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Sustainable Development Goals

The period of the Sustainable Development Goals (SDGs) has started from 2015 and is going to last up to 2030. The issues related to health is well placed in the SDGs. The health goals are mentioned in SDG 3 and it is broad with the heading 'Ensure healthy lives and promote well-being for all at all ages'. The SDG declaration emphasizes that to achieve the overall health goal, 'we must achieve universal health coverage (UHC) and access to quality health care. Achieving SDG 3 will depend on progress in other SDGs – such as poverty reduction; education; nutrition; gender equality; clean water and sanitation, sustainable energy and safer cities.¹

PROGRESS OF GOAL 3 IN OUR COUNTRY

To meet the Sustainable Development Goals health targets by the year 2030, progresses must be accelerated with special attention to the highest burden of disease.

1. Reproductive, maternal, newborn and child health

- In 2015, the global maternal mortality ratio stood at 216 maternal deaths per 100,000 live births. Achieving the target of less than 70 maternal deaths by 2030 requires an annual rate of reduction of at least 7.5%, more than double the annual rate of progress achieved from 2000 to 2015. Most maternal deaths can be prevented. In 2016, 78% of live births worldwide benefited from skilled care during delivery, compared to 61% in 2000. In sub-Saharan Africa, however, the rate in 2016 was only 53% of live births.
- The mortality rate for children under 5 years of age globally was 43 deaths per 1,000 live births in 2015. That rate represents a 44% reduction since 2000. Mortality among children under 5 years of age remains high in sub-Saharan Africa, with a rate of 84 deaths per 1,000 live births in 2015.
- Children are most vulnerable in the neonatal period (the first 28 days of life). In 2015, the global neonatal mortality rate was 19 deaths per 1,000 live births, a decrease from 31 deaths per 1,000 live births in 2000. Neonatal mortality is highest in Central and Southern Asia and in sub-Saharan Africa, at 29 deaths per 1,000 live births in each of those regions in 2015.
- Preventing unintended pregnancies and reducing adolescent childbearing through universal access to sexual and reproductive health care is crucial to the health and well-being of women, children and adolescents. In 2017, 78% of women of reproductive age (15 to 49 years of age) worldwide who were married or in union had their need for family planning satisfied with modern methods, up from 75% in 2000. Progress has been substantial in the least developed countries, with a rise of 18 percentage points from 2000 to 2017.
- Globally, the adolescent birth rate among females aged 15 to 19 declined by 21% from 2000 to 2015; in Northern America and Southern Asia, it dropped by more than 50 per cent. However, the adolescent birth rate remains high in two thirds of all countries, with more than 20 births per 1,000 adolescent girls in 2015.²

2. Infectious diseases

- Major advances have been made in combating infectious diseases. Globally in 2015, there were 0.3 new HIV (human immunodeficiency virus) infections per 1,000 uninfected people; among children under 15 years of age, there were 0.08 new HIV infections. That data represents a decline of 45% and 71% respectively, since 2000. The incidence of HIV infection remained highest in sub-Saharan Africa, with 1.5 new infections per 1,000 uninfected people in 2015.
- In 2015, 10.4 million new cases of tuberculosis were reported worldwide, which represents 142 new cases per 100,000 people, or a decline of 17% since the year 2000. The global malaria incidence rate in 2015 was 94 per 1,000 people at risk, a 41% decrease since 2000. In 2015, 1.6 billion people required mass or individual treatment and care for neglected tropical diseases, a 21% decline from 2010.
- Around 1.34 million deaths were attributed to hepatitis in 2015, including 0.9 million deaths owing to hepatitis B. Hepatitis B can be prevented through vaccinations; global coverage of vaccinations for that disease among children 1 year of age increased from 29% in the year 2000 to 84% in 2015.
- A major risk factor for infectious diseases and mortality is the lack of safe water, sanitation and hygiene (WASH) services, which disproportionately affects sub-Saharan Africa, Central Asia and Southern Asia. Death rates owing to the lack of WASH services in those two regions were 46 and 23 per 100,000 people, respectively, compared to 12 per 100,000 people globally in 2012.³

3. Non-communicable diseases and mental health

- Premature deaths (before 70 years of age) due to cardiovascular diseases, cancer, chronic respiratory diseases and diabetes mellitus was about 13 million in 2015, accounting for 43% of all premature deaths in the globe. From 2000 to 2015, the risk of dying between 30 and 70 years of age from one of those four causes reduced from 23% to 19%, falling short of the rate required to meet the 2030 target of a one-third reduction.
- Mental disorders as depression can lead to suicide. Nearly 800,000 suicides occurred worldwide in 2015, with men about twice as likely to commit

suicide as women. Measures in SDG have been taken widely.

- Tobacco and alcohol use contributes to the burden of non-communicable diseases. The World Health Organization (WHO) Framework Convention on Tobacco Control has been ratified by 180 parties, which represent 90% of the global population. Still, more than 1.1 billion people, mostly men, consumed tobacco in 2015. The prevalence of smoking among those individuals at the of 15 and older dropped from 23% in 2007 to 21% in 2013. In 2016, the average consumption of pure alcohol was 6.4 liters per year per person among those individuals 15 years of age or older.
- Indoor and ambient air pollution is the greatest environmental health risk. Globally in 2012, household air pollution from cooking with unclean fuels or inefficient technologies led to an estimated 4.3 million deaths, while ambient air pollution from traffic, industrial sources, waste burning or residential fuel combustion resulted in an estimated 3 million deaths.⁴

4. Other health risks

- In 2013, about 1.25 million people died from road traffic injuries, the leading cause of death among males between 15 and 29 years of age. Road traffic deaths have increased by about 13% globally since 2000.
- Worldwide in 2015, an estimated 108,000 people died as a result of unintentional poisoning. That figure represents 1.5 deaths per 100,000 people, a 33% decrease since 2000.⁵

