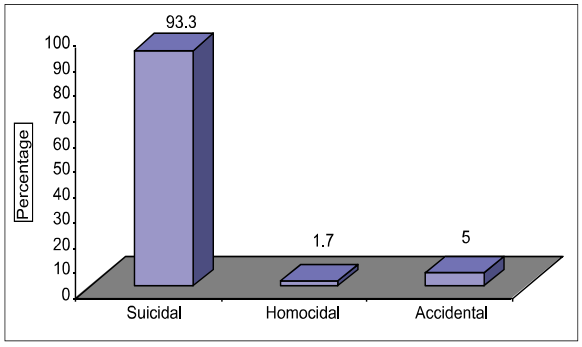



**Figure 2:** Showing intension of poisoning

Nearly three-quarter (73.3%) of the patients recovered completely, 13 (21.7%) patients died of the condition and the rest 3 (5%) were absconded.

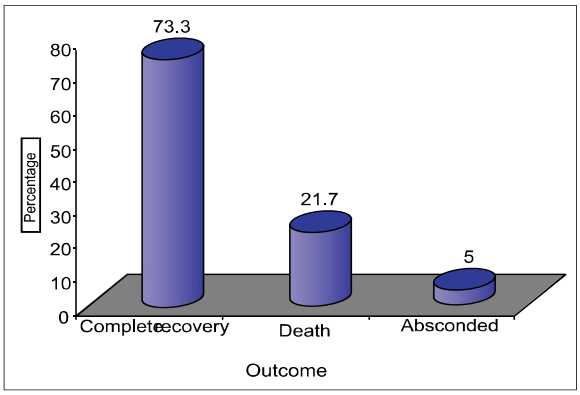



**Figure 3:** Showing outcome of treatment

**Discussion:**

Acute pesticide poisoning by organophosphorus compound has been found as a major clinical problem with 8% of poisoning with 22% mortality in an adult medicine unit in Dhaka Medical College Hospital, Dhaka, Bangladesh. In this study, most of the patients were 20 or below 20 years of age (31, 51.7%), 19(31.7%) patients were in between 21-30 years. The study shows that the incidence of pesticide poisoning was highest among the students (21, 35%), the next common group were housewives (18, 30%). Other occupations were businessmen (9, 15%), farmer (4, 6.7%), garment's worker (2, 3.3%), maid servant (3, 5%) and others 5%. The different source of collection of pesticide in this study shows purchase beforehand for household use 28(46.7%), self purchased poison over the counter 22(36.7%) and left over sample 9(15%). This finding indicates that pesticides are easily available and widely used in our country. The provision of safety handing of pesticide in the community is urgently required for prevention of pesticide poisoning. 98% of our patients were normal, healthy population and only 2% had known prior psychiatric illness. This finding suggests that pesticide poisoning is more common among normal population than population with mental disorders in Bangladesh. On the other hand poisoning by drugs are common in the west having prior mental illness[9]. In absence of diagnostic laboratory facility for poison detection visual inspection and identification was made in this study. The offending pesticide was brought by requesting the accompanying person to bring the container left in the vicinity of the occurrence or by requesting the victim to bring a similar agent used for the poisoning after recovery. Our study shows that the cause of death was acute cholinergic crisis in 8(62%) cases and respiratory paralysis in 5(38%) cases. The situation could be improved by introducing ICU care to OP poisoning cases.

**Conclusion:**

It is a simple observational study and though scientific diagnostic measurement was not possible it may not reflect the total pesticide poisoning situation of Bangladesh and much work is needed to tackle the situation like this. Survey in the community is necessary to assess the magnitude of pesticide poisoning in Bangladesh. National guideline about treatment should be introduced. Awareness of the public should be created for its prevention, for immediate first aid measures and quick hospital admission. Awareness of the doctors should be created by giving adequate importance of pesticide poisoning in undergraduate curriculum as well as by continued medical education. Monitoring and providing immediate prompt advice to physicians and patients.

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## Original Article

# Relationship between Hepatitis B Viral DNA Load and Hepatocellular Carcinoma

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**Abstract**

**Background:** Hepatitis B virus (HBV) infection, an established cause of hepatocellular carcinoma (HCC) and is associated with poor prognosis. It is the fifth most frequent cause of cancer related death in men and the ninth most frequent cause of cancer related death in women. High HBV DNA load has been identified as the most important predictor of the development of HCC in HBsAg patients. HBV DNA>$10^5$ copies/ml increases HCC risk associated with Hazard Ratio of 8.6(3.7-20.1) ($p<0.0001$), compared to HBV DNA<300 copies /ml (undeletable). Chronic hepatitis B virus carriers have a 100-fold relative risk of developing HCC comparing with non-carriers. Therefore we need to establish HBV DNA level in patients with HCC and to see the relationship between HBV DNA load and HCC was considered. **Methods:** This cross sectional, analytical study was done to measure HBV DNA load to evaluate its significance in the causation of HCC. This study was done in the Department of Hepatology BSMMU, Dhaka, Bangladesh from January 2006 to December 2007. After considering inclusion and exclusion criteria, 30 HBV and FNAC/liver biopsy proved HCC patients were taken as case group. 30 HBV related liver disease patients without HCC were enrolled as control group. **Results:** In this study 30 HBV related HCC patients had a high viral load (>$10^5$-copies/ml) while all of the control had low (<$10^5$-copies/ml) viral load. Comparison between groups was done by student's t-test and chi-square ($\chi^2$). Here the p-value was <0.001 which was less than 0.05 and was statistically significant. This study showed that HBV related HCC was associated with high HBV DNA load. **Conclusion:** From this study it was concluded that HBV DNA (PCR) levels were higher in patients with HCC compared with control subjects. This cross sectional study revealed that high viral load was associated with the development of HCC.

**Indexing words:** Hepatitis B, HBsAg, Hepatocellular carcinoma (HCC), HBV DNA (PCR)

**Introduction:**

Hepatitis B Virus (HBV) infection is an established cause of hepatocellular carcinoma (HCC) and is associated with poor prognosis[1]. Despite decades of experimental and epidemiological investigations and widespread acceptance of its carcinogenicity, the specific mechanisms by which this virus lead to HCC remain poorly understood.

It has been estimated that about 350 million people around the world are chronically infected with hepatitis B virus[1] accounting for around 1 million deaths each year related to chronic liver disease, cirrhosis and HCC[2]. Vast majority of this disease burden occurs in developing countries.

Geography plays an important role, whereby variation in the epidemiologic patterns of infection and the corresponding HBV prevalence crudely reflects HCC incidence patterns[2]. The greatest burden of HCC is in sub-Saharan Africa and parts of Asia, where HCC is the most frequent cause of cancer related death among men. Chronic HBV infection is highly prevalent and is the predominant risk factor for HCC in this high-incidence regions[3].

It is the fifth most frequent cause of cancer related death in men and the ninth most frequent cause of death in women[4].

Regardless of vaccination, large numbers of persons are infected with HBV or will be infected; several studies strongly supported the relation between the viral replication and the risk of

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HCC[4,5]. Relative risk of HCC among hepatitis B "e" antigen (HBeAg) positive patients is much higher than among inactive hepatitis B surface antigen (HBsAg) carriers. Furthermore, high HBV DNA load has been identified as the most important predictor of the development of HCC in HBsAg positive subjects with Hazard Ratio of 8.6 (3.7- 20.1) ($p<0.0001$), compared to HBV DNA <300 copies / ml (undetectable). HBV DNA 100,000 to 1 million associated with Hazard Ratio of 7.3 (3.3 – 16.4) ($p<0.0001$). HBV DNA 10,000 to 100,000 associated with Hazard Ratio of 2.8 (1.2 – 6.6) ($p<0.0173$). HBV DNA 300 – 10,000 associated with Hazard Ratio of 1.6 (0.7 – 3.9) (p 0. 2675)[6].

HBV DNA level- a measure of viral loads and can be measured by polymerase chain reaction (PCR)[7]. The HBV Rotor Gene-6000 (HBV RG) PCR kit, a HBV RG master contain all the reagents and enzymes (with the exception of $MG^{2+}$) for the specific amplification of a 110 b p sequence of the HBV genome and for the direct detection of the PCR product in cycling AFAM of the Rotor Gene-6000 instrument. In order to detect potential PCR inhibition in the absence of a HBV PCR product, the kit also contains an inhibition control monitor for the amplification efficiency of the system. The amplification – detection is carried out in Rotor–Gene 6000 sequence detector (Corbett Research).

Viral load is divided into three categories[6]:

Undetected- $<1.6\times 10^3$ copies/ ml, low titer- $< 10^5$ / ml and high titer- > or $=10^5$ copies/ ml. HBV DNA > 1 million copies/ml increases HCC risk.

Fine needle aspiration cytology (FNAC) is a useful technique, for assessing liver mass cytology both in inpatient and outpatient settings[8].

It allows a minimally invasive and rapid diagnosis of tissue. Aspiration is carried by a clinician or by a cytopathologist but cytological interpretation is done by an experienced cytopathologist.

More than 80% of HCC cases occur in individuals with cirrhosis of liver.

Therefore, treatment for the underlying liver disease may be best approach for prevention of HCC.

**Methods:**

This was a cross sectional analytical study carried in the department of Hepatology, BSMMU during the period of January 2006 to December 2007.

Enrolled patients for the study were divided into two Groups:

**Group-1:** Thirty patients of HBV related HCC were taken as case.

**Group-2:** Thirty chronic hepatitis B patients without HCC were taken as control

**Patients Selections**

**Group-1:**

**Inclusion Criteria:**

Positive serological test for HBsAg
Age: 15- 70 years
Alpha- fetoprotein: $\geq$ 400ng/ml
USG/CT evidence of liver SOL suggestive of HCC
FNAC/Biopsy proved HCC
Quantitative HBV DNA (PCR): HBV detected

**Exclusion criteria:**

Anti- HCV positive
Causes of CLD other than HBV
Bleeding disorder
Pregnant women
Metastatic liver Patient refuses FNAC/ liver biopsy

**Group-2:0**

**Inclusion Criteria:**

Positive serological test for HBsAg
Age: 15 to 70 year
Quantitative HBV DNA (PCR): HBV detected

**Exclusion criteria:**

Anti- HCV positive patients
Causes of CLD other than HBV
Raised $\alpha$- fetoprotein ($\geq$ 50 ng / ml)
USG/CT evidence of liver SOL suggestive of HCC

**Study Procedure:**

Patients presenting with HBsAg positivity at outpatient or inpatient department of Hepatology, BSMMU Dhaka, were purposively provisionally selected for study. HBsAg was detected by ELISA method using the kits "DiaSorin S.p.A. (Italy)".

Then detail history and physical examination were done. Ultrasonography/CT and alpha fetoprotein (AFP) were done in all patients.

After considering the inclusion and exclusion criteria, all patients were divided into two groups:

**Group-1:**
Thirty HBV patients presenting with AFP 400 ng/ml or more and ultrasound/CT evidence of SOL in the liver suggestive of HCC were included in group 1.

FNAC/ liver biopsy was done in all patients for the confirmation of HCC. After confirmation of HCC, HBV DNA (PCR) was done to see the viral load. HBV DNA was extracted from 200nL of each plasma sample by using HBV Real-TM Quant, Sacace Biotechnologies srl., Italy, following the manufacturer's instructions. The TaqMan chemistry is based for DNA analysis. The PCR primers are designed against a conserved region of the HBV genome, which includes the genes encoding the X-protein and DNA polymerase. The Rotor Gene-6000 (Corbett Research) was used for quantification of amplification at each cycle. The limit of detection for the assay was $5x10^2$ to $1x10^8$ copies/ml (without dilution).

HBV DNA (PCR) positive patients were included in the study as cases.

**Group-2:**
Thirty HBV patients with no evidence of SOL in the liver and AFP <50 ng/ ml. HBV DNA (PCR) was done in all patients and HBV DNA (PCR) positive patients were taken as control.
Individual patient had a code number. Data was collected from each patient by a questionnaire and was entered into a personal computer. It was thoroughly checked for any possible error and was analyzed by SPSS programmed. Significance of the test was tested by student's t-test and Chi-squared test ($\chi^2$). Result of test was statistically significant if p- value < 0.05.

**Results:**

**Age distribution:**
Table 1 shows the age distribution between groups. The highest (36.7%) age incidence of cases (HCC) was found at 50 or above 50 years of age followed by 33.3% between 40 – 50 years, 16.7% between 30 – 40 years and 13.3% between 20 – 30 years. None was found below 20 years. In the control group (CLD), 10% were below 20 years, 30% between 20 – 30 years, 13.3% between 30 – 40 years, 16.7% between 40 – 50 years and 30% 50 or above 50 years of age. The mean of the cases was higher (44.5 ± 12.4 years) than that of their control counterpart (37.7 ± 15.1 years), although the difference between the two groups was not statistically significant (p = 0.064).

**Table 1:** Age distribution between case and control (n = 60)

| Age (yrs) | Group | | p values |
|---|---|---|---|
| | Case(n=30) | Control(n=30) | |
| < 20 | 00 | 3(10.0) | |
| 20 – 30 | 4(13.3) | 9(30.0) | |
| 30 – 40 | 5(16.7) | 4(13.3) | |
| 40 – 50 | 10(33.3) | 5(16.7) | |
| ≥ 50 | 11(36.7) | 9(30.0) | |
| Mean ± SD | 44.5 ± 12.4 | 37.7 ± 15.1 | 0.064 |

Data were analysed using Chi-square ($\chi^2$) Test; level of significance was 0.05.

**Sex distribution:**
A male preponderance was observed in both cases and controls. Majority (96.7%) of the subjects in the case group was male, while 76.7% of the controls were male (Fig. 1).

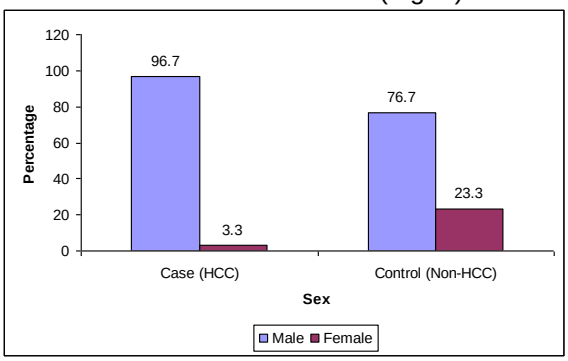



**Figure 1:** Age distribution between case and control.

**HBV DNA load:**
From the Table 2 it is seen that all of the subjects in the case group had HBV DNA load > $10^5$ copies/ml, while the entire control group had HBV DNA load ≤$10^5$ copies/ml (p <0.001).

**Table 2:** Comparison of HBV DNA load between groups (n = 60)

| HBV DNA (copies/ml) | Group | | p value |
|---|---|---|---|
| | Case(n=30) | Control(n=30) | |
| <= $10^5$ | 00 | 30(100.0) | < 0.001 |
| > $10^5$ | 30(100.0) | 00 | |

Figures in the parentheses denote corresponding percentage
Data were analyzed using $\chi^2$ Test.

**Discussion:**

To identify the relationship of HCC with HBV-related liver disease, we investigated HCC patients infected with hepatitis B virus and assessed the associated high HBV DNA load as a risk factor for HCC.

The study included thirty (30) HBV related HCC as cases (29 men and one women); mean age was 44.5±12.4 years (Table 1).
Thirty (30) HBV related liver disease without HCC were enrolled as control group (25 men and 5 women); mean age was 37.7±15.1 years (Table 2).The mean age of cases was higher (44.5±12.4 years) than that of their control counterpart (37.7±15.1 years). The highest age incidence of cases (HCC) was found at 50 or above 50 years of age. The mean age of our study population was similar to the study done by Ohata et al (2004)[9]. The hepatocellular carcinoma was seen predominantly in men and their 50s.

A male preponderance was observed in both cases and controls (in case 29 were male and one was female; in control 25 were male and 5 were female). Majority (96.7%) of the subjects in the case group was male, while 76.7% of the controls were male (Fig. 1).

In this study, among 30 HBV related HCC patients had a high viral load (>$10^5$) while all of the control had low (<$10^5$) viral load (Table 3). In HBV related liver disease patient, HBV-DNA was the strongest predictive factor for the development of HCC. Thus it was conceivable that patients with a high viral load may have a high potential for hepatocarcinogenesis

The results of this study were compatible with those of other study done earlier by Chen et al (2006)[6]. He did this study on 2763 HBsAg positive patients.

Another study done by Ohata et al (2004)[9] on 73 patients who were diagnosed with chronic HBV infection at Nagasaki University Hospital (Nagasaki, Japan) between January 1980 and December 1999. The significance of age, sex, habitual drinking, serum ALT level, HBV viral load, interferon treatment, hepatic fibrosis and hepatic inflammation on the development of HCC was examined using univariate and multivariate analyses. Multivariate analysis identified high viral load was an independent and significant risk factor (p=0.05) for HCC.

Comparison between groups was done by student's t-test and chi-squared test (χ2). Here the p-value was <0.001, which was less than 0.05 and statistically significant (Table 3). So hypothesis is accepted and mull hypothesis is rejected.

High viral load is a risk factor for HCC in patients with chronic hepatitis B viral infection.

**Conclusion:**

Individual with hepatitis B infection are at an increased risk of developing hepatitis B virus related liver complications including HCC. In some areas of Asia especially in Bangladesh, HCC is one of the most important cause of death due to cancer.

Worldwide more than 350 million individuals have hepatitis B virus infection and in endemic areas (including Bangladesh), the carrier rate is upto 10 to 20% of the population. Chronic hepatitis B virus carriers have a 100-fold relative risk of developing HCC comparing with non-carriers.

This study was done in the department of Hepatology, BSMMU, Dhaka from January 2006 to December 2007. HBV DNA measurement was done in HBV rel ated 30 HCC patients and also in 30 hepatitis B patients without HCC. It was found that among 30 HCC patients HBV DNA load was >105 copies/ml while all of the control had hepatitis B viral load <105 copies /ml.

This cross-sectional study that high viral load was associated with HCC. A growing number of studies support the clinical significance of quantitative HBV viral load measurement. High viral load was specially significant in subjects older age. Thus it is conceivable that patient with a high hepatitis B viral load have a high potential for hepatocarcinogenesis.