5. Health systems and funding

- In 2015, total official flows for medical research and basic health from all donor countries and multilateral organizations amounted to \$9.7 billion, an increase in real terms of 30 per cent since 2010. Of that amount, the member countries of the Development Assistance Committee of OECD contributed \$4.3 billion.
- Available data from 2005 to 2015 indicate that over 40% of all countries have less than one physician per 1,000 people, and around half have fewer than three nurses or midwives per 1,000 people. Almost all least developed countries have less than one physician and fewer than three nurses or midwives per 1,000 people.⁵

Conclusions:

Bangladesh has always paid attention to the poor and the disadvantaged both economically and financially. Indicators of extreme poverty demonstrate that poverty has been reduced from about 50% of the population in 2000, to just over 30% in 2010. Extensive improvements in social welfare have been achieved already. In the coming years growth in all aspects of health will increase at a rate of 6 to 6 ½ per cent with inexpensive labour and successful government policies. Along with global economic recovery, favorable demographics and improving investor confidence, deep commitment to social solidarity, progressive development agenda will bring about great success in SDGs related to health.⁶

List of Abbreviations

SDGs: Sustainable Development Goals

UHC: Universal health coverage

HIV: Human immunodeficiency virus

WHO: World Health Organization

WASH: Water, sanitation and hygiene

OECD: Organisation for Economic Co-operation and Development

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Instruction for Authors:

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- e) Vancouver referencing style approved by U.S. National Library of Medicine (NLM) is preferred though Harvard style and others may also be submitted.
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Each of the following section should begin on separate page-

- ⊙ Title page
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- ⊙ Text (Introduction, Materials and method, Results, Discussion). Insert tables and legends where they fit.
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May be structured with subheadings of Background Objective, Materials and Method, Results, Conclusion. Not mandatory for review articles and case reports.

Should not exceed 250 words.

Three to five keywords below the abstract may be used.

Text

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States the purpose of the article and summarizes the rational of the study.

Brief review of the subject.

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Should be very clear mentioning study design, place and period.

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Original Article

Knowledge, Attitude and Practice of Family Planning among Women of Reproductive Age

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Abstract

Background: Family planning is regarded as an important preventive measure against maternal and child morbidity and mortality. This study was aimed at determining the knowledge, attitude and use of family planning methods among women of reproductive age (15– 49 yrs.) attending indoor and outdoor department of Dhaka National Medical College & Hospital.

Objective: The aim of this study was to explore the awareness and practice of family planning among women of reproductive age.

Material and methods: This descriptive cross sectional study was conducted among the women of reproductive age attending indoor and outdoor department of Dhaka National Medical College. Data was collected by face to face interview with pre-tested questionnaire.

Place and period of study: The study was conducted during September 2012 to October 2013 in Dhaka National Medical College.

Result: 200 female of reproductive age were studied. The mean age was 27.52±5.2. Of the total subjects 194 (97%) were aware of contraception. 182 (91%) used contraceptive methods and 18 (9%) did not. Religious prohibition, in-laws disapproval, husband disapproval, need more child and lack of awareness act as a barrier in using contraceptive methods. Of the contraceptive user 171 (93.9%) used temporary methods and 11 (6%) used permanent methods. Those who used temporary methods, majority 99 (58%) used hormonal preparation followed by 50 (29.2%) used barrier methods, 16 (9.3%) used natural method and 6 (3.5%) used IUDs. of the permanent method user 9 (81.8%) had tubectomy and 2 (18.2%) husband had vasectomy.

Conclusion: This study concludes that there is a gap among knowledge, attitude and practice in the use of family planning methods. Though most of them use contraceptive methods but some social factors affect the practice. So effective couple counseling should be done.

Key words: Contraceptive, Vasectomy, Tubectomy.

Introduction

Family planning services have the potential to improve the lives of people and also their economic welfare. Increasing population growth is a world-wide problem today and Bangladesh is no exception. According to the provisional results of 2011 population and housing census, the enumerated population on 15th march, 2011 was 142,319 thousands.

Bangladesh is well into the third phase of demographic transition, having shifted from a high mortality-high fertility regime to a low fertility one. Compared to enumerated population in 2001. About 18 million people were added, which represent a 14.4% increase and a

1.34% average annual growth rate, decreasing since last census.¹

Each year about 184 million pregnancies occur in the developing world and 40 % of these are unintended.² It is estimated that about half of the unintended pregnancies ended in abortion, which is responsible for at least one in seven maternal deaths worldwide.³ More than 95% of these deaths occur in developing countries. In addition, unintended pregnancy leads to increase risk of maternal depression and has negative effect on antenatal care, breastfeeding and infant mortality.⁴

According to 2007 Bangladesh demographic and health survey BDI-IS, in Bangladesh 29% of pregnancies were

unintended with 155 mistimed and 145 unwanted. The total intended fertility rate is 1.9 which is quite lower than the total fertility rate 2.7.⁵ This means that if all unintended pregnancies could be eliminated, the TFR (Total Fertility Rate) would drop below the replacement level of fertility immediately. Researchers estimated that the lives of 150,000 women could be saved each year worldwide with access to sufficient family planning. An estimated 150 million women worldwide want to delay or avoid pregnancy but are not using family planning methods.⁶

Family planning can reduce maternal mortality by reducing the number of pregnancies, abortions and the proportion of births at high risks. It can help to reduce infant mortality, slow the spread of HIV/AIDS, promote gender equality, reduce poverty, and accelerate socio-economic development, women empowerment and promote the environment.⁷ Most of the married women want to use the contraceptive methods but are unable to use because of lack of knowledge, economical problem, fear of side effect, religion cause, insufficiency of family planning worker, uncooperative husband and limited supply and high cost.⁸

A proverb runs thus-womanhood of a woman is expressed through her motherhood. Despite the proverb being true, many married women at some time in their reproductive life do not desire to be pregnant. Nevertheless, they do not use any contraceptive method to avoid becoming pregnant. These women are considered to have an unmet need for family planning.

In Bangladesh also the unmet need is as higher as 24%. Unmet need does not necessarily mean that family planning services are not available, it may also mean that women lack of information or that the quality of services on offer does not inspire the necessary confidence or that women themselves have little say in the matter.¹¹ If family planning programmes served most with unmet need, the demographic impact would be substantial contraceptive prevalence would rise, reducing fertility and slowing: population growth.⁹

In 2006, unmet need for family planning was added to the 5th millennium development goal (MGD) as an indicator for tracing process on improving maternal health.

At present various action programmes on family planning are running over the few decades but considerate number of people yet not motivated to adopt the family planning in their practical life. The study was

considered to explore the determinants and proportion of unmet need among married women of a selected rural area.

A variety of different methods of contraception are available, which are generally extremely safe compared with risks associated with pregnancy and child birth. Not all methods are suitable for everyone. Expanding the number of family planning options available to women is a critical part of increasing contraceptive coverage, decreasing unintended pregnancies and reducing maternal morbidity and mortality around the globe.¹⁰

This study was undertaken with the object to assess the level of awareness about different types of family planning (FP) methods and also to find out the current practice of family planning methods by the women of reproductive age group. In recent years, the need for such kind of studies is very important. More specific knowledge can be acquired from these studies about the factor that determines the fertility and family acceptance. This in turn can be used to develop suitable program for people.

Methods

It was a cross sectional descriptive study carried out among women of reproductive age group attending indoor and outdoor department of Dhaka national medical college. The study was conducted from. A total 200 women were enrolled in the study. A pre-tested questionnaire and check list were used to collect data. The data was collected by face to face interview of the respondents. Data was analysis by using SPSS 20 version.

Results:

Among the respondents 66 (36.2%) were (25-30) age group, 53 (29.1%) were (20-25) age, 29 (15.9%) were (30-35) age, 16 (8.7%) were (15-20) age, 12 (6.5%) were (35-40) age and 6 (3.2%) were (35-40) age group. Mean age was 27.52 ± 5.2 . (table-1). Of the total respondents 194 (97%) were aware and 6 (3%) were not aware of contraceptive methods. Among the aware women 182 (93.8%) used contraceptive and 12 (6.2%) did not. Religious prohibition, in-laws disapproval, husband disapproval, need more child and lack of information were mentioned as causes behind not using contraceptive methods (table-3). The proportion of use of contraceptive was found high amongst the one child parents 67(36.8%) and amongst the women who had primary education 72 (39.5%), however, the difference of use of contraceptives was not statistically significant

($p > 0.05$). Of the total respondents 171 (93.9%) used temporary methods and 11 (6%) used permanent methods. Among the temporary method user 99 (58%) use hormonal pill, 50 (29.2%) used barrier methods, 16 (9.3%) used safe methods and 6 (3.55) used IUD. Of the permanent method user 9 (81.2%) had done tubectomy and 29 (18.25) had done vasectomy.

Table-1: distribution of respondents by age and contraceptive use

Age	Contraceptive Use		Mean Age: 27.52±5.2
	Yes	No	
15-20	16 (8.7%)	5 (27.8%)	
20-25	53 (29.1%)	4 (22.3%)	
25-30	66 (36.2%)	1 (5.6%)	
30-35	29 (15.9%)	5 (27.8%)	
35-40	12 (6.5%)	3 (16.7%)	
40-45	6 (3.2%)	0 (0%)	

Table-2: distribution by awareness and use of contraceptive

Awareness	Contraceptive Use		Total
	Yes	No	
Yes	182 (93.8%)	12 (6.2%)	194
No	0 (0%)	6 (100%)	6
	182	18	200

Table-3: distribution of respondents according to the reasons of not using contraceptives

Reasons	Frequency
Religious	2 (11.11%)
Fear of side effects	4 (22.22%)
Husband/in laws disapproval	5 (27.8%)
Need more child	5 (27.8%)
Lack of information	2 (11.11%)
Total	18 (100%)

Table-4: Distribution of respondent by number of children and use of contraceptive methods

No. of Children	Use of contraceptives		Total	Test of Significance
	Yes	No		
1	67 (36.8%)	5 (27.7%)	72 (36%)	$\chi^2 = 771$ $P = .856$
2	60 (32.9%)	6 (33.33%)	66 (33%)	
3	31 (17%)	4 (22.22%)	35 (17.5%)	
>3	24 (13.1%)	3 (16.6%)	27 (13.5%)	
	182	18	200	

Data were expressed as frequency. Statistical analysis was done by chi-square test to see any association between number of child and use of contraceptive. Statistically found no significant.

Table-5: Distribution of respondents by educational qualification and use of contraceptive

Educational status	Use of contraceptives		Total	Test of Significance
	Yes	No		
Illiterate	28 (15.3%)	2 (11.11%)	30 (15%)	$\chi^2 = 1.739$ $p = .784$
Primary	72 (39.5%)	9 (50%)	81 (40.5%)	
SSC	48 (26.3%)	4 (22.22%)	52 (26%)	
HSC	25 (13.7%)	3 (16.6%)	28 (14%)	
Graduate	09 (4.9%)	0 (0%)	09 (4.5%)	
Total	182	18	200	

Data were expressed as frequency. Statistical analysis was done by chi-square test to see any association between educations and use of contraceptive. Statistically found no significant.