In conclusion, serum level of HBV DNA may be considered as a major risk factor for HCC.

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## Original Article

# Prevalence of Violent Asphyxial Death in Rangpur District of Bangladesh

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**Abstract**

**Background:** Death due to asphyxia is one of the most important causes in violent deaths. This provides one of the most complex controversial areas asphyxial deaths as the mechanism is uncertain and frequency of such deaths makes them a common problem for both Forensic Medicine Doctors and Jurists. **Methods:** It was a study of all medico-legal autopsies performed between Jan, 2006 and October, 2007 at mortuary of Rangpur Medical College, on the basis of history, preliminaries of the deceased where the victim died as a result of hanging, strangulation, smothering and drowning. **Result:** Incidence of violent asphyxial deaths, 22.5% of total 200 autopsies in the present study during January, 2006 and October, 2007. Hanging is the most common violent asphyxial death (84.9%). Incidence of female victim is more than male. The ratio between male and female was 5:6. **Conclusion:** Strangulation and smothering are usually homicidal in nature. Drowning and suffocation are always accidental in nature but suffocation may be homicidal in nature.

**Indexing words:** Asphyxia, Hanging, Strangulation, Smothering and drowning

**Introduction:**

In violent asphyxial deaths due to asphyxia are caused by failure of cells to receive or utilize oxygen as a result of mechanical interference with the process of breathing[1]. Violent asphyxia can be caused by: 1.Closure of the nose and mouth, 2.Constriction of the neck resulting blockage of the respiratory passage either the force from outside or body itself. 3. Occlusion of the lumen of the air passage by some materials. 4. Restricting the movement of the respiratory muscles[2] and 5. Irrespirable gases. Violent death resulting from asphyxia, includes death due to hanging, strangulation, suffocation and drowning (immersion)[3]. The hanging is commonly seen suicidal while strangulation and smothering are usually homicidal. Suffocation and drowning are usually accidental but suffocation may be homicidal. Drowning also may be suicidal or homicidal.

The present study was carried out with a view to study to incidence of violent asphyxia deaths with regard to key features that helps to differentiate different violent asphyxial deaths.

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**Methods:**

The present study on violent asphyxial deaths was carried out at Mortuary attached at Rangpur Medical College, between January, 2006 and October, 2007. A total of 200 autopsies were carried out during this period. Out of them in 45 cases (22.5%), the victim had died as a result of violent mechanical interference with respiration like, hanging, smothering and drowning. These 45 cases were meticulously studied by considering various parameters like preliminaries of the deceased, history, place of incidence and post mortem findings etc. The data were recorded on a specially designed proforma and tabulated studies.

**Results:**

Incidence of violent asphyxial death was 22.5% of total 200 autopsies in the present study (Table 1).

**Table 1:** Incidence of violent asphyxial deaths

| | |
|---|---|
| Total Number of autopsies | 200 |
| Number of violent asphyxial death | 45 |
| Percentage | 22.5% |

The classification of incidence of different violent asphyxial deaths in the present study is in Table 2. Hanging (84.4%) was the most commonly encountered violent asphyxial death followed by strangulation (8.9%) and smothering (4.4%) and

drowning (2.2%). From all the cases, the majorities were suicidal and a few of homicidal and accidental.

**Table 2:** Incidence of classification of various violent asphyxial deaths

| Causes of death | Percentage |
|---|---|
| Hanging | 38 (84.4%) |
| Strangulation | (8.9%) |
| Smothering | 02 (4.4%) |
| Drowning | 01 (2.2%) |

Male:Female 6:5

**Table 3:** Age and sex distribution of cases

| Age of the victims | Percentage |
|---|---|
| 11-20 yrs | 37.8% |
| 21-30 yrs | 28.8% |
| 31-40 yrs | 15.5% |
| 41-50 yrs | 8.8% |
| 51-70 yrs | 6.6% |

**Table 4:** Age and sex distribution of cases according to the mode of violent asphyxial death

| Cause of death | Sex | Age group | | | | | | Total |
|---|---|---|---|---|---|---|---|---|
| | | 0-10 | 11-20 | 21-30 | 31-40 | 41-50 | 51-70 | |
| Hanging | M | 00 | 04 | 05 | 02 | 03 | 02 | 16 |
| | F | 00 | 09 | 07 | 04 | 01 | 01 | 22 |
| Strangulation | M | 02 | 00 | 01 | 01 | 00 | 00 | 04 |
| | F | 00 | 00 | 00 | 00 | 00 | 00 | 00 |
| Smothering | M | 01 | 01 | 00 | 00 | 00 | 00 | 02 |
| | F | 00 | 00 | 00 | 00 | 00 | 00 | 00 |
| Drowning | M | 01 | 00 | 00 | 00 | 00 | 00 | 01 |
| | F | 00 | 00 | 00 | 00 | 00 | 00 | 00 |
| Total | | 04 | 14 | 13 | 07 | 04 | 03 | 45 |

Manner of death: 38(84.4%) out 45 cases of hanging were suicidal 6(13.3%) were homicidal and 1(2.2%) of drowning was accidental. Homicidal hanging or drowning is not recorded in the this study. All 6 (4 is strangulation and 2 is smothering) were homicidal.

**Table 5:** Manner of death

| Cause of death | Suicidal | Homicidal | Accidental | Total |
|---|---|---|---|---|
| Hanging | 38 | 00 | 00 | 38 |
| Strangulation | 00 | 04 | 00 | 04 |
| Smothering | 00 | 02 | 00 | 02 |
| Drowning | 00 | 00 | 01 | 01 |
| Total | 38 | 06 | 01 | 45 |

Reasons for death: Personal reasons were most commonly noticed for suicide by hanging followed by suffering from chronic disease and psychic disorder. 7 cases were noticed for suicide by hanging followed by family problem, 2 cases of hanging followed by social problem, 2 cases of hanging by domestic problem and 1 case of hanging due to extramarrital affairs. The reason of 12 cases of victim unnoticed for suicide by hanging. In 4 cases of strangulation– The 3 victims were strangulated due to revenge and I victim was strangulated for the robbery.

The reasons of among 2 smothering cases – 1 was domestic one was not known.

The reason of 1 drowning case was accidental.

**Table 6:** Reason for death

| Reason of death | Hanging | Strangulation | Smothering | Drowning | Total |
|---|---|---|---|---|---|
| Personal | 14 | - | - | - | 14 |
| Social/Family/ Domestic Problems | Family - 07<br>Social - 02<br>Domestic - 02 | - | - | - | 11 |
| Extramarrital affairs / sexual | 01 | - | - | - | 01 |
| Robbery/ Revenge | - | Robbery- 01<br>Revenge- 03 | Robbery-01<br>Revenge-01 | - | 06 |
| Not known | 12 | - | - | - | 12 |
| Accidental | - | - | - | 01 | 01 |
| Total | 38 | 04 | 02 | 01 | 45 |

Place of hanging: Most of the people 34 (89.47%) committed suicide by hanging within the closed secured places (at home) and remaining 4 were at open places.

**Table 7**: Place for hanging

| Place for hanging | No. of cases |
|---|---|
| Open place | 07 |
| Closed place | 31 |
| Total | 38 |

**Table 8:** Material used for hanging/ strangulation

| Ligature material | Hanging | Strangulation | Total |
|---|---|---|---|
| **Soft material:** | | | |
| Saree | 01 | - | 01 |
| Dhuti | 01 | - | 01 |
| Scarf | 07 | - | 07 |
| Muffler | o6 | 02 | 08 |
| **Hard material:** | | | |
| Rope | 23 | 01 | 24 |
| Electric wire | - | 01 | 01 |

Type of knot in hanging and strangulation: Table 9 showing type of knot in cases of hanging and strangulation were used in study.

31 cases (81.57%) out of 38 cases of hanging in present study had fixed knot and 7 cases (18.42%) out of 38 cases of hanging had running noose (slipping knot). 2 cases of strangulation had fixed knot.

**Table 9:** Type of knot in cases of hanging and strangulation

| Types of knot | Hanging | Strangulation |
|---|---|---|
| Fixed | 31 | 04 |
| Running | 07 | - |
| Total | 38 | 04 |

Type of hanging: Table 10 shows type of hanging occurred in present study. In our study only 5 (13.5%) victims were in partial hanging (kneeling down and flexed knee with touching the ground). The rest 33 (86.84%) were found fully suspended with feet clearly off the ground.
Recording typical hanging 8 cases (21.05%) out of 38 cases and rest were atypical hanging (78.94%).

**Table 10:** Type of hanging.

| On the basis of knot | Number |
|---|---|
| Typical | 30 |
| Atypical | 08 |
| **On the basis of degree of suspension** | |
| Complete | 33 |
| Partial | 05 |

There was only one case of drowning and place of drowning was in river. In our country, mass disaster also occurs by drowning in the river or sea of sinking of steamer or boat. It may be seen in the flood affected area of Bangladesh.
Table 11 is showing incidence of hanging according to religion. According to religion, Bangladesh is the muslim country and others only 10 -15% but the percetage of hanging is 21.05% comparatively is more than muslim.

**Table 11:** Incidence of hanging according to religion

| Religion | Sex | No. | Total | Percentage |
|---|---|---|---|---|
| Muslim | M | 12 | 30 | 78.95 |
| | F | 18 | | |
| Hindu | M | 04 | 08 | 21.05 |
| | F | 04 | | |
| Total | | 38 | 38 | 100% |

**Discussion:**
An increasing death rate as a result of violence constitutes a large group in medico-legal autopsies especially death due to asphyxia which is one of the most important cause in violent deaths. In present study, hanging is the most common adopted method of violent asphyxia. Hanging is noticed to be the most common type of violent asphyxial deaths.
In Patiala (India), Out of the 2110 cases being autopsied in mortuary, 111 cases were of violent asphyxia (5.26%). Among the 111 cases of violent asphyxia, drowning was 66(59.4%), Hanging 27(24.3%), Strangulation 6(5.4%), Drowning was found to be commonest of violent asphyxia death in this study[4].
In Jahangir Puri, North–West district, Delhi: a total 2479 medico-legal autopsies were conducted during the period from January 1, 2012 to December 2013, out of which 219 cases were due to violent asphyxia death, making the incidence rate 8.83%. Hanging 133 (60.73%), drowning 43 (19.63%), strangulation (ligature strangulation 20 (09.13%), manual strangulation 12 (05.47%) and smothering 07 (03.19%)[4].
In this present study, incidence of violent asphyxial deaths was 45 (22.5%) out of total 200 autopsies, January, 2006 to October, 2007. Hanging 38(84.4%), strangulation 04(8.8%), drowning only 01(2.2%). So, in Rangpur district, commonest violent asphyxia death was hanging.
In the study of Ahmed et al at Dhaka Medical College, Bangladesh, out of 574 hanging cases, 159(27.71%) were male and 415(72.29%)

female[5]. Out of 38 cases of hanging in the present study, male were 16(42.1%) and female were 22(57.89 %). The male and female ratio according to sex is 8:11.

Regarding the frequency of asphyxial death in relation to socio- economic status and religion in India, it was observed that most of cases of asphyxia deaths in North–West and Outer Delhi belongs to Hindu community 208 (94.97%), followed by Muslims 08 cases (3.65%). Sikhs and others were negligible (0.45%)[4].

In this study, in Rangpur District, out of 45 cases of asphyxial death, Muslim was 37(82.22%) and Hindu 8 (17.77).

The following are the age group of hanging: 0-10 years (10.5%), 11-20 years age group (34.21%), 21-30 years (31.57%), 31–40 years (15.78%), 41-50 years (10.5%), 31–50 years (26.31%), 51-70 years (7.89%). Most commonly involved 11-20 years age group (34.21%) and then the age group between 21-30 years (31.57%). So, 65.78% of total hanging occurred in 11–30 years age group. In the study of Ahmed et al most of the victims 269 (46.86%) were from the age group 21–30 years[5].

38 cases of hanging, out of 45 cases of violent asphyxial death were suicidal in nature i.e. hanging means suicidal hanging in the present study. Homicidal and accidental hanging is not recorded in this study. In this study, among 6 cases were homicidal (13.5%) of violent asphyxial death, only 1 case was accidental (2.6%) violent asphyxial death. Among the 6 homicidal cases, 4 strangulation was (8.9%) and 2 was smothering (4.4%).

Strangulation and suffocation are always homicidal in nature. It is considered that the manner of death in hanging is always suicidal. Homicidal hanging in our country, usually the death sentence passed by court which is implemented by hanging i.e Judicial hanging. Besides the judicial hanging, homicidal or accidental hanging is very rare. Homicidal or accidental is not recorded in this study. Strangulation and smothering were homicidal. Drowning is usually accidental. In the study, drowning was recorded as accidental on the basis of history of police and relatives of the deceased as well as post mortem findings.

Reasons for death – In our study, reasons of death from hanging due to personal/ social/ familial/Extramarital affairs were the main cause 26(68.42%). Marital disharmony/quarrel between couples was the main cause 172(29.96 %) found for suicidal hanging[5]**.**

Due to population explosion, poverty and increasing mental stress and strain in our daily life style, as a result; incidence of these events is increasing gradually.

Considering above facts, it is important to diagnose and differentiate between different asphyxial deaths especially between hanging and strangulation by ligature. In addition to the present study was conducted to study the incidence methods adapted, demographic variable and post mortem findings in violent asphyxial deaths at mortuary, Rangpur Medical College.

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## Original Article

# Assessment of Selected Risk Factors of Ca-cervix among Bangladeshi Women

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**Abstract:**
**Context:** Among the cancers, Ca-cervix is at present the most common for the poor female population of Bangladesh. This descriptive cross-sectional study was conducted with an aim to find out the risk factors of the patients suffering from carcinoma cervix. **Methods:** The study was done at the outpatient department of National Institute of Cancer research & Hospital, Mohakhali, Dhaka with the collaboration of Department of Epidemiology of the same institute. Non-probability purposive sampling method was adopted. Data was collected from 84 histologically diagnosed cases of cervical cancer patients who came for treatment from different areas of the country. A common structured questionnaire was used in respect of each respondent to collect data. **Results:** The mean ± SD of age of the respondents was 46.68 ± 8.71 years. Out of 84 respondents only 11(3.09%) gave history of smoking. Among the respondents 86.9% got married once and 13.1% married twice. 11.9% had history of sexual multipartnership and 13.1% had history of sexually transmitted infection. Out of 84 respondents 27.4% had history of using oral contraceptive pill. **Conclusions:** It was a hospital based study on cancer cervix and duration of study was about one month. Further in depth studies with larger sample size is required to be carried out to find out further details of the risk factors of Ca-cervix patients.

**Indexing words:** Risk factors, Ca-cervix

**Introduction:**
Worldwide, cervical cancer is the fifth most deadly cancer in women. It affects about 1 per 123 women per year and kills about 9 per 100,000 per year[1]. In the United States, it is only the 8th most common cancer of women. In 1998, about 12,800 women were diagnosed in the US and about 4,800 died. Among gynecological cancers it ranks behind endometrial cancer and ovarian cancer. The incidence and mortality in the US are about half those for the rest of the world, which is due in part to the success of screening with the Pap smear[2]. In Great Britain, the incidence is 8.8/100,000 per year (2001), similar to the rest of Northern Europe, and mortality is 2.8/100,000 per year (2003) (Cancer Research UK Cervical cancer statistics for the UK). With a 42% reduction from 1988-1997 the NHS implemented screening programme has been highly successful, screening the highest risk age group (25-49 years) every 3 years, and those ages 50-64 every 5 years. One study suggests that prostaglandin in semen may fuel the growth of cervical and uterine tumors and that affected women may benefit from the use of condoms[3]. Studies suggested that cervical cancer was common in female sex workers. It was rare in nuns, except for those who had been sexually active before entering the convent. It was more common in the second wives of men whose first wives had died from cervical cancer[4].

The cervix is the commonest site for female genital cancer in the 3rd world countries like Bangladesh. Statistics vary considerably from country to country and from race to race. So in African and Asian woman living in poor conditions the incidence and relative mortality rate of carcinoma of the cervix may be four to five times higher than those seen in developed countries. It can occur at all ages even at birth. It has two peaks, one at about 35 yrs and another at about 50-55 yrs. It is 20 times more common amongst the wives of unskilled laborers. The risk factors of cervical cancer are often found in the socio-demographic characteristics of the patients. Illiteracy, ignorance, unawareness, poor sexual/genital hygiene, sexual/child bearing practice etc have got link with Ca-cervix in a developing country like Bangladesh. The

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possible operating factors are low standard of cleanliness (including penile hygiene), coitus or marriage at an early age, frequent of sexual intercourse, early bearing of 1st child, multiple sexual partners and promiscuity of both partners[5].

Among the others, venereal disease, Herpes & human papilloma virus infection, cigarette smoking are also associated with higher incidence of cervical cancer. Using birth control pills for a long time (5 or more years) may increase the risk of cervical cancer among women with HPV infection. Diethylstilbestrol (DES) may increase the risk of a rare form of cervical cancer[1]. These factors may act together to increase the risk even more.

Most of the developed countries of the World have reduced the incidence and prevalence of cancer cervix but in Bangladesh the incidence and prevalence of cancer cervix is still too high. Analyzing the current situation and its future impact, it can be said the figure of cancer cervix are likely to be increased in the days to come if necessary preventive measures are not taken. Bangladesh though a developing country in the world and over whelmed with communicable diseases, as well as non communicable diseases and cancer is one of them. Therefore, a study on cancer cervix is considered necessary to explore the risk factors.

The study would significantly contribute in the detection of magnitude of the problem and prescribe preventive interventions to control the initiation and progression of carcinoma cervix among the poor as well as rich female population of Bangladesh. Furthermore, the study would help to identify the social and demographic risk factors that have link with carcinoma cervix so that some intervention strategies could be developed which would be appreciated by the concern authority to frame up guideline for reduction of carcinoma cervix patients to an appreciable level. Measures to change modifiable variables to remain free from disease or prolonged carcinoma cervix free state of its sufferers would contribute to enhance quality of life of the female population of Bangladesh. Bangladesh has been experiencing an epidemiological transition from communicable diseases to non-communicable diseases. The Health Nutrition, Population Sector Programme (HNPSP) has identified three non-communicable diseases cancer, cardiovascular diseases and diabetes mellitus-as major public health problems in Bangladesh[6]. So, the present study to assess the risk factors of ca-cervix would help the women to avoid the risk factors.

**Methods:**

This was a descriptive cross sectional study conducted at National Institute of Cancer research & Hospital, Mohakhali, Dhaka, from 01 January to 30th June 2008. All the diagnosed patients of carcinoma cervix treated at NICRH, who were willing to participate to the study, were included in the study by purposive sampling technique and were interviewed. After getting the approval of the research proposal from the protocol acceptance committee, formal permission was obtained from administrative authority of NICRH and the authority welcomed the researcher to carry out such research. The study required some personal information from respondents so before collection of data informed consent was taken from respondents. A pre-tested data collection sheet was prepared.

After explaining the purpose of the study to respondents and obtaining verbal consent, the researcher interviewed all of them face to face by asking questions. Respondents were encouraged to tell their problems in their own language specially in Bengali language. Respondents were given full assurance on some ethical points of view that under no circumstances, any findings of the interview will be disclosed to any unauthorized persons or to the service authority. They were asked for some risk factors of Ca-cervix like habits of smoking, H/O multiple marriages, sexual mutipartnership, use of oral contraceptives and previous STDs. Each questionnaire was minutely checked, verified and corrected on the spot following the interview. After completion of data collection, the data were consolidated, processed and edited to reduce errors. The data were entered into the computer and analyzed with the help of SPSS windows program version 12.0 by the researcher himself.

**Results:**

This was a descriptive cross-sectional study conducted at National Institute of Cancer research and Hospital, Mohakhali, Dhaka. The main objective of the study was to assess the

risk factors of the carcinoma cervix patients those who are reporting to OPD at NICRH.
Among the respondents 11 (13.09%) were smoker and 73 (86.90%) were non-smoker (Table 1).

**Table 1:** Distribution of respondents by smoking habit (n=84)

| Habit | No of patients | Percentage |
|---|---|---|
| Smoker | 11 | 13.09 |
| Non-smoker | 73 | 86.90 |
| **Total** | **84** | **100.0** |

Among the study subjects 73 (86.9%) were married once in their life time and rest 11 (13.1%) were married twice in their life (Table 2).

**Table 2:** Distribution of respondents by no of marriage (n=84)

| No of marriage | No of cases | Percentage |
|---|---|---|
| One | 73 | 86.9 |
| Two | 11 | 13.1 |
| **Total** | **84** | **100.0** |

Among the respondents 10 (11.9%) had a H/O sexual multipartnership and 74 (88.1%) had no such history (Table 3).

**Table 3:** Distribution of respondents by sexual multipartnership (n=84)

| Sexual multipartnership | No of cases | Percentage |
|---|---|---|
| YES | 10 | 11.9 |
| NO | 74 | 88.1 |
| **Total** | **84** | **100.0** |

Among the respondents 23 (27.4%) had H/O using OCP on regular and irregular basis and 61 (72.6%) did not use any OCP in their life time. Among the respondents mean year of use of OCP were 7.26 yrs with SD±3.58 yrs. Duration of use of OCP were from 1-15 yrs. (Table 4).

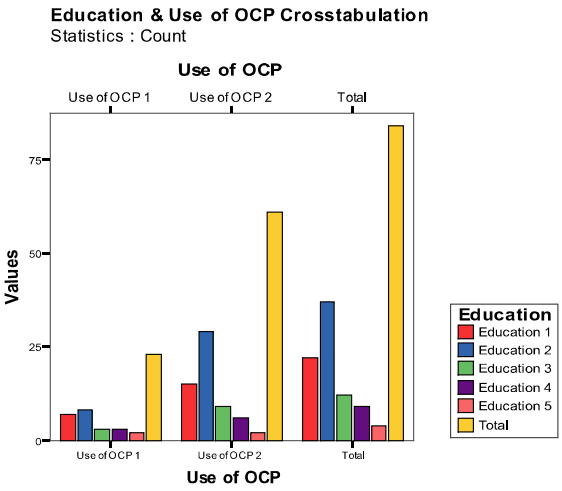
**Table 4:** Use of Oral contraceptive (OCP) by the Respondents (n=84)

| Use of OCP | No of cases | Percentage |
|---|---|---|
| Yes | 23 | 27.4 |
| No | 61 | 72.6 |
| **Total** | **84** | **100.0** |

Among the respondents 11 (13.1%) had previous H/O STD and most of them suffered from either syphilis or gonococci infection but none of them had any H/O suffering from HPV infection. Rest 73 (86.9%) had no H/O any STD (Table 5).

**Table 5:** Distribution of H/O previous STDs by the respondents (n=84)

| H/O STDs | No of cases | Percentage |
|---|---|---|
| Yes | 11 | 13.1 |
| No | 73 | 86.9 |
| **Total** | **84** | **100.0** |




**Discussions:**

Bangladesh is poverty-ridden country. The vast majority of the people are still ill-fed, ill-clothed, ill-housed, Ill-educated and ill-cared in health services. The percentage of absolute poor is one of the highest in the world. Ppoor and unhygienic condition has a direct relation with carcinoma cervix. All sexually active women are at risk for the development of cervical cancer. The risk seems to be increased with smoking and promiscuity of the woman or her male partner. This is the standard text book explanation for an increased risk. But, in my experience, it is not a likely explanation for the patients that have been treated. It is not increased by the use of birth control pills, family history or the development of genital warts. Almost all cases occur in women who have not had regular screening with Pap tests. This is one cancer that can be prevented, in most cases, by screening for the premalignant changes[7].

The result of the study may not have external validity as because the study population was selected from those who are willing to get treatment in this Hospital and economically viable to come to Dhaka from different corner of our country. It was not a random selection from the population of our country.

The present study depicted that out of 84 Ca-cervix patients who were taken as study subjects 11 (13.09%) were smoker and remaining 73 (86.9%) were non-smoker (Table 1). A similar study conducted in 2005 at Cancer Hospital revealed that 5.5% female cancer patients (all sites) had a history of smoking[8]. From the present study it is assumed that among the female population habit of smoking is increasing. Urbanization and change of social phenomenon may be a factor of increase smoking among the female population. Among the 11 smoker patients mean duration of smoking were 9.27 yrs with SD±4.79 yrs and minimum duration was 3 yrs and maximum was 20 yrs.

Among the respondents 73(86.9%) woman were married once in their lifetime and 11(13.1%) woman had a history of being married twice (Table 2).This figure may be taken as normal in our social life. poverty, illiteracy, early marriage and different gynecological problem may be associated with divorce.

In the study it was found that maximum respondents 88.1% (74) did not have any history of sexual multipartnership, only 11.9% (10) given history of multiple sex partner (Table 3). Bangladesh is a moderate Muslim country, people are very conservative here and that is why prevalence of HIV/AIDS is still very low. But in the recent past year modern amusement like mobile phone, satellite TV, computerization etc making out society fast and sexual crime and sexual polygamy is increasing.

Among the respondents 27.4% (23) woman regularly or irregularly used OCPs to control fertility. Rest 72.6% (66) did not used any OCP in their lifetime. Duration was 1-15 years among the OCP users and mean duration was 7.26 with SD±3.58 yrs (Table 4). Out of 84 patients 13.1% (11) had H/O previous STD infection (Table 5). Most of them had given history of either syphilis or gonococci infection. None had any history of HPV infection which is now considered the most precipitating factor for Ca-cervix.

The widespread introduction of the Papanicolaou test, or pap smear for cervical cancer screening has been credited with dramatically reducing the incidence and mortality of cervical cancer in developed countries. The pap smear suggests the presence of cervical intraepithelial neoplasia (premalignant changes in the cervix) before a cancer has developed, allowing for further workup. Recommendations for how often a Pap smear should be done vary from once a year to once every five years.

The HPV test is a newer technique for cervical cancer triage which detects the presence of human papillomavirus infection in the cervix. It is more sensitive than the pap smear (less likely to produce false negative results), but less specific (more likely to produce false positive results) and its role in routine screening is still evolving. Since more than 99% of invasive cervical cancers worldwide contain HPV, some researchers recommend that HPV testing be done together with routine cervical screening. But, given the prevalence of HPV (around 80% infection history among the sexually active population) others suggest that routine HPV testing would cause undue alarm to carriers.

HPV testing can reduce the incidence of grade 2 or 3 cervical intraepithelial neoplasia or cervical cancer detected by subsequent screening tests among women 32-38 years old according to a randomized controlled trial. The relative risk reduction was 41.3%. For patients at similar risk to those in this study (63.0% had CIN 2-3 or cancer), this leads to an absolute risk reduction of 26%.

Yasmeen conducted a case control study among 150 cervical cancer patients and 300 age-matched controls at the community between July 2004 to June 2005 at NICRH, Mohakhali, Dhaka. The socio-demographic characteristics revealed that most of the cases were in the age range of 36-45 yrs with a mean of 46.32 years and SD±7.47 years. Majority of cases were Muslims (85.3%), housewives (85.3%) and illiterate 60%.Statistically significant relationship of cervical cancer was found in respect to religion, occupation, educational status and monthly family income. Most of the cases were married (79.3%), majority (94.5%) of cases used OCP and ±years for most of the cases (93.3%). Age of 1st sexual contact was between 10-15 years and

1st child bearing age was between 13-18 years. Regarding the number of children 59.7% of the cases had 5-9 children[9].

**Conclusions:**

Ca cervix is the most common cancer among the female in Bangladesh. The disease has a long latent period and early diagnosis can cause cure rate almost 100%.VIA is a very low resources important method for early detection of Ca-cervix and can by applied for high risk group for detection of cervical cancer and safe the life of poor woman of this country.

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## Original Article

# Maternal Outcome of Twin Pregnancy in a Tertiary Level Hospital

**Shahi Farzana Tasmin[1], Fouzia Akhter[2], Neaz Ahmed[3]**

**Abstract**

**Context:** The objective of this longitudinal study was to find out the maternal outcome of twin pregnancy. **Methods:** Patients with twin pregnancy admitted in the Obstetric ward of Rangpur Medical College Hospital during May 2017 to October 2017 were included in the study. In total of 60 respondents of different socioeconomic class were selected purposively and data were collected in a preformed questionnaire sheet. **Results:** Mothers were aged between 21-30 years. 51% ($p< 0.001$) mothers were devoid of risk factors, 82% ($p<0.001$) mothers had complications, among them PROM ($p< 0.05$) was highest and complications were higher in the mothers who didn't taken any type of antenatal care before appearing in the hospital ($p< 0.001$). The evaluation very clearly justified the need of antenatal care and check up to reduce the maternal complications.

**Indexing words:** Twin pregnancy, Maternal outcome, Antenatal care

**Introduction:**

Twin pregnancy has always been a subject of interest to Obstetricians and Pediatricians alike.[1] When more than one fetus simultaneously developed in the uterus is called multiple pregnancy. Simultaneous development of two fetuses (Twin) is the most common,[2] Twinning is a multi factorial phenomenon principally attributed to genetic and environmental factors, such as advanced maternal age and increased parity.[3-] Infertility treatment such as ovulation induction, in vitro fertilization, and intra cytoplasmic sperm injection as one of the predisposing factors of twin gestations , since fertility decreases with age.[4]

The frequency of twinning is highest among the black race such as Nigeria and consistently low among Orientals, Caucasian is in between the two extremes[5] In a study of India incidence of twin was 14 per 1000 deliveries.[6] In a study of Bangladesh incidence of twin pregnancy is 1.66%.[7]

Both maternal and perinatal mortality and morbidity is higher in multiple pregnancy then in singleton pregnancy.[8] Perinatal mortality (PNM) in twin is 4 times higher & in triplets 6 times higher than in singleton pregnancy.[9] When analyzed according to chorionicity, monochorionic pregnancies present a two to three times higher risk than dichorionic pregnancies.[10] In case twin pregnancies approximately one-third of these births are spontaneous, and 10% of the births occur after preterm prelabor rupture of membrane.[11]

The main cause of maternal mortality & morbidity in twin pregnancy are increased incidence of anemia, polyhydramios, pregnancy induced hypertension, gestational diabetes, ante partum hemorrhage, PROM, pre term labor, increased rate of operative interference, postpartum hemorrhage (PPH) and puerperial sepsis.[12]

The aim of this study was to determine the maternal outcome in twin pregnancy which is considered as a high risk pregnancy in a tertiary hospital.

**Methods:**

This longitudinal study was done to find out the maternal outcome of twin pregnancy in a tertiary level hospital. The study subjects were selected purposively those who were admitted with twin pregnancy of different socioeconomic group from May 2017 to October 2017. In total 60 respondents were selected and divided in to three groups, one group taken regular antenatal check up, one group taken irregular antenatal

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check up and another group taken no antenatal check up. Following informed consent each subject was interviewed through a questionnaire covering parameters age, socioeconomic status and level of education. The maternal outcome of each mother of different group was then observed very carefully. Data were processed using the computer soft ware SPSS and test of proportion was done for statistical analysis.

**Results:**

Table 1 shows sociodemographic findings of the patients. 85% patients were Muslim. 65% patients came from rural area. Here majority patients (30%) passed SSC and 26% patient had primary education. 55% patients came from lower socio economic society. 63% patients were multigravida. 63% patients had antenatal check up. Among them 33% had regular and 30 % had irregular ante natal checkup.

**Table 1:** Socio demographic profile of the study subjects (n = 60)

| Variables | Frequency | Percentage (%) | p Value |
|---|---|---|---|
| **Religion** | | | |
| Islam | 51 | 85% | <0.001 |
| Hinduism | 09 | 15% | |
| **Residence** | | | |
| Rural | 39 | 65% | <0.001 |
| Urban | 21 | 35% | |
| **Level of education** | | | |
| Illiterate | 06 | 10% | <0.01 |
| Primary | 16 | 26% | |
| SSC | 18 | 30% | |
| HSC | 13 | 22% | |
| Graduate | 07 | 12% | |
| **Socio economic status** | | | |
| Lower | 33 | 55% | <0.001 |
| Middle | 19 | 32% | |
| Higher | 08 | 13% | |
| **Parity** | | | |
| Primi | 22 | 37% | <0.001 |
| Multi | 38 | 63% | |
| **Ante-natal checkup** | | | |
| Regular | 20 | 33% | <0.01 |
| Irregular | 18 | 30% | |
| None | 22 | 37% | |

Table 2 shows the risk factors for twin pregnancy. 51% conceived spontaneously, 20% patients had history of ovulation induction and 12 % had ART. History of twin pregnancy in the family was 17% of patients (p< 0.01).

**Table 2**: Risk factors (n=60)

| Risk factors | Frequency | Percentage (%) | p Value |
|---|---|---|---|
| Family history | 10 | 17% | |
| Twin pregnancy after ovulation induction | 12 | 20% | <0.001 |
| ART | 07 | 12% | |
| None | 31 | 51% | |

Table 3 shows the frequency of maternal complications. In 18% patients, no maternal complication was found. Remaining 82% patients present with one or more complications (p< 0.001). 45% patients complain PROM. 35 % had preterm labor. 32% patients had gestational HTN, 13% suffering from GDM and polyhydramions and 23% patient suffering from anemia. 7% patients complain APH. PPH occurred in 12% patients. Eclampsia also occurred in 5% patients.

**Table 3:** Complications encountered by the mothers (n=60)

| Complications | Frequency | Percentage (%) |
|---|---|---|
| Anemia | 14 | 23% |
| Hyperemesis gravidarum | 05 | 08% |
| Gestational HTN except eclampsia | 19 | 32% |
| Eclampsia | 03 | 5% |
| GDM | 08 | 13% |
| Polyhydramions | 08 | 13% |
| Pre term labor | 21 | 35% |
| PROM | 27 | 45% |
| APH | 04 | 7% |
| PPH | 07 | 12% |
| No Complications | 11 | 18% |

Table 4 shows the relation between antenatal check up and maternal complications. Maternal complications was present in 65% of mothers

who had taken regular antenatal check up, maternal complications was present in 78% of mothers who had taken irregular antenatal check up and maternal complications was present in 100% of mothers who didn't taken any type of antenatal check up (p< 0.001) .

**Table 4:** Relationship of ante natal check up with maternal and perinatal complication (n=60)

| Antenatal Checkup (n= 60) | Regular (n=20) | | Irregular (n=18) | | None (n=22) | | X2 | *P value* |
|---|---|---|---|---|---|---|---|---|
| | No | % | No | % | No | % | | |
| Yes | 13 | 65% | 14 | 78% | 22 | 100% | 36.13 | <0.001 |
| No | 07 | 35% | 4 | 22% | 00 | 00% | | |

Regarding mode of delivery, Table 5 shows that commonest mode of delivery was cesarean section (60%) and vaginal delivery had occurred in 40% patient

**Table 5:** Mode of delivery (n=60)

| Mode of delivery | Frequency | Percentage (%) |
|---|---|---|
| Vaginal | 24 | 40% |
| a) Spontaneous | 13 | 22% |
| b) Assisted breech delivery | 11 | 18% |
| LUCS | 36 | 60% |
| a) Emergency | 22 | 37% |
| b) Elective | 14 | 23% |

**Discussions:**

Majority of the cases in this study were in between 21 and 30 years and this is probably due to early marriage. Most of the cases were from rural area (65%) and from low socioeconomic group (55%) and middle class (32%) probably due to low cost of treatment in government hospital.