Table-6: Distribution of respondents by monthly income and use of contraceptives

Monthly Income (in taka)	Use of contraceptives	
	Yes	No
5000-10000	75	7
10000-15000	37	8
15000-20000	32	2
20000-25000	21	1
25000-30000	14	0
>30.000	3	0
Total	182	18

Table-7: Distribution of respondents by the use of different types of method

Contraceptive methods	No. of respondents	
Hormonal preparation	99 (58%)	Temporary method 171 (93.9%)
Barrier method (Condom)	50 (29.2%)	
Safe period	16 (9.3%)	
IUD	6 (3.5%)	
Tubectomy	9 (81.8%)	Permanent method 11(6%)
Vasectomy	2 (18.2%)	

Percentage distribution of respondents by using of different type of contraceptives.

Discussion

A cross sectional study was done to determine the knowledge of, attitude to and practice of family planning among women of reproductive age attending indoor and outdoor department of Dhaka National Medical College. It was done on 200 female of reproductive age. And their mean age was 27.52±5.2. Majority had educational level more than primary and above. This study showed that educational level and monthly income of husband did not influence the use of contraceptives.

A similar study was done by Arbab AA, Bener A, Abdul Malik M on 1130 Qatari married women aged 18-49 years this study shows knowledge of contraception increased with increasing level of education ($P < 0.001$), but decreased the lower the household income ($P = 0.002$).¹¹ In this study among the total respondents 194 (97%) were aware about contraception and 6 (3%) were not aware about it. 182 (91%) respondents used contraceptives and 18 (9%) did not any contraceptives. Among the contraceptive user 171 (93.9%) used temporary method followed by 11 (6%) used permanent method. this study shows no association between contraceptive use and level of education ($p = 0.784$). 99 (58%) female use hormonal pills, 50 (29.2%) use barrier methods, 16 (9.3%) use safe period, 6 (3.5%) use IUCD. Religious cause 2 (11.11%), fear of side effects 4 (22.22%), husband/in-laws disapproval 5 (27.8%), need more child 5 (27.8%) and lack of information 2 (11.11%) were identified as cause of not using contraceptives

In a study done by Bulto GA, Zewdie TA, beyen TKI on 519 respondents 323 (62.2%) were using modern family planning methods and 101 (19.5%) were using long acting and permanent contraceptive methods. On another study done by Van Zijl S, morroni C, van der Spuy ZM, awareness of the IUD among clients was low. 41% ($n = 88$) had heard of this contraceptive method. Ever and current uses were very low. Only 4% ($n = 9$) had ever used an IUCD and three women still using this method. Lack of knowledge was cited by many women as an obstacle to use. Among the providers, factual knowledge about IUDs was limited and infection (47%, $n = 14$) and increased menstrual bleeding (40%, $n = 12$) were frequently mentioned as disadvantages of the method. According to R. Prachi, K. Ashwini, P. Sanjay; et al; among 156 students (85%) knew about condom and it is the best preferred methods used by the students (81%).^{12,13,14}

From study (carrol under hood) a clear majority respondents-86% of men and 98% of female religious leader believe that family planning is constant with Islamic prospect. These results indicate that religious leaders are at least as like as the general people to believe that family planning is accepted within the tenets of Islam. Only 8% women and no female religious leader reported that family planning is haram.¹⁵

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Original Article

"Prospective study of outcome of 480 arteriovenous fistulas in patient with end stage renal disease" – A single center experience

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Abstract

Background: Patients with End Stage Renal Disease Undergo arteriovenous fistulas for Haemodialysis with variable outcomes.

Aims: The arteriovenous fistula is the preferred vascular access for haemodialysis in patients with end stage renal disease. This prospective study was aimed to evaluate the outcome, patency predictors & primary failure rate of 480 arteriovenous fistulas.

Materials and Methods: This prospective study was conducted at Kidney Foundation Hospital & Research Institute, Dhaka, Bangladesh from 1st January, 2014 through 31st December, 2014. 480 patients age ranged from 14 to 70 years with End Stage Renal Disease were included in this study. The patients who died or lost during this period were excluded from this study. All patients before surgery, underwent thorough relevant medical history, physical examination that included examination of upper limb arterial pulses, blood pressure, body temperature, oedema, etc. Left upper limb was chosen for 370 patients and right upper limb was chosen for 110 patients.

Results: Majority of the patients (73%) were between the age of 40 to 70 years and male patients were predominant (56.25%) out of total 480 patients. Twenty four (5%) patients had primary failure, Fifty eight (12.08%) patients had secondary failure. So, total failure rate was 17.08%. Remaining 398 (82.92%) arteriovenous fistulas were suitable for haemodialysis during this study period. The causes of AVF failure were thrombosis, aneurysm, stenosis, infection & haemorrhage.

Conclusion: Haemodialysis remains the commonest mode of renal replacement therapy for end stage renal disease patients. Arteriovenous fistula is the reliable mode of vascular access for haemodialysis in end stage renal disease patients. A good functioning AVF provides effective haemodialysis with fewer risk & complications. Effort should therefore be made to give knowledge for the doctors, dialysis staff and patients to achieve a more successful outcome.