Regarding maternal complication, in this study, 18% patients had no maternal complication. Remaining 82% patients present with one or more complications. 45% patients complain PROM. 35% had preterm labor. 32% patients had gestational HTN, 13% suffering from GDM and polyhydramions and 23% patient suffering anemia. 7% patients complain APH. PPH occurred in 12% patients. Eclampsia also occurred in 5% patients. In the study of Chowdhury and Hossain[13], Bangal et al[3] and Sultana et al[10] anemia present in 35.8%, 66% and 26% cases respectively. This was higher in respect of this study, difference of anemia cases between the present study and the previous study was probably due to improvement in ante natal care in our country. In the present study PROM and preterm labor had highest percentage which was similar with the study of Chiittacharoen et al[14] where pre term labor occurred in 40.2% and 48% cases. Consistent with the findings of the study of Chowdhury and Hossain[13], Bangal et al[3] and Sultana et al[10] percentage of gestational HTN also high in this study. The mode of delivery of the study subjects in this study was by LUCS (60%) and 40% patients vaginally. This study was almost similar with the study Chittachareon et al[14] in India where commonest route of delivery was LUCS (58.3%) but not consistent with the study of Gajera et al[4] where commonest route of delivery was vaginal delivery. In this study shows malpresentation is the commonest (36%) indication for caesarean section. Maximum patient has more than one indication for cesarean section. 31% patient had eclampsia and severe pre eclampsia.17% patient had history of previous caesarean section. 13% LUCS was done due to fetal distress and 3% due to placenta previa. This study is almost similar with the study of Dera et al[15] where malpresentation was the commonest indication (40%) for LUCS. In the present study 67% patients took ante natal checkup and 33 % patient had no antenatal check up. The findings of the study Nimbalkar et al[9] 59% were took antenatal care and 41% had no ante natal care. Study by Gajera et al[4] in India also showed that majority of the patient took antenatal check up. Ante natal checkup is very essential when a woman become pregnant. Various studies suggested that it is closely related to maternal and perinatal outcome and has strong influence on mode of delivery. This was also evident in this study. The study conducted by Blondel et al[16] in United kingdom named "Poor antenatal care and pregnancy outcome" found that women with poor antenatal care have a greater risk for adverse pregnancy outcome like higher rates of perinatal mortality, preterm delivery and low birth weight babies that is also evident in this study. The variation in percentage of antenatal checkup could possibly be due to educational background and social awareness among general people about maternal care. Moreover, the increased amount of antenatal care in Bangladesh probably could be the combined effect of

Government and NGO services to increase awareness regarding these issues.

**Conclusion:**

This study shows twin pregnancy has high maternal and neonatal complications. This complications associated with twin pregnancies cannot be prevented but by proper and regular antenatal care this can be detected early and controlled by proper and prompt management. Timely diagnosis and treatment of deficiency anaemia and pre eclampsia helps in preventing additional complications.

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## Original Article

# Medical Management of First Trimester Missed Abortion Using Single Dose of Vaginal Misoprostol

**Anisa Begum[1], Hashiba Moontaha[2], Most. Sharifa Begum[3]**

**Abstract:**
**Objective:** The objective of the study was to evaluate the efficacy and safety of vaginal misoprostol in termination of first trimester missed abortion. **Methods:** This was a prospective study carried out from January 2018 to December 2018 among women of first trimester missed abortion attending the private chamber and in Gyne department of Rangpur Medical College Hospital. The inclusion criteria were gestational age of less than 12 weeks. The exclusion criteria were patients with gestational age more than 12 weeks, bronchial asthma, heart diseases. A total 80 patients at 7-12 weeks of gestation of missed abortion requiring termination of pregnancy were included. Single dose of misoprostol 2 tablets of 800 ugm was placed high in vagina (posterior fornix). Women were advised to come after 7-10 days for followed up. **Result:** Successful abortion observed in 74 (92.5%) patients. Six (7.5%) patients needed surgical evaluation due to incomplete abortion and non-responding to vaginal misoprostol. **Conclusion**: A single dose of 800 ugm vaginal misoprostol is a safe, effective and economic drug for induction of first trimester missed abortion.

**Indexing words**: Vaginal misoprostol, Missed abortion

**Introduction:**
Abortion is one of the most common complications of pregnancy occurring in clinically recognized pregnancies.[1] One third (30%) of worlds maternal deaths occurs in South Asia (Bangladesh, Nepal, India, Pakistan and Srilanka) and approximately 13% of them are related to abortions and its procedures.[2]

Missed abortion occurs when the embryo or fetus has died, but a miscarriage has not yet occurred.

Missed abortion is a case of worry both for the patient and the gynecologist. There are different treatment options available for treatment of early pregnancy. Surgical evacuation including dilatation and curettage, manual vacuum aspiration was the treatment of choice before medical treatment. But due to increased morbidity associated with surgical procedure, studies are going on to determine the efficacy and safety of medical treatment.[3]

Prostaglandins have emerged as the agents of choice for medical treatment of first trimester pregnancy loss. There are reports of use of vaginal misoprostol alone for abortion and of claims that it is better than oral misoprostol.[4]

Vaginal route appears to be the most effective than sublingual and oral being the least effective. Sublingual misoprostol needs a more frequent administration i.e. every three hours to achieve a similar effectiveness to the vaginal route.[5,6,7]

Vaginal misoprostol causes gradual non traumatic dilatation of cervix, separation and expulsion of products. Few cases require surgical evacuation (MVA) to remove retained products.

So, the aim of the present study was to evaluate the efficacy and safety of vaginal misoprostol in termination of first trimester missed abortion.

**Methods:**
This was a prospective study carried out from January 2018 to December 2018 among women of first trimester missed abortion attending the

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private chamber and in Gyne department of Rangpur Medical College Hospital. The inclusion criteria were gestational age of less than 12 weeks. The exclusion criteria were patients with gestational age more than 12 weeks, bronchial asthma, heart diseases. A total 80 patients at 7-12 weeks of gestation of missed abortion requiring termination of pregnancy were included. Single dose of misoprostol 2 tablets of 800 ugm was placed high in vagina (posterior fornix). Women were advised to come after 7-10 days for followed up.

**Result:**
A total of 80 patients were included in the study. The demographic characteristics of patients are shown

Age range was from 16-40 years and parity range from primigravida to grand multipara.

**Table 1:** Demographic characteristic of the patients

| Age in year | Number of patients | Percentage |
|---|---|---|
| 16-20 | 24 | 30% |
| 21-30 | 38 | 47.5% |
| 31-40 | 18 | 22.5% |
| **Parity** | | |
| Primigravida | 60 | 75% |
| 1-4 | 12 | 15% |
| >4 | 8 | 10% |

Table 2 shows the side effects of misoprostol. Among 80 cases, 6 - cases had minor side effect like - Nausea, Pyrexia, & 2 cases had heavy bleeding, & 2 cases had severe pain. 70 cases did not show any significant side effect.

**Table 2:** Side effects with misoprostol

| Side effects | Number of patient | Percentage |
|---|---|---|
| Nausea | 2 | 2.5% |
| Pyrexia | 4 | 5% |
| Heavy bleeding | 2 | 2.5% |
| Severe pain | 2 | 2.5% |

Table 3 shows the interval between induction and abortion. Among 80 cases, 70 cases had complete expulsion within 48 hours & 2 cases after 48 hours, 4 incomplete abortion & 2 had no response.

**Table: 3** Induction-abortion interval

| Interval in hours | Number of patient | Percentage |
|---|---|---|
| <8 | 02 | 25% |
| 8-16 | 52 | 65% |
| >16-24 | 12 | 15.5% |
| >24-48 | 06 | 7.5% |
| >48-7 days | 02 | 2.5% |

Patient advised to come after 7-10 days of misoprostol and ultrasonography (USG) was done to see uterus and product of conception present or not within the uterus.

Our outcome measures included induction expulsion interval, success rate and the occurrence of side effects with vaginal misoprostol.

In our study, 4 patients had incomplete abortion and 2 patients had no response. We managed those patients by MVA (manual vacuum aspiration)

Vaginal misoprostol treatment appeared to be well tolerated. Out of 10 patients, 6 patients had minor complaints, like nausea and pyrexia, 2 patients had heavy bleeding and needed blood transfusion and 2 patients had severe pain which was treated by tab. Paracetamol 3 doses. Routine antibiotic coverage was not necessary.

**Discussion:**
Missed abortion is a common complication of early pregnancy, occurring upto 15% of clinically recognized pregnancies.[8]

Due to wider availability of ultrasonography, most of the patients were diagnosed by USG before symptoms of missed abortion appear like vaginal bleeding or brownish vaginal discharge associated with lower abdominal pain.

In the last two decades, medical termination of pregnancy has become a safe alternative to vacuum aspiration and dilatation and curettage.[9]

Traditional methods of surgical evacuation of uterus are associated with major morbidity in upto 1% women and minor morbidity in 10%.

Recently misoprostol regimen has become more widely available and is now considered to be the gold standard for early pregnancy termination.

In our study successful abortion occured in 74 cases (92.5%). It is in accordance with other cases studies. [10,11,12,13]

In a study by Refaey et al it was found that vaginal misoprostol administration was more effective than the oral route. The local effect of misoprostol on the cervix was considered to be one of the reason.[14]

Our study demonstrates that vaginal administration of misoprostol is very effective. This may be because of higher uterine levels of misoprostol due to direct absorption from the posterior fornix and local effect of misoprostol on uterine cervix.

Zalanyi[15], and Thomas and Habeebullah[16] have successfully managed missed abortion medically without progesterone antagonist. Lee et al[17] also indicates that the medical treatment of abortion with misoprostol is psychologically safe and has higher client acceptance and satisfaction rate.

Medical method avoids complications like uterine perforation, uterine synechia, cervical stenosis and also saves expenditure on operation and anesthesia.

However, our rate was higher than the rate of 80% reported by Peterson et al from Australia.[18]

Oral and sublingual administration of misoprostol is associated with more gastrointestinal side effects than vaginal route.[19]

In our study, vaginal route was used for administration of misoprostol. It is more effective and less GIT effect.

Incidence of pyrexia 5%, nausea 2.5%, severe pain 2.5 %, heavy bleeding 2.5% and no side effect 70% of patients.

Side effects of misoprostol recorded in this study were largely minor and self limiting. This is consistent with established data.[20]

Treatment of missed abortion with misoprostol has been reported with varying degree of success**.**

Misoprostol is widely available. It is low cost and stable at room temperature; it is easy to use both for the patients and clinicians. It is thus an excellent choice of treatment for use in low resource setting.[21]

The effectiveness of treatment with misoprostol depends on the time interval to follow up. To avoid unnecessary interventions to the assessments of success should be delayed for at least 7to 10 days. So to get most effective result a single dose of vaginal misoprostol (800µmg) is recommended for inducing missed abortion.

**Conclusion:**

It can be concluded that medical management of 1st trimester missed abortion with single dose of vaginal misoprostol (800µgm) is a safe, effective, economic with high success rate(more than 90%) and better client acceptance and reducing the need for surgical evacuation and its complications. However this becomes safe and easy because it opens cervix, separates product and contracting myometrium.

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## Original Article

# Nutritional Status Among Under Five Children in Rural Area of Bangladesh

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**Abstract:**
**Background:** The nutritional status of the people of Bangladesh is considered to be worse among Asian countries, and Bangladesh ranks 57th in relation to children aged less than 5 years. In context of Bangladesh, nearly 33% children were suffering from underweight, 36% from stunting and 14% from wasting. **Objective:** The objective of the study was to assess the nutritional status of children less than five years of age. **Methods:** This was a cross-sectional descriptive survey conducted among purposively selected 200 children of 24-59 months of age in rural area of Bangladesh (Gangachara, Rangpur). The data were collected 21 January 2018 to 31 January 2018 by the 3rd year MBBS students. **Results:** Mean age of the study population was 40.36 ± 1.17months, among them boys were 52% and girls 48%. Regarding anthropometric assessment, according to weight for height Z-score, 10.5% was wasted moderately and 02% was severely wasted and height for age Z-score, showed 29% of children were stunted moderately and 3.5% children were severely stunted. According to weight for age Z-score, 22% of children were moderately underweight and 5.5% children were severely underweight. MUAC classification revealed 15% of children were in border line nourishment and 1.5% was malnourished. **Conclusion:** There has been some improvement in child nutritional status over the past decade. Though, the prevalence of malnutrition is high in Bangladesh.

**Indexing words:** Nutritional status, Under five children, Rural area

**Introduction:**
Nearly half of all deaths in children under 5 are attributable to under nutrition. Under nutrition puts children at greater risk of dying from common infections, increases the frequency and severity of such infections and contributes to delayed recovery. In addition, the interaction between under nutrition and infection can create a potentially lethal cycle of worsening illness and deteriorating nutritional status. Poor nutrition in the first 1,000 days of a child's life can also lead to stunted growth, which is irreversible and associated with impaired cognitive ability and reduced school and work performance.[1] In 2010, it has been reported that, 27% of children under five years (171 million) are stunted and 16% (104 million) are underweight globally.[2] Globally in 2011, 165 million children under 5 years of age were stunted, 101 million children were underweight and 52 million children were wasted.[3] It is also alarming that 10.5 million children of age under-five years die worldwide every year and 98% of these deaths reported to occur in developing countries.[4] Of the total global disability-adjusted life-years (DALYs), 11% are due to childhood malnutrition alone. About 80% of undernourished children of the world live in just 20 countries in Africa, Middle East, Asia, and the Western Pacific; Bangladesh is one of these countries.[5] Currently, 195 million under-five children are affected by malnutrition; 90% of them live in sub-Saharan Africa and South Asia.[6] Good nutrition is the cornerstone for survival, health and development. 5.9 million Children under the age of five died in 2015. Child malnutrition causes 27.9% of child deaths in developing countries in 2015.[7] The nutritional status of the people of Bangladesh is considered to be worse among Asian countries, and Bangladesh ranks 57th in relation to children aged less than 5 years, and the prevalence of childhood malnutrition in Bangladesh is one of the highest in the world; about 43% of under-5 year children are stunted, 41% have underweight and about 17% suffer from wasting.[8] Rates of

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malnutrition in Bangladesh are among the highest in the world, with six million children estimated to be chronically undernourished.[9] According to BDHS, 2014, 36 percent of children under 5 are considered to be short for their age or stunted, while 12 percent are severely stunted (below -3 SD). Rural children are more likely to be stunted than urban children (38 percent compared with 31 percent). Under Millennium Development Goal 1 Bangladesh has set a target to halve the rate of underweight children between 1990 and 2015. Using the WHO standard, the MDG1 target is 31 percent, whereas using the NCHS reference, the target is 33 percent. Using the WHO reference, the 2014 BDHS data show that Bangladesh is 2 percentage points short of reaching MDG1 target for underweight. One in five children less than 6 months is underweight. Three standard indices of physical growth that describe the nutritional status of children are: Height-for-age (stunting), Weight-for-height (wasting), and Weight-for-age (underweight). Height-for-age measures linear growth. A child who is more than two standard deviations below the median (-2 SD) of the WHO reference population in terms of height-for-age is considered short for his or her age, or stunted. This condition reflects the cumulative effect of chronic malnutrition. If a child is below three standard deviations (-3SD) from the reference median, then he or she is considered to be severely stunted. Weight-for-height describes current nutritional status. A child who is more than two standard deviations below (-2 SD) the reference median for weight-for-height is considered to be too thin for his or her height, or wasted. This condition reflects acute or recent nutritional deficit. Along with stunting, wasting is considered severe if the child is more than three standard deviations below (-3 SD) the reference median. Children whose weight-for-age is below two standard deviations (-2 SD) from the median of the reference population are classified as underweight. Children whose weight-for-age is below three standard deviations (-3 SD) from the median of the reference population are considered severely underweight. Weight-for-age is an overall indicator of a population's nutritional health[10].

Child nutritional status assessment not only serves as a means for evaluating the health condition and survival of children but also provides an indirect measurement of the quality of life of an entire population. Therefore, the present study was aimed to assess the nutritional status of the children (24-59 months) under five years in rural area of Bangladesh.

**Methods:**

This was a cross sectional descriptive type of study. Data were collected from rural inhabitants of Gangachara Upazilla, Rangpur. Two hundred children of 24-59 months age were studied from 21 January 2018 to 31 January 2018. Data were collected by the 3rd year MBBS students of Rangpur Army Medical College during their Residential Field Site Training Programme. The world Health Organization recommended height for age, weight for age, and weight for height Z – score and Mid Upper Arm Circumference (MUAC) was used to assess the nutritional status of the children. Each student visited different households of the village and collected various data from respondents by face to face interview following a preformed partially structured questionnaire. Data were then edited and processed. Data were analyzed by using SPSS version 16. Informed written consent was taken from the parents or children's legal guardian considering all ethical issues. Confidentiality was maintained regarding both verbal and documentary data.

**Results:**

A total of 200 under 5 children were studied by face to face interviewee to assess nutritional status by using anthropometric measurement. The findings of the study were plotted in table and charts. The socio-demographic variables were showed in frequency and percentage. The nutritional status was expressed in frequency table.

Table 1 shows the socio demographic characteristics of the study population. Out of 200 children most of them 92 (46%) were in the age group of 24 to 36 months. Among them, 108 (54%) study subjects were boys and 92 (46%) were girls. Among the respondents majority 174 (87%) were female and most 147 (73.8%) had no formal or primary education, 47 (23.5%) were completed secondary level education and 06(03%) were graduated. Among the respondents 161 (80.5%) were housewife, 11 (5.5%) were service holders and others 28 (14%). Most of the respondents 168 (84%) had monthly family income were in between Tk 5000

to 10000. Among them most of them lived in semipacca house114 (57%). Of the study population Muslim were 137(68.5%) and Hindu 63 (31.5%).

**Table 1:** Socio-demographic characteristics of the study subjects (n=200)

| Characteristics | Frequency | Percentage |
|---|---|---|
| **Age of the subjects** | | |
| 24-36 months | 92 | 46 |
| 36-48 months | 48 | 29 |
| 48-59 months | 50 | 25 |
| **Gender of the subjects** | | |
| Boys | 108 | 54 |
| Girls | 92 | 46 |
| **Parents education** | | |
| No formal/primary education | 147 | 73.8 |
| SSC & HSC | 47 | 23.5 |
| Graduate & above | 06 | 03 |
| **Parents occupation** | | |
| House wife | 161 | 80.5 |
| Service | 11 | 05.5 |
| Farmers and others | 28 | 14 |
| **Parents monthly income (Taka)** | | |
| <10000 | 168 | |
| 10001-20000 | 26 | 13 84 |
| >20000 | 06 | 03 |
| **Type of house** | | |
| Kancha | 71 | 35.5 |
| Semipucca | 114 | 57 |
| Pucca | 15 | 07.5 |
| **Religion** | | |
| Islam | 137 | 68.5 |
| Hindu | 63 | 31.5 |

**Table 2** shows maximum 136 (67.5%) children were normal in their height for age followed by 58 (29%) were moderately stunted and 07(3.5%) were severely stunted.