Introduction

Haemodialysis remains the commonest mode of renal replacement therapy for End Stage Renal Disease (ESRD) patients. Nearly 80% of ESRD patients in Singapore were on haemodialysis.¹ The Kidney Disease Outcome Quality Initiative (KDOQI) guidelines recommended autogenous arteriovenous radio – cephalic or a brachio - cephalic fistula as the first line options for vascular access.²

After Scribner's shunt in 1960, Brescia et al. described the creation of subcutaneous AVF constructed between the radial artery and an adjacent vein in 1966. Cimino fistulas are currently accepted as the best mode of

vascular access for haemodialysis.³ Three types of vascular accesses can be used for haemodialysis such as arteriovenous fistula prosthetic arterio-venous graft and Tunnel Cuffed Catheter⁴ but Tunnel Cuffed Catheter being the bridge to obtain either AVF or AVG. Prosthetic arterio-venous graft has higher incidence of infection, shorter patency, less patient comfortability.

Several studies have demonstrated that autogenous arteriovenous access for chronic haemodialysis has longer patency compared with prosthetic arteriovenous graft.^{5,6} Although, we have increased use of arteriovenous fistula for haemodialysis, a number of complications like primary failure, thrombosis, infection,

aneurysm, stenosis, steal syndrome are noted that have demanded the special peri-operative care and considerations.

Materials and Methods

This prospective study was conducted at Kidney Foundation Hospital & Research Institute, Dhaka, Bangladesh, from 1st January, 2014 to 31st December, 2014. Patients of age 14 to 70 years with end stage renal disease were included in this study. 480 patients, who fulfilled the inclusion criteria were selected. All of the patients were referred by nephrologists. All patients before operation, underwent relevant history & detailed physical examination such as examination of peripheral arterial pulses, blood pressure, body temperature & oedema. Left upper limb was chosen for 370 patients and right upper limb was chosen for 110 patients. Radio-Cephalic (end to side) arteriovenous fistula was constructed in 185 cases, brachio-cephalic arteriovenous fistula was constructed in 245 cases and brachio-basilic arteriovenous fistula was created in 50 cases.

Operative procedure in details

Selected upper limb was thoroughly cleaned with soap and water and then washed with povidone iodine solution. This procedure was performed under local anaesthetics 2% lignocaine that was injected at the site of operation. After proper cleansing, sterilizing, drapping and anaesthesia, a longitudinal incision (5-6 cm) was made at the lower third of forearm between radial artery and cephalic vein. Then cephalic vein was gently dissected and mobilized as required, then dissection of radial artery with very much caution to avoid any spasm and finally connect with cephalic vein (end to side) by 7 '0' prolene without any tension or any acute angle. Similar technique was also followed during brachio-cephalic or brachio-basilic anastomosis but transverse incision was made in cubital fossa and 6 '0' prolene was used for vascular anastomosis. Adequate haemostasis was done. Wound was closed in single layer by 3 '0' non-absorbable silk.

We did follow-up of these 480 patients by the collaboration with operation room staff, dialysis unit staff & nephrologists. Most of the patients were discharged on the same day. Relevant instructions about care of arteriovenous fistula were given to the patients and their relatives. Handball exercises were taught to patients after operation. First routine follow up was done on 3rd postoperative day then once a week for 4 weeks then twice a month for 2 months. All patients were looked for any complications or any concern.

Results

From 1st January, 2014 through 31st December, 2014, 480 patients with end stage renal disease underwent procedure for AVF creation and age of the patient ranged from 14 to 70 years with mean age of 49.33 years. Majority of the patients (73%) were between 40-70 years of age. Out of these 480 patients, 270 (56.25%) were male and 210 (43.75%) were female.

This study found that 480 end stage renal disease (GFR ≤15 ml/min) or CKD stage-V was caused by diabetes mellitus (37%), chronic glomerulonephritis (35%) and Hypertensive Renal Disease (20%).

During this study period it was found that 24 patients (5%) had primary fistula failure, 58 (12.08%) had secondary fistula failure that was due to thrombosis in 34 (7.08%), aneurysm in 15 patients (3.12%), Stenosis 5 (1.04%) and other causes in 4 patients (.83%). Remaining 398 patients (82.9%) had good functioning AVFs for effective haemodialysis during this period.

Table-1: Distribution of the patient according to Age.

Age	Frequency	Percentage	Mean
14 – 20	9	2	49.33
21 – 30	38	7.9	
31 – 40	81	16.87	
41 – 50	96	20	
51 – 60	120	25	
61 – 70	136	28.33	

Table-2: Distribution of the patient according to Gender.

Gender	No.	Percentage
Male	270	56.25%
Female	210	43.75%

Table-3: Distribution of the patient according to the site of AVFs creation.

Upper limb	No.	Percentage
Right upper limb	110	20.29%
Left upper limb Non-dominant	370	79.71%

Table-4: Distribution of the patient according to type of anastomosis.

Vessel	No.	Percentage
Radio – cephalic	185	38.54%
Brachio – cephalic	245	51.04%
Brachio – basilica	50	10.42%

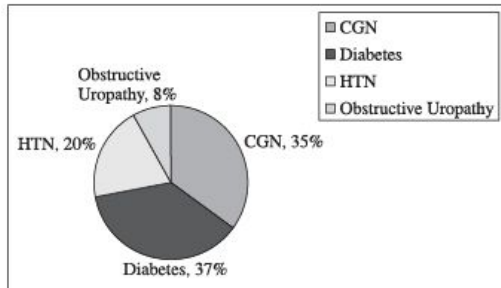


Figure-1: Distribution of the patients according to cause of End Stage Renal Disease.

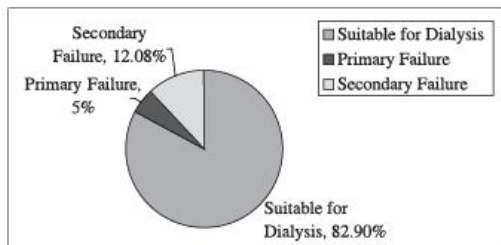


Figure-2: Distribution of the patients according to outcome of arterio-venous fistulas.