**Table 2:** Nutritional status of the children by Height for Age (n=200)

| Height for age | Frequency | Percentage |
|---|---|---|
| Normal | 135 | 67.5 |
| Moderate stunting | 58 | 29 |
| Severe stunting | 07 | 03.5 |
| Total | 200 | 100 |

p<0.0001

**Table 3** shows, out of the total 200 children, majority 145(72.5%) of the children's weight were within the normal limit for their age followed by 44(22%) children were moderately underweight and 11(5.5%) children were severely underweight.

**Table 3:** Nutritional status of the children by Weight for Age Z-score (n=200)

| Weight for age | Frequency | Percentage |
|---|---|---|
| Not underweight | 145 | 72.5 |
| Moderate underweight | 44 | 22 |
| Severe underweight | 11 | 05.5 |
| Total | 200 | 100 |

p<0.0001

**Table 4** shows, according to height for weight Z-score, it was found that 175 (87.5%) children were normal, 21(10.5%) were moderately wasted, and 04(02%) were severely wasted.

**Table 4:** Nutritional status of the children by Weight for Height Z-score (n=200)

| Weight for Height | Frequency | Percentage |
|---|---|---|
| Normal | 175 | 87.5 |
| Moderate wasting | 21 | 10.5 |
| Severe wasting | 04 | 02 |
| Total | 200 | 100 |

p<0.0001

**Table 5** shows that according to Mid Upper Arm Circumference (MUAC) classification, 30(15%) children were moderate acute malnutrition (MAM) and 03(1.5%) found in severe malnutrition (malnourished)**.**

**Table 5:** Nutritional status of children by MUAC classification (n=200)

| MUAC | Frequency | Percentage |
|---|---|---|
| Normal | 167 | 83.5 |
| Borderline | 30 | 15 |
| Malnourished | 03 | 1.5 |
| Total | 200 | 100 |

p<0.0001

**Discussion:**

It was a descriptive type of cross sectional study conducted among 200 under five children of age 24 to 59 months in order to assess the nutritional status by using anthropometric measures. The mean age of the children was 40.36 ±1.42 months. In our study boys and girls were found 54% and 46% respectively. Anthropometric indices were used and compared to WHO, (2006) Growth Standards[11]. In our study result

stunting was found 32.5%, wasting was 12.5% and underweight 30%, which is almost closer to the BDHS, 2014[10] where stunting was 36%,wasting 14% and underweight 33%. Our findings were closer to the findings of the study done by Sultana et al (2015)[12] except underweight, which reveals prevalence for wasting was 11.2% stunting 33.5% and under-weight was 13.1%. It may be due to socioeconomic development of our country. According to MUAC measurement in our study 167 (83.5%) children were found normally nourished and 15% borderline and 1.5% had severe acute malnutrition. These findings are consistent with the study done by sultana et al (2015) [12] in Bangladesh, where 79% were found normally nourished and 19.9% children in moderately acute malnutrition and only 1.1% was in severe acute malnutrition. Our findings are inconsistent with the study conducted by Biswas et al (2010)[13] in India who found MAM were among boys 38.49% and among girls 32.22% and severe malnutrition 2.15% in boys and 1.20% in girls respectively. It may be due improvement of socioeconomic status of Bangladesh within these periods.

**Conclusion and Recommendation**

Achievements in child nutrition have been mixed in Bangladesh. Some outcome indicators are declining. But the prevalence of malnutrition is high in our country. So, Government and other development partner should take interventions like exclusive breast feeding campaigns, complementary feeding and infant young child feeding (IYCF) programme, food diversification and food fortification at the community level to improve the situation.

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## Original Article

# Outcome of Non-surgical Management of Chronic Subdural Hematoma

**Rajkumar Roy[1], Habibur Rahman[2], Shamima Sultana[3], Hasina Begum[4], Tofayel Hossain Bhuiya[5], Md. Shariful Islam[6]**

**Abstract**

**Background:** Chronic subdural hematoma (CSDH) is a common condition in neurosurgical field. It is difficult to select the treatment modality between the surgical method and the conservative method when patients have no or mild symptoms along with comorbid diseases and strong refusal to operation. **Objective**: The objective of this study was to evaluate outcome of chronic subdural hematoma with conservative management. **Methods:** This prospective study was conducted among 90 patients of chronic subdural hematoma fulfilling the selection criteria admitted into the department of Neurosurgery of Rangpur Medical College Hospital from January 2015- December 2018. All patients were offered surgical treatment but the subjects declined. Therefore, all patients were managed conservatively with steroids, anticonvulsant drugs and analgesics. Repeat CT scan of brain was done after 4 weeks of treatment. **Results:** Among 90 patients, 83 (92.2%) patients were managed conservatively and 7 (7.8%) patients required surgery due to symptom aggravation and growing hematoma. Complete recovery was resumed in 82(91.1%) patients and incomplete recovery in 5(5.6%) patients and 3 patients (3.3%) died. **Conclusion**: It was concluded that in well selected, 10mm or less thickness of CSDH on CT scan, good GCS score (9 or above), minimum or no symptoms, non- operative management may be a treatment option of chronic subdural hematoma patient.

**Indexing words:** Chronic subdural hematoma, Non-surgical treatment

**Introdction:**

Chronic subdural hematoma is an emergency neurosurgical condition and most of the neurosurgeons take surgical evacuation for granted as the key principle in the management of symptomatic chronic subdural hematoma (CSDH) [1, 2,3,4,5]. When brain CT scan reveals slight compression of the brain parenchyma caused by hematoma and patients have no neurological symptoms or have mild symptoms, it is occasionally difficult to select the treatment strategy between surgical and conservative treatments and uncertainty prevails about the surgical decision[6].

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The literature on non-operative treatment of CSDH is scanty indeed. Forty-seven years ago, it was reported and proposed that in selected patients, spontaneous resolution of CSDH might take place and that non-operative therapy might be preferable to surgical treatment[7]. Operative procedure is generally considered the treatment of choice (burr-hole trephination, craniotomy, twist-drill craniostomy), but final decision rests on the neurosurgeon's intuition coupled with patient's consent for surgery and comorbid dieases[7]. It is likely that some patients with CSDH remain asymptomatic and have spontaneous regression of their lesions with low dose steroid therapy[8,9]. However close observation and follow up of the patient is a challenge for the neurosurgeons to try with conservative treatment. The mechanism of steroids in the resorption of CSDH is still unclear, membrane stabilizing action of dexamethasone has been claimed to be the key factor for regression of the chronic subdural hematoma[10].

**Methods:**

This prospective study was conducted among 90 cases of chronic subdural hematoma admitted in neurosurgery department of Rangpur Medical College Hospital from January 2015 to December 2018. Detailed history, clinical examination and relevant investigations were done in all patients having history of RTA, minor trauma, taken anticoagulant or had history of chronic alcoholism. General clinical examination included headache, nausea, vomiting and neurological examination comprised of hemiparesis, dysphasia, and altered consciousness. Glasgow Coma Scale (GCS) scoring was done for clinical assessment. Investigations included clotting profile, cranial computed tomography (CT) scan of brain. Patients having CSDH 10mm or less on CT scan, minimum or no midline shift, surgically fit, GCS score 9 or more, no comorbid diseases were included All patients were offered surgical evacuation of the hematoma. However none of these enrolled patients agreed to undergo surgical intervention. Each patient was given a course of analgesics, anticonvulsants drugs and oral dexamethasone 2mg every 12hourly for 5 days with close monitoring of clinical improvement or deterioration. Repeat cranial CT scan was done 4 weeks later. All the data were tabulated and analyzed by SPSS version-23.



**Fig 1:** TC scan of a patient before treatment showing left sided chronic subdural hematoma with minimum midline shift.

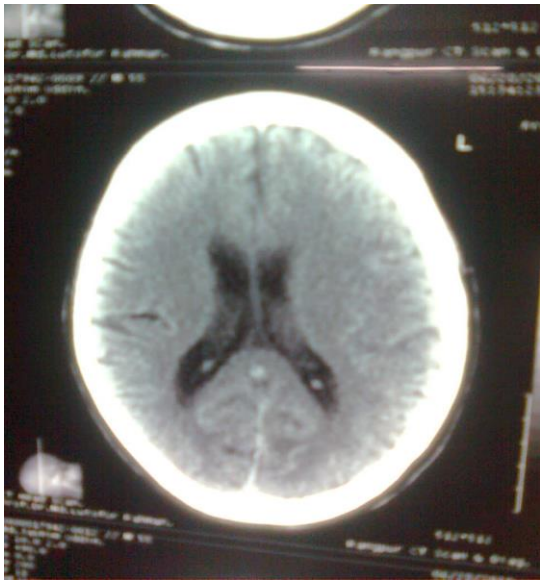


**Fig 2:** CT scan of same patient 4 week after treatment hematoma absorbed.

**Results**:

Table 1 shows highest frequency of chronic subdural hematoma at 61-70 years age group patients (28.9%) ($p<0.05$).

Table 2 shows male patients (72.2%) outnumbered female (27.8%) ($p<0.05$).

Table 3 shows that among clinical presentations headache (94.4%) was the most common symptom followed by vomiting (71.1%) ($p<0.05$).

Table 4 shows that most of the patient (72.2%) presented with history of minor head trauma followed by RTA (22.2%) ($p<0.05$).

Table 5 shows that 48.9% patients presented with GCS 9-13, followed by 33.3% patients presented with GCS 14-15 and 17.8% patients with GCS 3-8 ( $p <0.05$).

Table 6 shows CSDH on CT scan on left side in 54.4% cases and on right side in 43.3% cases ($p <0.05$).

Table 7 shows that most patients (70%) had hematoma thickness <10mm followed by (30%) patients with 10mm ($p <0.05$).

Table 8 shows maximum patient (92.2%) cured with conservative treatment and 7.8% patient required surgery ($p <0.05$).

Table 9 shows complete recovery in 91.1% cases, incomplete recovery in 5.6% cases, death in 3.3% cases ( $p <0.05$).

**Table 1:** Distribution of study patients by age (n=90)

| Age group in years | Frequency | Percent | Valid Percent | p value |
|---|---|---|---|---|
| Up to 40 | 3 | 3.3 | 3.3 | |
| 41-50 | 9 | 10.0 | 10.0 | |
| 51-60 | 15 | 16.7 | 16.7 | |
| 61-70 | 26 | 28.9 | 28.9 | <0.05 |
| 71-80 | 19 | 21.1 | 21.1 | |
| 81-90 | 13 | 14.4 | 14.4 | |
| 91-100 | 5 | 5.6 | 5.6 | |
| **Total** | **90** | **100.0** | **100.0** | |

**Table 2:** Distribution of chronic subdural hematoma patients by sex (n=90)

| Sex | Frequency | Percent | Valid Percent | p value |
|---|---|---|---|---|
| Male | 65 | 72.2 | 72.2 | <0.05 |
| Female | 25 | 27.8 | 27.8 | |
| **Total** | **90** | **100.0** | **100.0** | |

**Table 3:** Distribution of chronic subdural hematoma patients by clinical presentation (n=90)

| Clinical features | Frequency | Percent | Valid percent | p value |
|---|---|---|---|---|
| Headache | 85 | 94.4 | 94.4 | |
| Nausea, vomiting | 64 | 71.1 | 71.1 | |
| Hemiparesis | 21 | 23.3 | 23.3 | <0.05 |
| Dysphasia | 10 | 11.1 | 11.1 | |

**Table 4:** Distribution of chronic subdural hematoma patients by etiology (n=90)

| Etiology | Frequency | Percentage | Valid percentage | p value |
|---|---|---|---|---|
| RTA | 20 | 22.2 | 22.2 | |
| Minor trauma | 65 | 72.2 | 72.2 | <0.05 |
| Aspirin (anticoagulant) | 11 | 12.2 | 12.2 | |
| Alcohol | 10 | 11.1 | 11.1 | |

**Table 5:** Showing GCS scoring of study patients (n=90)

| GCS Scoring | Frequency | Percent | Valid Percent | p value |
|---|---|---|---|---|
| 3-8 | 16 | 17.8 | 17.8 | |
| 9-13 | 44 | 48.9 | 48.9 | <0.05 |
| 14-15 | 30 | 33.3 | 33.3 | |
| **Total** | **90** | **100.0** | **100.0** | |

**Table 6:** Showing side of hematoma on CT scan findings among study patients (n=90)

| Side of hematoma | Frequency | Percent | Valid percent | p value |
|---|---|---|---|---|
| Right side | 39 | 43.3 | 43.3 | |
| Left side | 49 | 54.4 | 54.4 | <0.05 |
| Bilateral | 2 | 2.2 | 2.2 | |
| **Total** | **90** | **100.0** | **100.0** | |

**Table 7:** Showing thickness of hematoma on CT scan among study patients (n=90)

| Thickness of hematoma | Frequency | Percent | Valid percent | p value |
|---|---|---|---|---|
| 10mm | 27 | 30.0 | 30.0 | <0.05 |
| <10mm | 63 | 70.0 | 70.0 | |
| **Total** | **90** | **100.0** | **100.0** | |

**Table 8**: Showing treatment modality required among study patients (n=90)

| Treatment | Frequency | Percent | Valid percent | p value |
|---|---|---|---|---|
| Conservative | 83 | 92.2 | 92.2 | <0.05 |
| Surgery | 7 | 7.8 | 7.8 | |
| **Total** | **90** | **100.0** | **100.0** | |

**Table 9:** Outcome of study patients after conservative management (n=90)

| Outcome of study patients | Frequency | Percent | Valid Percent | p value |
|---|---|---|---|---|
| Complete recovery | 82 | 91.1 | 91.1 | |
| Incomplete recovery | 5 | 5.6 | 5.6 | <0.05 |
| Died | 3 | 3.3 | 3.3 | |
| **Total** | **90** | **100.0** | **100.0** | |

**Discussion:**

Much of the literature dealing with non-operative treatment of CSDH is old and many of these earlier reports appear to focus more on cases with documented spontaneous resolution[8]. Nonetheless, there exists evidence, including some recent case series of successes with non-surgical primary treatment of CSDH in well selected cases[6, 8].

In this study, 28.9% cases were in the 61-70 years old age group and 72.2% cases were male patient. This is almost similar to the study by Roka et al[11]. The presenting symptoms of our study were headache in 94.4% cases, nausea and vomiting in 71.1% cases which confirm to the study of Shrestha et al[12] and Santarius et al[13]. In this study, majority of patients had previous history of minor head trauma in 72.2% cases which closely resembles with study by Roka et al[11]. In this study most of the patients presented with GCS 9-13 in 48.9% cases and GCS 14-15 in 33.3% cases which are almost similar to the study by Phang et al[14]. This study revealed that on CT scan, right sided hematoma in 43.3% cases, left sided in 54.4% cases and bilateral distribution in 2.2% cases which are almost similar to the study by Roka et al[11]. This study reported 10mm thickness hematoma on CT scan in 30% patient and less than 10mm thickness in 70% patients which is almost similar to the study by Hyung et al[6]. The current study shows almost complete recovery in 91.1% cases, incomplete recovery in 5.6% cases and death in 3.3% cases.

**Conclusion:**

Considering the results from the above study, it was concluded that in 10mm or less thickness of CSDH on CT scan, good GCS score (9 or above), with minimum or no symptoms, non-operative treatment with short period of low dose dexamethasone, analgesics and anticonvulsants may be a therapeutic option for chronic subdural hematoma .

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## Original Aticle

# Prevalence of Overweight and Obesity along with Dietary Habits amongst School-Aged Adolescents in English Medium School in the Rangpur City

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**Abstract:**

**Background:** The global prevalence of overweight and obesity among school going adolescents is increasing at an alarming rate. As a developing country, Dhaka and other divisional cities of Bangladesh are not free from this problem. The aim of this study was to assess the prevalence of overweight and obesity along with dietary habits amongst school-aged adolescents in English medium school in the Rangpur city. **Methods:** This study was a cross sectional type of descriptive study which was carried out at the Millennium Stars School and College in Rangpur city by 3rd year students of Rangpur Medical College under the guidance of Department of Community Medicine. Data were collected through a self-administered pre-tested structured questionnaire and BMI was assessed by portable Weighing Scale and Stadiometer. **Results:** Results indicate that out of 371 respondents, most of them (52.26%) were 12-14 years old with average 14.30±1.187 years. The prevalence of overweight and obesity among the respondents were 18.3% and 8.1% respectively (14.98% and 6.28% of boys, 22.56% and 10.37% of girls). The total prevalence of overweight and obesity was significantly higher among girls than boys ($p<0.001$). This study also shows that among the overweight and obese students, 47.96% took fast food ≤4 times per week and 52.04% took fast food ≥3 times per week. There is supporting evidence that excessive fast food intake has a positive association (p value< 0.00001) with the rising rates of obesity and overweight in the adolescents. **Conclusion:** Our study suggested that prevalence of overweight and obesity is quite alarming and "Fast food intake" is very significantly associated. Nutrition and health education programs could help the adolescents to reduce this problem.

**Indexing words**: Overweight and obesity, School-aged adolescents, Body mass index, Fast food, English medium school

**Introduction:**

Overweight and obesity among adolescents has emerged as an alarming health problem in today's world. It is being considered as a global epidemic, not only in economically developed countries, but also in developing countries. Over 340 million children and adolescents aged 5-19 were overweight or obese in 2016[1]. WHO has defined overweight and obesity as "abnormal or excessive fat accumulation that presents a risk to health"[2]. It occurs as a result of "Caloric imbalance" – too few calories expended for the number of calories consumed and it is affected by various genetic, behavioral and environmental factors[3]. The use of body mass index (BMI) for age to define being overweight and obese in adolescents is well established for both clinical and public health applications, because of their feasibility under clinical settings and in epidemiological studies. The normal range for BMI in children varies with age and sex. While a BMI above the 85th percentile is defined as overweight, a BMI greater than or equal to the 95th percentile is defined as obesity by Centers for Disease Control and Prevention (CDC). It has published tables for determining this in children[4]. WHO (2013) considers childhood obesity as "one of the most serious public health challenges of 21st century"[5]. A study conducted by CDC

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over the year 2011 to 2014 shows 20.5% prevalence of overweight and obesity in USA among the 12-19 years old children[6]. In Canada, the prevalence of overweight and obesity was found to be 27% among 3-19 years old in a study done by Rodd and Sharma in 2016[7]. Through collection of data from various sources, Wang & Lim displayed showed 22.7% prevalence of overweight and obesity among boys & 26.6% among girls in 5-17 age groups, in England (2007), 22.6% among boys & 17.7% among girls in 3-17 age groups, in China (2005), 21.7% among boys & 17.1% among girls in 10-19 age groups[8]. The developed Arabian countries has an even higher prevalence rate such as 32.5% in age groups 13-15years, in Egypt, 38.4% age groups 13-15years, in UAE, 51.4% age groups 13-15years[9].

Our neighbouring country, India also has shown proof of high prevalence rates of overweight and obesity among school-going adolescents in urban areas as seen in the study of Ramachandran et al, which was 17.8% among boys & 15.8% among girls in 13-18 age group[10]. Another study conducted by Das et al. at Dhaka shows 6.7% overweight and obesity prevalence among children aged between 5-19 years. They found a positive association between high socio-economic status and children being overweight[11]. A cross sectional study, conducted in September 2006 in one of the affluent private schools in Dhaka by Mohsin et al. shows a prevalence of overweight and obesity of 17.9% [12]. Obesity & overweight in childhood gives rise to some and sows the seeds for many other problems involving physical, mental, social and economic aspects. This includes cardiovascular diseases, type 2 diabetes, lung problems, liver problems, renal diseases, musculoskeletal complications and also certain malignant conditions. Obese adolescents are more likely to have prediabetic, joint problems, sleep apnea, social and psychological problems[13]. In the preliminary results of a nationwide study recently conducted by ICDDR,B on overweight and obesity prevalence among adolescents in urban areas of Bangladesh, it was seen that of children aged 5-18 years, 10% are overweight while 4% are obese. The figures are alarming, considering the size of our young population. The research identified availability of high-calorie fast/processed food, sedentary lifestyle, better transportation facilities, less outdoor recreational space and intake of more food and beverages as result of attractive media campaigns as some of the important factors contributing to childhood overweight and obesity among school-going children of Bangladesh. According to Obesity Prevention Source of Harvard School of Public Health, South Asian countries like Bangladesh, India and Pakistan have low child obesity rates compared to other countries. But the large populations of these countries add up to large numbers of children who are overweight or obese[14].

Obesity in children and adolescents is rising alarmingly and approaching epidemic proportion in many economically developed countries, particularly in USA, Canada, Australia and several European countries[15]. Likewise, in developing countries this issue is emerging as a public health crisis. According to a recent report, out of an estimated 43 million obese adolescents worldwide in 2010, by 2020, it is estimated that the global prevalence of childhood obesity will reach approximately 60 million. This dictates that, the overweight and obesity problem has already reached an epidemic rate in developed countries of Europe, the Americas and Asia[16]. Apart from the divisional City, the prevalence of overweight and obesity is ever on the rise in other cities also. Since then, urbanization has taken a big leap. With growing number of restaurants and decreasing number of playgrounds, the overweight and obesity status of the adolescent population is also on the rise. The availability of fast foods near the schools, parents' negligence towards their child's nutrition is starting to take a toll on the BMI status among these school going children. This could lead to morbidity in mass population in the future and eventually, handicap the society to a great extent. Therefore, a study observing the obesity and overweight pattern and dietary habits amongst adolescent school going children is of utmost importance to plan the proper intervention measures and halt the problem in its initial stages.

**Methods:**

It was a cross sectional type of descriptive study. The study was carried out at The Millennium Stars School and College, Rangpur Cantonment, Rangpur City on 25th March to 25th April 2018. The aim was to screen 371 respondents, males

207(55.8%) and females 164(44.2%) between 12 and 17 years at class 7, 8, 9 &10 purposively. All the students of these classes were invited to participate in the study. Informed consent was obtained from the school authorities to make weight and height measurement using portable weighing Scale & portable Stadiometer respectively. Height and weight of the students were measured without shoes using standard procedures and BMI was calculated using standard formula (weight in kg/ height in meter$^2$). Measurements were plotted against 2000 growth chart of CDC (Centre for Disease Control) for boys & girls. After BMI calculation, it was expressed as a percentile which was obtained from either a graph or a percentile calculator The CDC defines underweight as BMI for age below 5$^{th}$ percentile, normal as between 5$^{th}$ to 85$^{th}$ percentile, overweight as BMI 85$^{th}$ to 95$^{th}$ percentile and obese as BMI above 95$^{th}$ percentile[4]. The data were collected through a self-administered pretested structured questionnaire from the school children. "Food Frequency Questionnaire" included questions regarding food habits. The answers were recorded according to written responses.

- Fast-food intake was categorized as: ≤3 times per week and ≥4 times per week.

The dietary habits action is performed every day:

- Regularly/Always
- Frequently: The action is performed ≥4 days to <7 days per day
- Rarely: The action is performed ≤3 days per day[4].

After collection of data they were checked, verified and edited manually to reduce error. The data were processed manually and a master table was prepared from that table. Data compilation and tabulation were done by using scientific calculator. Data were analyzed using SPSS (Statistical Package Social Science) version 25. Descriptive statistics are presented as means and standard deviations. Chi-square test was calculated to determine the statistical association between BMI and associated variables.

**Results:**

Regarding the socio-demographic characteristics, among 371 students, majority 205(52.26%) were 12-14 years old & 166(44.74%) were 15-17 years old (mean=14.30 ± 1.187). About 207 (55.8%) were male and rest 164 (44.2%) were female. Mother's level of education 274(73.85%) were university and above and 97(26.15) were less than university. Father's level of education of majority 260 (70.08%) were university and above and 111(29.92%) were less than university. Among 371 students, most of the students' father 148 (39.90%) were businessmen, 120 (30.2%) were government employees & 103 (27.8%) were non-government employees. The study revealed that majority 289 (77.89%) of the students' mother were housewives, 38 (10.24%) were government employees and 44 (11.86%) were non-government employees. It was seen that majority, 10 (2.70%) students' monthly family income in taka was below <20,000/-, 209 (56.33%) students' family income was between 20,000- 39,999/- and 152 (40.97%) was 40,000/- or more (Table 1).

**Table 1:** Socio-demographic characteristics of school adolescents (n=371)

| General characteristics | Frequency | Percentage |
|---|---|---|
| **Age (in years)** | | |
| 12-14 | 205 | 55.26 |
| 15-17 | 166 | 44.74 |
| Mean =14.3 ± 1.18 SD | | |
| **Sex** | | |
| Male | 207 | 55.80 |
| Female | 164 | 44.20 |
| **Educational level of mother** | | |
| University and above | 274 | 73.85 |
| Less than university | 97 | 26.15 |
| **Educational level of father** | | |
| University and above. | 260 | 70.08 |
| Less than university | 111 | 29.92 |
| **Father's Occupation** | | |
| Government | 120 | 32.35 |
| Non-government | 251 | 67.65 |
| **Mother's occupation** | | |
| House wife | 289 | 77.89 |
| Employed | 38 | 10.24 |
| Unemployed | 44 | 11.86 |
| **Monthly family income (in taka)** | | |
| Less than 20000/- | 10 | 2.70 |
| 200000-39999/- | 209 | 56.33 |
| 400000/- or more | 152 | 40.97 |

Regarding frequency of meals and snack intake among adolescents according to gender: majority 280(75.47%) of the students took breakfast regularly (79.71% boys, 70.12% girls), 55(14.82%) took breakfast frequently, 36 (9.70%) took breakfast rarely or none. About 358 (96.5%) students took lunch regularly (91.79% boy's, 85.96% girl's), 9 (2.4%) took lunch frequently and only 04 (1.1%) students took lunch rarely or none. Most of them 295 (79.5%) students took supper regularly (39.61% boy's, 9.75% girl's), 45 (12.1%) took supper frequently, 31 (8.34%) took supper rarely or none. It is revealed that majority of the students 133 (35.8%) frequently took snacks between breakfast and lunch, 111 (29.9%) took it regularly (29.47% boy's, 26.22% girl's), 127 (34.20%) took snacks rarely or none between breakfast and lunch. Among 371 students, majority 136 (34.39%) took snacks between lunch and supper frequently, 120 (32.3%) took it regularly (9.66% boy's, 14.02% girl's), 93 (31%) took snacks rarely or none between lunch and supper (Table 2).

**Table 2:** Frequency of Meals and Snacks Intake according to Gender (n=371)

| Meals / Snacks Frequency | Boys | | Girls | | Total | | p-value |
|---|---|---|---|---|---|---|---|
| | N | % | n | % | N | % | |
| **Breakfast** | | | | | | | |
| Regularly | 165 | 79.71 | 115 | 70.12 | 280 | 75.47 | |
| Frequently | 25 | 12.07 | 30 | 18.29 | 55 | 14.82 | p<.001 |
| Rarely or none | 17 | 8.21 | 19 | 11.59 | 36 | 9.70 | |
| **Lunch** | | | | | | | |
| Regularly | 190 | 91.79 | 141 | 85.96 | 331 | 89.46 | |
| Frequently | 14 | 6.76 | 21 | 12.80 | 35 | 9.46 | p<.024 |
| Rarely or none | 3 | 1.45 | 2 | 1.22 | 5 | 1.35 | |
| **Supper** | | | | | | | |
| Regularly | 82 | 39.61 | 16 | 9.75 | 98 | 26.49 | |
| Frequently | 20 | 9.66 | 33 | 20.12 | 53 | 14.32 | P<.001 |
| Rarely or none | 105 | 50.72 | 115 | 70.12 | 220 | 59.30 | |
| **Snacks between breakfast & lunch** | | | | | | | |
| Regularly | 61 | 29.47 | 43 | 26.22 | 104 | 28.03 | |
| Frequently | 103 | 49.76 | 100 | 60.97 | 203 | 54.72 | P<.382 |
| Rarely or none | 43 | 20.77 | 21 | 12.80 | 64 | 17.25 | |
| **Snacks between lunch & supper** | | | | | | | |
| Regularly | 20 | 9.66 | 23 | 14.02 | 53 | 14.29 | |
| Frequently | 87 | 42.03 | 50 | 30.49 | 127 | 34.23 | p<.078 |
| Rarely or none | 100 | 48.31 | 91 | 55.49 | 191 | 51.48 | |

Among the respondents, largest portion, 172 (46.4%) took 4 meals per day, 107 (28.8%) students took 5 meals per day, 72 (19.4%) students took 3 meals per day, 20 (5.66%) students took 2 meals per day (mean=3.99 ± 0.837) (Table 3).

**Table 3:** Intake meals per day among school adolescents (n=371)

| Intake meals per day | Frequency | Percentage | |
|---|---|---|---|
| 2 meals | 20 | 5.66% | |
| 3 meals | 72 | 19.4% | |
| 4 meals | 172 | 46.4% | M=3.99 ± 0.837 SD |
| 5 meals | 107 | 28.8% | |
| Total | 371 | 100 | |

Among 371 students, large portion 275 (74.12%) took fast food less than or equal to 3 times per week and 96 (25.88%) took fast food more than or equal 4 times per week (Table 4).

**Table 4:** Fast food intake per week among school adolescents (n=371)

| Intake fast food | Frequency | Percent |
|---|---|---|
| ≤ 3 times per week | 275 | 74.12% |
| ≥ 4 times per week | 96 | 25.88% |
| Total | 371 | 100 |

From weight and height measurement and plotting them on age-based BMI percentile charts according to gender, it showed that among the 371 students, 245 (66.0%) had a normal (between 5th to 85th percentile) status of boy's 73.91% and girl's 56.09%, 68 (18.3%) were overweight (between 85th to 95th percentile) status of boy's 14.98% and girl's 22.56%, 30 (8.1%) were obese (above 95th percentile) status of boy's 6.28% and girl's 10.37% and the rest 28 (7.5%) were underweight (below 5th percentile) status of boy's 4.83% and girl's 10.98% (Table 5).

**Table 5**: Distribution of BMI status among the respondents according to Gender (n=371)

| BMI status | Boys | Girls | Total | p-value |
|---|---|---|---|---|
| **Normal** | | | | |
| Between 5th to 85th percentile | 153(73.91%) | 92(56.09%) | 245(66%) | - |
| **Under weight** | | | | |
| Below 5th percentile | 10(4.83%) | 18(10.98%) | 28(7.5%) | - |
| **Overweight** | | | | |
| Between 85th to 95th percentile | 31(14.98%) | 37(22.56%) | 68(18.3%) | p<.001 |
| **Obese** | | | | |
| Above 95th percentile | 13(6.28%) | 17(10.37%) | 30(8.1%) | p<.001 |
| **Total** | **207** | **164** | **371** | |

Association between fast food intake and weight status among 371 students, majority 224(82.05%) of non overweight or non-obese took fast food ≤3 times per week and rest 49 (17.95%) took fast food ≥4 times per week, 51(52.04%) of overweight or obese took fast food ≤3 times per week and rest 47 (47.96%) of overweight or obese took fast food ≥4 times per week (Table 6).

**Table 6:** Fast food intake according to school adolescents BMI status (n=371)

| Fast food intake | Non overweight or obese | Overweight or obese | p Value |
|---|---|---|---|
| ≤ 3 times per week | 224(82.05%) | 51(52.04%) | p<0.00001 |
| ≥ 4 times per week | 49(17.95%) | 47(47.96%) | |
| Total | 273(73.58%) | 98(26.42%) | |

**Discussion:**

This study indicates unfavorable dietary habits of school adolescents in Rangpur city. It was found that majority (55.26%) were 12-14 years old. The prevalence of overweight and obesity was highest among them. The overweight and obesity among girls (22.56%, 10.37%) were significantly higher (p<0.001) than boys (14.98%, 6.28%), which was similar to the study of Ramachandran et al. in India[10] and Musaiger et al.[17] in Bahrain. In relation to the prevalence of overweight and obesity among the respondents were 18.3% and 8.1% respectively which were dissimilar to the study in Argentina[18] (26.4% and 14.1%). It was seen that 56.33% of the overweight children's parents' monthly income was 20000-39999/-, which is similar to the study of Das et al. in Dhaka[11]. Most of the respondents had regular breakfast habit (81.64% boys, 73.17%), took lunch regularly (91.79% boys, 85.96% girls) and took supper regularly (39.61% boys, 9.75% girls). Breakfast and supper were significantly more regularly consumed by boys than girls (p<0.001) but lunch had no significant differences between boys than girls (p<0.024). Of males 81.64% regularly consumed breakfast compared with 73.17% which was similar to the study Musaiger et al.[19] in Bahrain (77.1% boys and girls 70.8%). There were no significant differences between gender in morning and afternoon snacking. Of the total students, 28.03% and 14.29% regularly consumed foods during morning and afternoon snacking time respectively which were similar to the study[19] (23.7% and 14.8%). The habit of taking 4 meals per day was predominant (46.4%). In our study, about 20.28% and 29.88% of school boys and girls skipped breakfast which were similar to the study in Bahrain[19] (19% boys and 22% girls) and a similar tendency for skipping breakfast has been reported among Swedish[20] and Turkish[21] adolescents. For girls, skipping breakfast may be connected in some way to feeling about body

shape and it may also method of dieting. For boys, however, skipping breakfast may be associated with lack of time or accessibility[22]. Skipping breakfast may be related to risk for obesity and cardio-metabolic health. It has been documented that boys and girls with irregular breakfast intake had received a high percentage of their energy needs from in between meals[20].

The habit of eating fast food is still low among the adolescent students in Rangpur city as the study reveals that about 25.88% students took fast food ≥4 times per week which was dissimilar to the another study[16] (72.5% of them were taking fast food ≥4times per week). But there was a positive association between fast food intake and overweight and obesity ($p<0.00001$). This is similar to the study of Almuhanna et al. in Riyadh city[16]. While 82.05% of non-overweight school students were taking fast food ≤3times per week which was similar to the another study[16] (72.4% were taking fast food ≤3times per week). On the other hand, Sudanese adolescents[17] 26.6% ate fast food more than or equal 4times per week which was similar to our study (25.88%). This finding is higher than Morocco[23] but very close to that practiced in Bahrain[17] and Saudi Arabia[24].

**Conclusion:**

The prevalence of obesity and overweight in adolescent has raised to a significant level globally with serious public health consequences. In addition to cardiovascular, emotional and social issues, it poses a serious hazard to the basic health care delivery system. Anyhow, our study only established that taking excess fast food is positively associated with overweight and obesity. It could not establish any other positively associated factors. The prevalence of overweight and it may lead to a society burdened with non-communicable diseases. A holistic approach to tackle the adolescent obesity epidemic needs an array of activities which includes steps like influencing policy making, mobilizing communities, imparting community education as well as enriching and reinforcing individual knowledge and skills. However, further research needs to examine the most effective strategies of intervention, prevention and treatment of obesity. These strategies should be culture specific, ethnical and consider the socio-economic aspects of the targeting population. Parents must take necessary precautions for the diet of their children and should adopt healthy life style. The government and media should also play their role in creating awareness for healthy meals and the risk factors associated with overweight and obesity.

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## Original Article

# Etiological Patterns of Per Rectal Bleeding

**Md. Anowar Hossain[1], Mst. Iffatara[2], Bimal Chandra Roy[3], Md. Shohel Rana[4], Md. Golam Rahman[5]**

**Abstract**:
**Context:** Per rectal bleeding make the people worried about carcinoma of rectum in the different age groups. Most of the people with per rectal bleeding came to us with having believe that there may be a chance of hemorrhoids or carcinoma rectum or carcinoma colon. In the US, colorectal cancer ranks 3rd after prostate and lung cancer in men and after breast and lung cancer in women in both incidence and mortality. There is no study at the northern part of Bangladesh actually based on etiological patterns of per rectal bleeding. **Methods:** Aim of the study was to find out the causes of all patients presenting with per rectal bleeding in different ages from 1 year to more than 60 years. We used to confirm our diagnosis by details history, clinical examination, DRE, anoscopy, flexible sigmoidoscopy, colonoscopy, PBF & Hb electrophoresis. **Result:** In 1080 patients we found 17 etiological patterns responsible for per rectal bleeding. 380(36.11%) patients were diagnosed as hemorrhoids, 260(24.07%) anal fissure with sentinel piles, 100(9.07%) anal fissure with hemorrhoids, 40(3.70%) carcinoma rectum & 10(0.93%) diagnosed as carcinoma colon. **Conclusion:** Per rectal bleeding with bowel habit change make the diagnosis different. Hemorrhoids are the most common cause of per rectal bleeding. As per rectal bleeding could be single symptom for carcinoma rectum, all surgeons & physicians should keep it in mind.