Discussion

Kidney disease is a common problem in this country. When both kidneys loses its total or partial function permanently then it considered as chronic kidney disease or CKD. CKD has five different stages on the basis of glomerular filtration rate (GFR). When GFR of an individual equal or less than 15ml/mint then it is called CKD-V or End Stage Renal Disease (ESRD). About 30-35 thousand patients die every year due to end stage renal disease. Many of these patients are not aware of their kidney disease even 6 months before death.

One study showed that there was 17 to 18 million of adult population suffered from chronic kidney disease (CKD) stage 1 to stage 5.^{5,7,8,9} Dialysis or renal transplant is the mode renal replacement therapy in end stage renal diseased patient to sustain their lives. Hemodialysis is the commonest mode of therapy for many ESRD patients. A good functioning vascular access is essential for haemodialysis. There are three types of vascular accesses that are arteriovenous fistula (AVF), prosthetic arteriovenous graft (AVG) and Tunnel Cuffed Catheter (TCC). But TCC acts as a bridge to obtain either AVF or AVG. Functional survival of AVG is much shorter than AVF. AVG has a higher incidence of

thrombosis and infection than AVF. AVG infections are serious complications and are the second leading cause of dialysis access loss.¹⁰ So, AVF is the preferred type of vascular access for haemodialysis as because it has less chance of infection, higher patency, less financial burden and excellent patient comfortability. Although arteriovenous fistulas have some undesirable complications. From this study, it was found that 40 to 70 years age group patients (73.3%) suffered from ESRD and male patients were more (56.25%). The commonest causes of ESRD were diabetes (37%), CGN (35%), HTN (20%) and others including obstructive uropathy (8%). Left upper limb is the first choice for construction of AVF but if there is any unsuitability of the left hand vessels then second upper limb is to be considered for construction for AVF.

When AVF failed within two weeks of creation & never used for haemodialysis then it is considered as primary failure. In this study it was found that only 24 patients (5%) developed primary failure out of 480 patients. Causes of primary failure might be poor quality of vessels, technical issue, haemorrhage and infection. All patients underwent haemodialysis through arterio-venous fistula at least 6 weeks or later from the date of construction. These group of patients who lost their AVF after using for haemodialysis then it is considered as secondary failure. 58 (12.08%) patients lost their AVFs after using a certain time during this study period. This secondary failure was caused by thrombosis in 34 patients (7.08%), aneurysm in 15 patients (3.12%), stenosis in 5 patients (1%) and other reason in 4 patients (.8%).

Pre-operative patient assessment that should be included physical examination, nutritional status & Doppler ultrasound of upper limb in some cases, early construction of AVF, late puncture (not less than 6 weeks), minimum trauma to the anastomotic vessels and meticulous anastomosis without any acute angle or tension could be important considerable factors to obtain best outcome of arteriovenous fistula.

Conclusion

A good functioning AVF is an essential requirement for effective haemodialysis in patient with ESRD. The complicated AVFs may be the causative factor for hospitalization in chronic haemodialysis patient that may lead to huge financial burden to the patient as well as physical morbidity and ultimately be fatal. So, adequate AVF care should be a priority not only for the patient but also for whole professional team including dialysis staff.

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Original Article

Evaluation of “Ketofol” (Ketamine Propofol Combination) for Day Case Anaesthesia-A prospective study

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Abstract

Background: Anaesthetics of shorter action play pivotal role in the outcome of Day Case Anaesthesia.

Objectives: To evaluate the efficacy of "Ketofol"(ketamine Propofol Combination) for Day Case Anaesthesia.

Methods: 1013 adult patients of both sex, age from 18 to 50 years, ASA physical grading I and II were scheduled to undergo different day case surgical procedures at Cantonment Military Hospital, Dhaka, in two calendar years from July 2010 to June 2012 were randomly included in the study. Ketofol (1:1 mixture of ketamine 10 mg/ml and propofol 10 mg/ml) was administered intravenously by using titrated aliquots. All perioperative vital parameters, events, complications, recovery status and doses were recorded and subsequently analyzed.

Results: In 1013 patients mean dose of ketofol administered was 0.75 ± 0.14 (mean \pm SD) mg/kg body weight, mean procedure time was 31.26 ± 9.37 (mean \pm SD) minutes and mean recovery time was 16.27 ± 4.68 (mean \pm SD) minutes and mean recovery score (Aldrete recovery score) was 8.29 ± 0.25 (mean \pm SD). Surgery was successfully done in every patient. Anaesthesia related complications like desaturation (SpO₂ less than 93%), was noted in 21 (2.07%) patients and corrected with supplemental oxygen, misalignment of airway observed in 17 (1.68%) patients and corrected by repositioning, hypotension observed in 6 (0.59%) cases and corrected with crystalloid administration, transient hypertension (systolic BP more than 30% of baseline record) observed in 9 (0.89%) cases and corrected without any measure. During recovery vomiting was reported in 6 (0.59%) patients and agitation was reported 9 (0.89%) patients.

Conclusion: Combination of ketamine and propofol in a single syringe to be easy to use and highly effective as an anaesthesia regimen with short recovery time in the day case anaesthesia setting. Few side effects occurred and those were either self-limited or responded to minimal interventions.

Keywords: Ketamine, Propofol, Ketofol, Day case anaesthesia.

Introduction

Recent advances in anaesthetic and surgical techniques, combined with cost containment concerns, have made day-case surgery increasingly popular. Day case anaesthesia requires rapid recovery, good quality analgesia and decreased duration of care. Thus, anaesthetic agents in day-case surgery should provide smooth and fast induction of anesthesia, rapid and pleasant recovery, and return to preoperative functional status with optimal postoperative analgesia and minimal side effects. Several intravenous agents may fulfill these criteria and day case anaesthesia can be achieved by a judicious combination of intravenous techniques, resulting in excellent postoperative outcome and comfort.

Several studies suggested that combining two anaesthetic drugs ketamine and propofol “Ketofol” when administer together in sedative dose, produces effective sedation and analgesia.¹ Propofol is a very potent anaesthetic without having any analgesic property.² Patient can maintain spontaneous respiration, but very large dose or rapid administration can produce cardio-respiratory depression. Propofol is rapidly eliminates from the blood, the elimination half life is about 2.5 hours, so it is the drug of choice for procedures when patient need less hospital stay and early discharge². Ketamine is the single most popular agent used to facilitate painful procedure in adult and children for nearly two decades.³

It is a “dissociative” anesthetic that functions by blocking communication between the thalamic and limbic regions of the brain, thereby preventing the brain from processing external stimuli.⁴ It provides excellent amnesia and analgesia, and preserves muscle tone maintaining protective airway reflexes and spontaneous respiration.^{5,6} Ketamine and propofol are physiologically compatible for one hour at 23 degree celsius, when administer together.¹ In sub-anaesthetic blood level, ketamine produces intense analgesia, incidence of emergence phenomenon, nausea, vomiting and cardiovascular stimulation are lower when sedated with Propofol, and allows early and smooth recovery, which may not be present when ketamine used with benzodiazepine.^{7,8}

This prospective descriptive study was designed to assess the effectiveness and consider the safety of intravenous ketofol for day case anaesthesia.

Materials and Methods

We performed a prospective descriptive study on patients of both sex, age from 18 to 50 years, ASA physical grading I and II were scheduled to undergo different day case short surgical procedures at Cantonment Military Hospital (CMH), Dhaka, in two calendar years from July 2010 to June 2012. Procedures require time more than one hour. Neurosurgical procedure, pregnancy, raised intracranial pressure, seizure disorder, anatomic airway abnormalities, severe cardiovascular and respiratory disease, severe psychological problem and known to have previous sensitivity or drug reaction with ketamine and propofol were excluded from the study. During pre-anaesthetic assessment, every patient underwent thorough physical examination with ASA classifications. Total anaesthetic procedure was explained to every patient and informed consent was taken.

An intravenous channel was established by 18G venous canula to all patients before starting the procedure. A baseline pulse, blood pressure, respiratory rate, ECG and SpO₂ were recorded. Ketofol was prepared as a 1:1 mixture of ketamine 10 mg/ ml and propofol 10 mg/ml mixed in a 10 ml or 20 ml syringe. Anaesthesia using ketofol was performed by the intravenous administration of 1 to 3 ml aliquots titrated at the discretion of the anaesthesiologist. Patient’s heart rate, blood pressure, respiratory rate, SpO₂ and ECG were monitored and recorded through out the whole procedure in the following sequences-

t₀ - baseline (just before induction)
t₁ - 05 min after induction

t₂ - 10 min after induction
t₃ - 20 min after induction
t₄ - 30 min after induction

A full set of resuscitation equipments including suction apparatus, oxygen, a bag valve mask, age appropriate airway, resuscitation drugs and were available throughout procedure and recovery to combat any adverse event. Any serious adverse events as well as side effects like desaturation (SpO₂ less than 93 %) hypertension (systolic BP more than 30% of baseline record), hypotension (systolic BP less than 90 mm of Hg), vomiting, agitation and nightmares were observed, recorded and managed.

At the end of procedure all patients were shifted to the recovery room, vital parameters were monitored. Presence of any complication like nausea, vomiting, emergence delirium, pain were observed, managed and documented. Recovery status will be assessed by Aldrete Recovery Score (Table VII).⁹ Patients will be considered to be ready to discharge from recovery room when they will have stable vital signs, oriented, have no intractable nausea or vomiting have minimum pain, and Aldrete Recovery Score is persistently at least 8 or more than 8. Recovery time was calculated as the time from the last dose of medication given until discharge criteria were met.

Data from anesthetic, procedure records and history charts of patients were recorded. The general data included age, sex, height, body weight, and ASA physical status. The anesthetic data encompassed co-morbid disease, duration of procedure, sedation score, and complications evolved during procedure, recovery score, time and complications. Results were reported using descriptive statistics (Microsoft Excel; Microsoft Corporation) and expressed as mean ± standard deviation (SD) or percentage (%) where appropriate.

Results

Table-I: Patient’s characteristics

Characteristics	Number	Percentage
Sex		
Male	475	46.89%
Female	538	53.11%
ASA physical status		
I	822	81.15%
II	191	18.85%
Age in years (mean +SD)	37.59± 10.79	
Body weight in kg (mean +SD)	54.62± 6.81	

There were 1013 cases, but age and ASA physical status were not the same.

Day case anaesthesia in 1013 during the study period, 475 (46.89%) were male and 538 (53.11%) were female, mean age was 37.59 ± 10.79 (mean +SD) years mean body weight was 54.62 ± 6.81 (mean +SD) kg. ASA physical status I were 822 (81.15%) and II were 191 (18.85%).

Table-II: Co-morbid medical conditions

Co-morbid medical condition	Number	Percentage
Diabetes mellitus	64	6.39%
Hypertension	67	6.71%
Bronchial asthma	29	2.87%
Anaemia	36	3.51%
Renal disease	10	0.96%
Hepatic disease	7	0.64%
Total	213	21.08%

Total number of cases 1013 and there were 191 patients in ASAII classification but some had multiple diseases and total 213 pre-anaesthetic problem found in them.