**Indexing words**: Rectal bleeding, Differential diagnosis, Anoscopy, Sigmoidoscopy, Colonoscopy, PBF, Hb electrophoresis

**Introduction**:
Rectal bleeding is a common presentation of patients attending the general surgeons. Overall, colorectal carcinoma is the second most common malignancy in western countries, with approximately 18000 patients dying per annum in UK[1]. Per rectal bleeding is one of the important symptoms presenting as colorectal carcinoma but in most of the cases per rectal bleeding associate with benign diseases of anorectal region. A survey of industrial employees in UK aged over 40 years found that 11.8% of 916 persons completing symptom questionnaires admitted to recent rectal bleeding[2]**.** In a study of Australian veterans aged over 50 years living in Sydney, flexible sigmoidoscopy to 30 cm or more revealed only 4 polyps in the 15% admitting rectal bleeding[3]**.**

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Lower gastrointestinal bleeding was defined as bleeding originating distal to the ligament of Treitz owing to the distinct nature of small intestinal bleeding. Bleeding originating between the ligament of Treitz and ileocaecal valve now referred to as middle gastrointestinal bleeding. Acute lower gastrointestinal bleeding is defined as the onset of hematochezia originating from either the colon or the rectum[4,5]**.** Presentation of per rectal bleeding varies according to causes. Some patient presented with painful per rectal bleeding e.g. anal fissure, locally advanced carcinoma rectum etc. Some are painless e.g. uncomplicated hemorrhoids, early rectal carcinoma. Some patients with per rectal bleeding may present with dysentery or altered bowel habits e.g. carcinoma rectum, ulcerative colitis etc. As presentation of per rectal bleeding varies according to etiology, details history, through clinical examination and endoscopy of colorectal part are very much important to evaluate the cause of per rectal bleeding.

**Methods:**
We aimed to diagnose by taking history, doing DRE, sigmoidoscopy, colonoscopy, PBF, Hb

electrophoresis. All patients were questioned about the other gastrointestinal symptoms, food habit, occupation and family history. Data was collected in a pretested data collection sheet.

The study cross sectional study was carried out at SOPD and indoor of general surgery department of Rangpur Medical College & Hospital and Kasir Uddin Memorial Hospital. Data was collected over 12 months periods from 1/1/2018 to 31/12/2018 and included 1080 patients. All patients aged from 1 year to more than 60 years presenting with bleeding per rectum in SOPD irrespective of cause and gender and consenting to participate were included. Patients of Chronic liver disease (CLD) and hematological diseased patients were excluded from the study. The collected data were tabulated and statistically analyzed using SPSS statistical package (version 23). p value of ≤0.05 was considered statistically significant.

**Table 1:** Age distribution of the subjects.

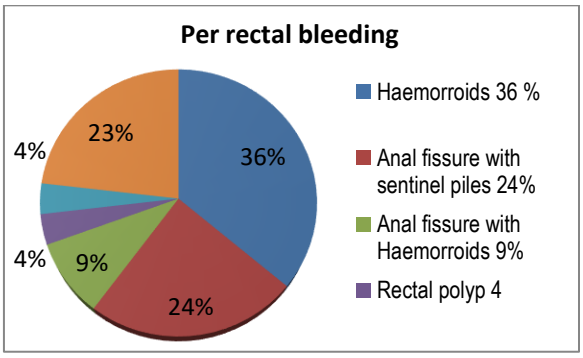
| **Age in years** | **1-20** | **21-40** | **41-60** | **>60** |
|---|---|---|---|---|
| Numbers of patients | 131 | 549 | 331 | 69 |

**Table 2:** Etiological patterns of per rectal bleeding with their percentage in different age groups.

| **Serial** | **Pattern of per rectal bleeding** | **Number of patients according to age** | | | | **Total patients** | **Percentage** | **p value** |
|---|---|---|---|---|---|---|---|---|
| | | **1-20 years** | **21-40 years** | **41-60 Years** | **>60 years** | | | |
| 01. | Anal fissure with sentinel piles | 49 | 180 | 30 | 00 | 259 | 24.07 | <0.01 |
| 02 | Hemorroids | 42 | 179 | 130 | 40 | 389 | 36.11 | |
| 03 | Anal fissure with hemorroids | 00 | 50 | 51 | 00 | 101 | 9.26 | |
| 04 | Rectal polyp | 32 | 10 | 00 | 00 | 42 | 3.70 | |
| 05 | Carcinoma colon | 00 | 00 | 10 | 00 | 10 | 0.93 | |
| 06 | Carcinoma rectum | 00 | 10 | 20 | 9 | 39 | 3.70 | |
| 07 | Fistula in ano | 0 | 30 | 30 | 00 | 60 | 5.56 | |
| 08 | Hemorroids with rectal polyp | 8 | 00 | 00 | 00 | 8 | 0.93 | |
| 09 | Hemorroids with IBS | 00 | 20 | 00 | 00 | 20 | 1.85 | |
| 10 | Anal fissure with proctitis | 00 | 10 | 10 | 00 | 20 | 1.85 | |
| 11 | Anal fissure with anal stenosis | 00 | 30 | 00 | 10 | 40 | 3.70 | |
| 12 | Ulcerative colitis | 00 | 10 | 20 | 00 | 30 | 2.78 | |
| 13 | Anal fissure with ODS | 00 | 00 | 10 | 10 | 20 | 1.85 | |
| 14 | Hypertrophied anal papilla | 00 | 10 | 00 | 00 | 10 | 0.93 | |
| 15 | Anal fissure with Hb E trait | 00 | 10 | 00 | 00 | 10 | 0.93 | |
| 16 | Recurrent per rectal bleeding following hemorroidectomy | 00 | 00 | 10 | 00 | 10 | 0.93 | |
| 17 | Use of corrosive agents to the anal canal | 00 | 00 | 10 | 00 | 10 | 0.93 | |
| | **Total Number of patients** | **131** | **549** | **331** | **69** | **1080** | **100%** | |

17 etiological patterns found presenting as per rectal bleeding. Out of 1080 patients 389 (36.11%) were hemorrhoids, 259 (24.07%) anal fissure with sentinel piles, 101 (9.26%) anal fissure with hemorrhoids, 60 (5.56%) Fistula in ano, 42 (3.70%) rectal polyp, 40 (3.73%) carcinoma rectum, 10 (0.93%) carcinoma colon, 40 (3.70%) anal fissure with stenosis, 30 (2.78%) ulcerative colitis, 20 (1.85%) hemorrhoids with IBS, 20 (1.85%) anal fissure with proctitis, 20 (1.85%) anal fissure with ODS, 8 (0.93%) hemorrhoids with rectal polyp, 10 (0.93%) hypertrophied anal papilla, 10 (0.93%) anal fissure with Hb E trait, 10 (0.93%) recurrent rectal bleeding following hemorroidectomy, 10 (0.93%) use of corrosive agents to the anal canal(P value <0.01).

**Figure 1:** Pie Chart shows top 5 causes of per rectal bleeding with others




**Discussion:**

In most of the cases of per rectal bleeding, we can diagnose these patients with DRE and proctoscopy. Commissioning guide 2013 red flag symptoms and signs in patients with rectal bleeding include associated change in bowel habit especially diarrhea or increased frequency, anemia, weight loss, abdominal or rectal mass. This means that the general surgeons need to have high index of suspicion of other pathology if symptoms and/or clinical cause do not follow common patterns suggestive of benign diseases. Persistent or unexplained symptoms could trigger need for investigations. While most rectal bleeding is caused by hemorrhoids and fissures or combination of both, bleeding can be caused by cancerous and precancerous conditions also.

Precancerous polyp at the end of the colon can mimic bleeding from hemorrhoids. Polyp and colon cancer are more common with aging thus clinical examinations and investigations of bleeding per rectum are important and should be more intensive in patients over the age of approximately 40 years where per rectal bleeding is the main symptom. As majority of per rectal bleeding due to pathologies in anal canal and rectum, simple DRE, proctoscopy and sigmoidoscopy can detect cause of per rectal bleeding in most of the cases. So every patient with per rectal bleeding should undergo DRE, proctoscopy and sigmoidoscopy, provided that there is no contraindication in doing these. In case of painful anal condition, examination under anesthesia should be done to detect the cause of bleeding. Rectal bleeding is not rare in early age. Rectal polyp, anal fissure and hemorrhoids are common causes of per rectal bleeding.

With the ages of time rate of carcinoma increasing day by day. We found 40 patients of carcinoma rectum out of 1080 patients presenting with per rectal bleeding. Dark red bleeding thought to be of diagnostic value for carcinoma rectum and colon[6,7,8,9,10]. Fresh bleeding per rectum usually indicates benign anorectal pathologies, like hemorrhoids, anal fissure, rectal polyp etc.

**Conclusion:**

Hemorrhoids are the most common cause of per rectal bleeding. Low fiber diet, red meat, fast food, chronic constipation, familial predispositions are important causes of increased incidence of hemorrhoids. DRE and proctoscopy/anoscopy in bed side practice are very much important in proper diagnosis. Suspicious mind make the diagnosis correct at the end with ones power of knowledge and skills.

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## Original Article

# Personal Hygiene of Rural People in a Selected Village of Sirajganj

**Khondoker Mohammad Ali[1], Rafiqul Islam[2], Abu Rayhan Md. Suja-ud-Doula[3], Samaunnur Shuvo[4], Sharmin Akhtar[4], Raihana Pervin[4]**

**Abstract:**

**Context:** This is a descriptive type of cross sectional study conducted in a village Telezania Sirajganj with a view to finding out personal hygiene practice of the rural people. The objective of the study was to determine the habit of personal hygiene practice & concerned diseases of rural people. **Methods:** Data were collected purposively in a preformed questionnaire from 224 respondents. All study subjects were investigated for socio-demographic character, ingredient used in tooth brushing, hand washing, cloth washing, frequency & time of tooth brushing, bathing, nail cutting prevalence of common disease associated with improper practice of personal hygiene. **Results:** In the study out of 224 respondents about 40% of people were in the age group in between 30-50 years among them two-thirds of the respondents were female & one-third of the respondents were male. It was found that most of the respondents were in below SSC which were 77.23. The income of the majority of people was about 5000 taka per month. About half (57.35%) of the respondents brush their teeth morning after rising from bed & two third of the respondents brush two times a day. About half of the respondent used soap in hand washing before meal. Majority of the respondents used soap in hand washing after using toilet where as one-third of the respondent used ashes Prevalence of daily use of soap during taking a bath was 38.39% & twice a week was 37.5%. About half of the respondents use detergent during cloth washing twice a week. About half of the respondents cut their nails weekly. Two-thirds of female respondents used normal cloth during menstrual period. Majority of the respondents were suffering from dental caries (35.7%) and scabies (22.32%). **Conclusions:** The result of the study would help the concern authority to take necessary steps to improve the personal hygiene state of the rural people of our country.

**Indexing words:** Personal hygiene, Rural people, Socio-demographic status

**Introduction:**

Personal hygiene is the principle of maintaining cleanliness & grooming of the external body. It is the quality of life renders the individual fit to live and serve best. The word hygiene is derived from Hygeia[1] (The goddess of health in Greek mythology). Hygiene is deified as the science of health and embraces all factors which contribute to healthful living. Personal hygiene or personal health care deals with measures which are the personal responsibilities of the individual for the promotion of good health. Proper maintenance of personal hygiene not only to prevent a number of diseases but also it has a socio-economic & psychological impact. So, a person who does not maintain proper personal hygiene is neglected by the society.

There is a proverb “Cleanliness is next to Godliness.”[2] Winslow in 1920 observed that personal hygiene can be improved by educating individuals in communities on basic tips of achieving personal cleanliness through the organized efforts and informed choices.[3] The focus of good personal hygiene is to prevent diseases, injuries and other health conditions through surveillance and the promotion of healthy behavior in aspects relevant to human health. It may prevent health problems from happening or reoccurring by implementing educational programs, developing policies administering services and conducting research.[4] Personal hygiene has been taught to

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families and in now being taught in schools through health education.[5] So, every person should be aware of cleanliness regarding personal hygiene. A large number of people are suffering from various diseases like dental caries, gingivitis, scabies due to improper maintenance of personal hygiene.

The people of rural area are lower middle class. They are unable to understand the beneficial effect of practicing personal hygiene. Therefore, there is every possibility to occur various disease regarding improper practice of personal hygiene but the diseases are preventable.

Bangladesh is a developing country. As it is overcrowded country people who live below the poverty line are supposed to have health problems. But personal hygiene is only the factor that can change their life.

Personal hygiene can be defined as art of maintaining cleanliness and grooming to the external body. Maintaining good personal hygiene consists of bathing washing your hands brushing teeth and sporting clean clothing. So, this was aimed at to find out the personal hygiene quality of rural people of Bangladesh.

**Methods:**

This was a descriptive type of cross-sectional study undertaken in Telezania village Raiganj Upazilla, Sirajganj, with a view to finding out the personal hygiene maintenance of the rural people regarding the personal hygiene data during March 2018. Data was collected by a structured questionnaire by face to face interview by the medical students from 224 respondents. Then the data was checked and verified for any omissions or inconsistency. Finally data was analyzed manually with help of a scientific calculator.

**Results & Discussions**

The Table 1 shows that about 40% people are between the age group of 30-50 years.

40% respondents are male and 60% respondents are female.

About 77.23% of the respondents are below SSC Followed by SSC & above which is about 13.83%.

About 31.24% respondents are housewife and 22.33% respondents are farmer and businessman.

The monthly income of more than half of the respondents is about 5000Tk.

**Table 1:** Socio demographic characteristics of respondents (N=224)

| Variable | Number | Percentage |
|---|---|---|
| **Age** | | |
| 15-20 years | 40 | 18 |
| 20-30 years | 71 | 32 |
| 30-50 years | 90 | 40 |
| Above 50 years | 23 | 10 |
| **Total** | **224** | **100** |
| **Sex** | | |
| Male | 90 | 40 |
| Female | 134 | 60 |
| **Total** | **224** | **100** |
| **Educational Status** | | |
| Below SSC | 173 | 77.23 |
| SSC | 31 | 13.83 |
| HSC | 14 | 6.25 |
| Others | 7 | 3.12 |
| Total | 224 | 100 |
| **Occupation** | | |
| Housewife | 70 | 31.24 |
| Farmer | 50 | 22.33 |
| Businessman | 50 | 22.33 |
| Service Holder | 34 | 15.17 |
| Others | 20 | 8.93 |
| Total | 224 | 100 |
| **Income** | | |
| 5000 | 131 | 58.48 |
| 10000 | 66 | 29.46 |
| 150000 | 16 | 7.14 |
| Above | 11 | 4.9 |
| **Total** | **224** | **100** |

The bar diagram in Figure 1 shows that 190 respondents out of 224 use tooth brush followed by twigs of Neem tree & ashes which are about 20%.

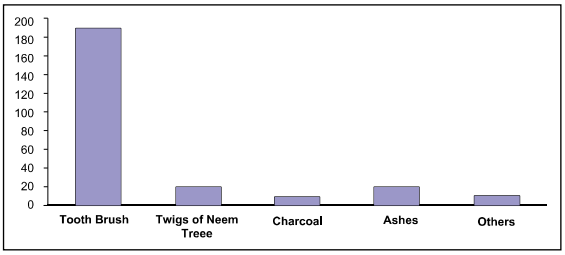



**Figure 1:** Ingredients used in cleaning teeth (n=224)

The Table 2 shows 61.6% respondents brush teeth single time in a day & 25.900% of the people brush teeth twice a day & about 12.5.%

of the respondents brush teeth three times a day.

**Table 2:** Frequency of tooth brushing of the respondents (n=224)

| Times | Number | Percentage |
|---|---|---|
| 1 | 138 | 61.6 |
| 2 | 58 | 25.90 |
| 3 | 28 | 12.5 |

The Table 3 shows that 100% respondents brush teeth after rising from bed. As tooth brushing ideally should be done after each meal. Health education should be given.

**Table 3:** Tooth brushing habit of respondents (N=224)

| Times | Number | Percentage |
|---|---|---|
| Morning after rising from bed | 224 | 100 |
| After mid-day meal | 58 | 25.90 |
| Before going to bed | 66 | 29.46 |

The Table 4 shows that 49.1% respondent use soap & water in hand wash before meal. On the other hand 42% respondent use only water. A study conducted by the Ministry of Health and Family Welfare, Bangladesh. 34% people used soap and water during hand washing in resturants[7].

**Table 4:** Ingredient used in hand washing before meal

| Ingredient used in hand washing before meal | Number | Percentage |
|---|---|---|
| Only water | 94 | 42 |
| Soap & water | 110 | 49.10 |
| Others | 20 | 8.9 |
| **Total** | **224** | **100** |

The Table 5 shows 75.9% respondent use soap & only 8.03% respondents use only water during hand washing after toilet use. Necessary health education should be given to improve the sanitation.

Only 53% people wash hands after toilet use in India.[8] A study conducted in Nepal, it was found that 65% of the respondents used soap with water after defecation and only 4% respondents used only water for hand washing which is consistent with the present study.[9]

**Table 5:** Ingredient used in hand washing before toilet use

| Ingredient used in hand washing after toilet used | Number | Percentage |
|---|---|---|
| Ashes | 30 | 13.4 |
| Soap | 170 | 75.9 |
| Only water | 18 | 8.03 |
| Others | 6 | 2.67 |
| **Total** | **224** | **100** |

The Table 6 shows that 38.39% respondent use soap daily & 37.5% respondents use soap twice weekly during taking of a bath. This is almost satisfactory in rural perspectives.

**Table 6:** Ingredient using soap during take a bath

| Ingredient using soap during take a bath | Number | Percentage |
|---|---|---|
| Daily | 86 | 38.89 |
| two times weekly | 82 | 37.9 |
| weekly | 45 | 20.08 |
| Others | 8 | 3.57 |
| **Total** | **224** | **100** |

The Table 7 shows that 53.57% respondent use detergent in cloth washing twice in a week. This is more or less satisfactory.

**Table 7:** Interval of using detergent in cloth washing of respondents

| Ingredient using detergent in cloth washing | Number | Percentage |
|---|---|---|
| Daily | 53 | 23.66 |
| Two times weekly | 120 | 53.57 |
| Weekly | 34 | 16.5 |
| Quarterly | 14 | 6.25 |
| **Total** | **224** | **100** |

The Table 8 shows that about 84.03% female use cloth & 14.97% use sanitary napkin during menstrual period. So health education in this respect is necessary to improve personal hygiene.

43% of Indian women don't have access to sanitary pads[10]. A study conducted in Bangladesh (Rangpur and Gopalganj District), it was found that 91% of the female respondents used cloth and only 9% female respondents used sanitary pad which is consistent with the present study[11].

**Table 8:** Ingredient using during menstrual period of female respondents (N=134)

| Ingredient using during menstrual period | Number | Percentage |
|---|---|---|
| Cloth | 113 | 84.03 |
| Sanitary Napkin | 20 | 14.97 |
| Others | 1 | 1 |
| **Total** | **134** | **100** |

The Table 9 shows 22.32% respondents hazing Scabies. 35.7% having dental caries. Eczema is also common which is 13.4%. This is an alarming sign of bad personal hygiene maintenance.

**Table 9:** Concerned disease of respondents (N=224)

| Name of disease | Number | Percentage |
|---|---|---|
| Scabies | 50 | 22.32 |
| Eczema | 30 | 13.40 |
| Purities | 14 | 6.25 |
| Dental caries | 80 | 35.7 |
| Gingivitis | 40 | 17.85 |
| Taeniasis | 10 | 4.5 |
| **Total** | **224** | **100** |

The Table 10 shows 57.14% out their nail weekly and 26.33% quarterly. So this habit of nail cutting is satisfactory.

A study conducted in Nigeria, it was found that 46.4% respondents cut their nail weekly which is more or less consistent with this study[12].

**Table 10:** Nail cutting habits of respondents (N=224)

| Interval of Nail cutting | Number | Percentage |
|---|---|---|
| Weekly | 128 | 57.14 |
| Quarterly | 59 | 26.33 |
| Others | 39 | 17.41 |
| **Total** | **224** | **100** |

## Conclusion & Recommendation

Many people in rural area suffer from various diseases like dental caries, gingivitis, eczema, scabies, various fungal infection purities vulva, diarrhea etc. due to improper practice of dental hygiene. They are not aware of different health problems. This descriptive cross sectional study suggests that health education, mass media, evaluation of health program can improve this condition. This is a small study with large number of respondents. So, extensive study with large number of cases is recommended. The result of this study will help the concern authority to take necessary step to overcome common health problem of rural people of Bangladesh.

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## Case Report

# Abdominal Pain Associated with Intra-Abdominal Gonadal Tumor - A Case Report

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**Abstract**

A case is presented of a 28 year old man with a history of unilateral cryptorchidism who presented with a lower abdominal mass and pain in right iliac region. On investigations an intra-abdominal seminoma was diagnosed. Laparotomy and complete excision was carried out.

**Indexing word:** Cryptorchidism, Testicular tumor, Orchiectomy

**Introduction:**

Undescended testicles are risk factors for testicular cancer, especially for development of seminoma. While seminoma comprises 30% to 40% of testicular cancer in normal testicles, this rate is 60% in undescended testicles[1]. The relative risk of tumor development in undescended testicles is 4-7,5 fold higher than normal according to the literature [2,3]. The risk of cancer development is closely related to the position of the testis and intra abdominally located testicles have the highest potential for malignancy[4]. Non seminomatous germ cell tumors are less frequently seen.

**Case Report**

A 28 year old man presented with pain in right iliac region for one day which was constant and dull aching in nature with no radiation, no aggravating or relieving factor, not associated with vomiting. He noticed absence of testis in right scrotum since childhood. His parents knew about his absence of right testis but did not bother. He gave H/O pain in the same area of two episodes with same character (3& 5 months back respectively). He was diagnosed as a case of acute appendicitis 3 month back & appendicectomy done.

His bowel and bladder habit are normal. He gives no history of cough, haemoptysis or chest pain.

On physical examination, patient is non anaemic, non ecteric. There is an intraabdominal globular mass occupying part of right iliac & umbilical region measuring about 10 cm in diameter, non tender, surface is smooth, margin well defined, firm in consistency, moves side to side but above downward movement is restricted. A scar mark is present in right iliac region which consistent with Grid- iron incision. External genitalia examination reveals under developed right hemiscrotum which is empty & left testis in situ which is normal in size, shape & consistency. Hernial orifices are intact. All accessible lymph node are not palpable. Pertinent laboratory data indicated normal alpha-fetoprotein levels and Beta- human chorionic gonadotropin levels. Complete blood count, liver function tests and urine analysis result were also normal. USG of whole abdomen reveals 75mm X 75mm complex solid heterogenous mass in right lower abdomen may be undescended right testis. A CT scan of

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abdomen and pelvis revealed Fairly large soft tissue mass is seen in right lower abdomen about 6.6cm anteroposteriorly X 10.4cm transversely X10cm craniocaudaly. Heterogeneous enhancement of the mass observed after contrast. The gubernaculums ligament is well visualized in coronal and sagittal images and it is seen extending from right side of scrotum up to this mass.

Considering clinical feature and investigation, laparotomy was done and potentially perform orchidectomy. There was no para aortic lymphadenopathy.Post operatively patient develops wound infection. Secondary closure done on 10$^{th}$post-operativeday andreturned to full activity on post-operative day 20. Microscopic examinations revealed seminoma of testis.

**Discussion:**

The management of crytorchidism in postpubertal patients remains controversial. The 3 basic management choices are orchiectomy, orchiopexy and close observation. The choice of therapy should take into consideration the risk associated with an undescended testicle, which include cancer and testicular torsion. If orchiectomy is considered, issues involved in loss of the testicle must also be addressed, including fertility and cosmetic changes. The presence of one normally descended testis makes hormonal function of minimal concern in unilateral undescended testicle. Ultimately, the therapeutic strategy must be decided on an individual basis.

One of the more important issues in the management of cryptorchidism in adults is the increased risk of testicular cancer. The possibility of cancer was considered in this case,because patients with carcinoma of an intra-abdominal testicle commonly present with abdominal pain[5,6]. The undescended testicle is 5 to 10 times more likely to become cancerous than a normally descended testicle[3]. 11% of all testicular tumors arise in undescended testes[7]. Although tumors occur more frequently in these testes, they tend to occur between the third and fourth decades of life. The histologic distribution of these testicular tumors is comparable to testicular tumors occurring in intrascrotal testes[8]. This increased risk of cancer has been used as a justification for orchiectomy in unilateral disease[8-10].

With unilateral cryptorchidism, there is also an increased risk of cancer in the contralateral, normally descended testicle[11].Which has prompted some authors to recommend increased cancer surveillance in all men with a history of cryptorchidism[12,13]. While this seems reasonable, to our knowledge there are currently no studies demonstrating an effective follow-up strategy for these patients in terms of both cancer detection and cost-effectiveness. In addition, the low absolute risk of cancer in patients who have undergone surgery for cryptorchidism has prompted some authors to challenge the requirement for special surveillance in these patients[14]. Thus, it remains unclear whether there is a need for special surveillance in men who have had surgery for cryptorchidism and there is a need, exactly what methods of surveillance should be implemented.

It has been estimated that torsion, a rare but significant complication of undescended testes, occurs in 64% of intra-abdominal testicles that are cancerous[15]. The increased size of the malignant testis can promote twisting of the testicle on its mesentery. The typical presenting symptoms of torsion of an undescended testicle are abdominal and inguinal pain that may be intermittent, prolonged, or of sudden onset[16]. The possibility of carcinoma with torsion was initially considered in this case. Torsion can progress to infarction and rupture of the testicle, which can lead to hemoperitoneum and generalized peritonitis with a potentially lethal outcome[17]. Thus, suspicion of torsion of an intra-abdominal testicle should be high in men presenting with abdominal pain and an empty hemiscrotum. The surgical and pathologic findings in this patient excluded the above scenarios. The nature of this patient's pain remains unclear. It may have been due to the unfavorable location of the testes. Regardless of the cause, unresolving pain is a clear indication for surgical intervention in patients with cryptorchidism.

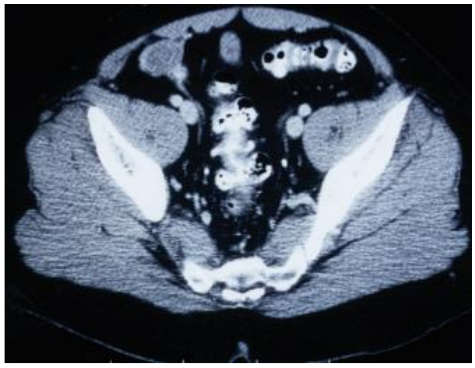


**Figure 1:** An abdominal CT scans demonstrating a right-sided, intra-abdominal testicle.

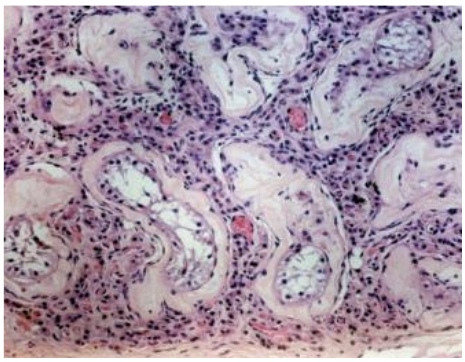


**Figure 2:** Microscopic view of the pathologic specimen demonstrating Leydig cell predominance and an almost complete lack of germ cells within the seminiferous tubules.

While there are distinct risks associated with retaining an undescended testicle, there are also several concerns associated with removal. Fertility is an obvious concern, but it is probably not a significant reason for retaining an abdominal testicle in an adult with unilateral cryptorchidism. Sperm count and motility remain poor in unilateral undescended testicle, even after orchiopexy, in the postpubertal period[18]. Moreover, because most undescended testicles produce no or negligible amounts of mature sperm after puberty[1o,] the intra-abdominal testicle contributes little with regard to fertility. A recent study found that among men attempting to father 'children, failure to achieve paternity was twice as common in men with a history of unilateral cryptorchidism as compared with normal controls[19]. It is notable that many oligospermic men are able to father children[20]. This should be emphasized when discussing fertility with men who elect orchiectomy for undescended testes. Ultimately, the current evidence suggests that the risk of cancer and torsion should take precedence over concerns about loss of fertility in these cases.

Orchiectomy of an intra-abdominal testicle carries its own inherent surgical risk to the patient. Farrer and colleagues[13] initially demonstrated that after 32 years of age, the risk associated with anesthesia is greater than the risk of death from germ cell testicular tumor in men with a history of cryptorchidism. In their original manuscript, these authors recommended observation in patients older than 32 and orchiectomy in postpubertal patients with impalpable testes who were younger than 32 or unable to participate in surveillance of the testicle. More recently, the same authors now recommend either orchiectomy or orchiopexy for all patients with impalpable testes, regardless of age, and for patients with palpable undescended testes who are younger than 32 years of age[11]. Close observation is reserved for men with palpable undescended testes who are older than 32[11]. Indeed, these and other investigators agree that while orchiopexy is not therapeutic with regard to fertility, orchiopexy accompanied by surveillance of the testicle is an appropriatetreatment inpatients who for psychological or cosmetic reasons do not wish to undergo orchiectomy[12,13]

In the present case, the significant pain, increased risk of cancer and testicular torsion, and the fact that the right testicle was impalpable justified an orchiectomy. We recommended an open orchiectomy. While there are currently no controlled, clinical trials comparing laparoscoping and open orchiectomy. As it is a single case, so before concluding specific opinion it needs further study.

**Conclusion:**

Orchiectomy is the treatment of choice in an adult presenting with abdominal pain associated with a unilateral intra-abdominal testicle. Because there were constant and dull aching pain, the impalpability of the testicle, the risk of

cancer and the risk of torsion. In light of recent evidence, loss of fertility is not a major concern in adults with unilateral cryptorchidism, because the undescended testicle produces virtually no mature sperm.

**Patient perspective**

The patient was young, unmarried and educated. He was very much worried about his disease specially knowing that it is a case of carcinoma. After successful operation, he was happy to know that tumor was totally removed. He was disappointed when developed post-operative wound infection. After secondary closure and stitch off when discharged he was happy for successful operation. He felt confident when he knew that disease is curable if post-operative chemotherapy taken successfully.

**Consent**

A informed written consent was taken from the patient for publish in a journal.

**Competing interest**

Though Intra-abdominal gonadal tumor is not uncommon but abdominal pain associated with intra -abdominal gonadal tumor is very uncommon. That is why we are very much interested to publish the case in a journal.

**Author's contribution**

From the admission of the patient history taking and physical examination done by me. I advised all investigation and performed the operation successfully. After operation with patient consent prepared the case for journal presentation.

**Author's information**

In abdominal pain we should examine the scrotum to see both testes are present or not. Orchiectomy is the treatment of choice in intra-abdominal gonadal tumor.

**Acknowledgement**

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## Case Report

# Medical Mystery: Hemolacria - A case report

**Md. Golam Mostofa Kamal[1], Ripon Kumar Sarker[2], Md.Golam Shaheed[1], Maria Akhter[1]**

**Abstract:**
Hemolacria is undoubtedly one of the most alarming condition for Ophthalmologists now a days. Here we report a young boy with anxiety neurosis suffering from hemolacria. He was admitted in Ophthalmology Department, Rangpur Medical College on July, 2018. We could not detect any organic cause for hemolacria after complete local and systemic investigation. As it is self-limiting counseling was done to patients, parents or caregivers

**Indexing words:** Hemolacria, Anxiety neurosis.

**Introduction:**
Hemolacria is a physical condition that causes a person to produce tears that are partially composed of blood. It can manifest as tears that are anything from merely red-tinged to appearing to be entirely made of blood. Hemolacria is a symptom of a number of diseases[1] and may also be indicative of a tumor in the lacrimal apparatus. It is most often provoked by local factors such as bacterial conjunctivitis, environmental damage or injuries[2]. Acute hemolacria can occur in fertile women and seems to be induced by hormones[3] similarly to what happens in endometriosis.16th century Italian physician Antonio Brassavola wrote of treating a nun who wept bloody tears when she was menstruating. Then in 1581, a flemish doctor wrote of a 16 year old girl he treated who discharged her tear flow throughout the eyes as drops of bloody tears, instead of through the uterus. Modern science backs up this idea. According to a 1991 study of 125 healthy subjects[2], menstruation contributes to occult hemolacria or traces of blood in tears. The authors found that 18% of fertile women have some blood in their tears, while only 7% of pregnant women, 8% of men and no postmenopausal women show signs of bloody tears. The scientists concluded that, occult hemolacria in fertile women thus seems to be induced by hormones, whereas hemolacria most often is provoked by local factors (bacterial conjunctivitis, environmental damage, injuries). Here we report an interesting case of bloody tears in a young patient suffering from anxiety neurosis.

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**Case report:**
Mr. Anjon Roy, a 18 year old boy, hailing from Nageshwari, Kurigram had been admitted to Rangpur Medical College Hospital on 6th of July, 2018 with the complains of bloody tears. These were first observed one and half year back when the patient was doing his domestic work. The relatives of the patient were startled when they saw bloody tears trickling over his cheeks while he was concentrating on his work.



**Fig 1:** A boy with crying blood from his eyes

It was accompanied by headache, giddiness, severe pain, weakness and flushing but the vision was unaffected. Since then, the patient experienced episodic attacks of bloody tears at one to one and a half month interval regularly. One attack documented in the form of a photograph (Figure-1) was observed by the authors during hospital stay of this patient. History of bleeding disorders in the family was denied. The blood was confirmed microscopically in the collected samples of tears and was of the same blood group as that of the patient (O positive).

On examination, lids, conjunctiva inclusive of fornices, palpebral part of lacrimal gland and lacrimal sac area were normal. Anterior and posterior segments did not reveal any abnormality. Vision was 6/6 in both eyes. ENT and medical check-ups were within normal limits. Consulting psychiatrist confirmed anxiety neurosis in the patient.

Patient's sac patency test was normal. Bleeding time, clotting time, prothrombin time and platelet count were within normal limit. Serum creatinine, SGPT and Alkaline Phosphatase level were normal. Anti-Phospholipid antibody was absent. However, activated partial thromboplastin time was a little raised during this attack. X-rays of orbit, optic foramina and skull showed no abnormality.

Patient was given conservative treatment in the form of oral vitamin A and Vitamin K supplement and anxiolytic drugs.

**Discussion:**

Isolated bleeding from the eyes without any pathology is an extremely rare condition. Only a few cases of isolated hemolacria have been reported throughout the world so far**.** Duke Elder[4] outlined the differential diagnosis of bloody tears; severe anemia, jaundice, vascular tumors, Oscar-Weber-Rendu disease (hereditary hemorrhagic telangiectasia), hemophillia and other coagulopathies. Other causes reported are vicarious menstruation, conjunctival manipulation for follicle expression in trachoma, clinical treatment of conjunctiva with silver nitrate and retrograde blood stream into conjunctiva through puncta lacrimalia[5]. Recently Bona-volnta and Sammaritino[6] attributed orbital varix as a cause for bloody tears. In another interesting case, Richard and Eifemam blamed secondary giant papillary conjunctivitis for bloody tears.

Idiopathic hemolacria is rarely encountered in clinical practice. It is a diagnosis of exclusion. Before labeling it as idiopathic, it needs through clinical, imaging and laboratory evaluation. The possible causes for hemolacria after reviewing the literature include trauma, vascular tumors of the ocular surface, lacrimal system disease, retrograde epistaxis, bleeding disorders, endometriosis, psychogenic causes and medications.[7,8]

**Conclusion:**

In our case, we could not detect any organic cause for hemolacria after complete local and systemic investigation. In here all investigations (clinical, radiological, laboratory and histopathological) are negative, can be deemed idiopathic. The condition is self-limiting and spontaneous resolution is seen in majority of cases. It is important for patients with unknown etiology to have regular follow up to ascertain not missing occult pathologies. Counselling services can also be provided to help patients, parents or caregivers to cope with this distressing condition.

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