Co morbid conditions include Diabetes mellitus 64 (6.39%), hypertension 67 (6.71%), bronchial asthma 29 (2.87%), anaemia 36 (3.51%), renal disease 10 (0.96%), and hepatic disease 7 (0.64%).

Table-III: Types of surgical procedures

Surgical procedures	Number	Percentage
Incision and drainage of abscess	230	22.70%
Wound debridement	178	17.58%
Repair of cut injuries and lacerations	182	17.96%
D & C	156	15.41%
Close reduction of fractures	246	24.28%
Close reduction of joint dislocation	21	2.07%
Total	1013	100%

Total number of cases 1013.

Procedures were; incision and drainage of abscess 230 (22.70%), wound debridement 178 (17.58%), repair of cut injuries and lacerations 182 (17.96%), D&C 156 (15.41%) close reduction of fracture 246 (24.28%) and close reduction of joint dislocation 21 (2.07%).

Haemodynamic parameters (heart rate, SBP, DBP) and SpO₂ were shown in table IV

Table-IV: Per operative vital parameters

Time	Heart rate in min	SBP mm of Hg	DBP mm of Hg	Resp rate in min	SpO ₂ (%)	ECG
t ₀	86±8.92	114±12.41	68±9.14	16±2.14	98±0.82	SR

Time	Heart rate in min	SBP mm of Hg	DBP mm of Hg	Resp rate in min	SpO ₂ (%)	ECG
t ₁	94±6.31	122±10.67	76±8.75	18±3.52	99±0.34	SR
t ₂	96±7.64	124±9.18	77±7.28	18±4.17	98±1.28	SR
t ₃	94±8.14	121±8.31	76±6.64	16±5.42	98±1.75	SR
t ₄	91±6.57	116±7.16	72±6.92	16±3.77	99±0.16	SR

Total number of cases 1013

SR – Sinus rhythm

Table shows vital parameters were Stable Anaesthesia related complications presented in table V

Table-V: Sedation related complications

Complications	Number	Percentage
Desaturation	21	2.07%
Airway misalignment	17	1.68%
Hypotension	6	0.59%
Hypertension	9	0.89%
Vomiting	6	0.59%
Agitation	9	0.89%
Total	68	6.71%

Total number of cases 1013

Incidence of desaturation (SpO₂ less than 93%), was noted in 21 (2.07%) patients and corrected with supplemental oxygen. Airway problem; misalignment of airway observed in 17 (1.68%) patients and corrected by repositioning. Hypotension (systolic BP less than 90 mm of Hg) observed in 6 (0.59%) cases and corrected with crystalloid administration, transient hypertension (systolic BP more than 30% of baseline record) observed in 9 (0.89%) cases and corrected without any measure. During recovery vomiting was reported in 6 (0.59%) patients and agitation was reported in 9 (0.89%) patients. There were no serious adverse events reported in any patient.

Table-VI: Anaesthesia related data

Data	Values (mean ± SD)
Dose of ketofol (mg/kg body weight)	0.75 ± 0.14
Mean procedure time (minutes)	31.26 ± 9.37
Mean recovery time (minutes)	16.27 ± 4.68
Mean recovery score during procedure (Aldrete recovery score)	8.29 ± 0.25

Total number of cases 1013.

The mean dose of ketofol administered was 0.75 ± 0.14 (mean ± SD) mg/kg body weight. The mean procedure time was 31.26 ± 9.37 (mean ± SD) minutes and mean recovery time was 16.27 ± 4.68 (mean ± SD) minutes.

Table-VII: Aldrete Recovery Score

Parameter	Number
Activity	
Voluntary movement of all limbs to command	2
Voluntary movement of two extremities to command	1
Unable to move	0
Respiration	
Breathe deeply and cough	2
Dyspnea, hypoventilation	1
Apneic	0
Circulation	
BP +/- 20 mm Hg of pre-anaesthesia level	2
BP > 20-50 mm Hg of pre-anaesthesia level	1
BP > 50 mm Hg of pre-anaesthesia level	0
Consciousness	
Fully awake	2
Arousable	1
Unresponsive	0
Colour	
Pink	2
Pale, blotch	1
Cyanotic	0

Total score must be > 8 at conclusion of monitoring. The mean recovery score (Aldrete recovery score) was 8.29 ± 0.25 (mean \pm SD). Surgery could be completed satisfactory in every case and patients were discharged to home with no residual side effects.

Discussion

Ketofol is a relatively new idea for most practitioners. This study represents an application of the combination of two well-known medications whose characteristics appear to be complimentary. The mixture of ketamine and propofol into a single syringe in a 1 to 1 ratio offers a simple, practical approach to medication preparation and use. The addition of ketamine to propofol is thought to counteract the cardiorespiratory depression that occurs when propofol is used alone, whereas propofol blunts the psychometric and nauseant effects of ketamine. Ketamine provides an analgesic effect that is absent when propofol is used alone. Using ketamine and propofol in combination allows sedation to be achieved with lower total doses of each drug, resulting in favourable condition for surgical procedures and rapid recovery time profiles.

Our study shows ketofol to be an effective and apparently safe day case anaesthesia regimen. Short recovery time is a valuable attribute of day case anaesthesia. The mean recovery time of 16.27 ± 4.68 (mean \pm SD) minutes in our study is comparable to that of other anaesthetic regimens noted for their rapid recovery times. Studies of propofol sedation report recovery time from 15 ± 11 minutes¹⁰ to 23 ± 11 minutes.¹¹ Mean recovery time from etomidate have been reported between 12.6 ± 10 minutes¹² and 17.0 ± 10.1 minutes.¹³ Studies of fentanyl/midazolam combination have shown recovery time from 28.5 minutes¹⁴ to 113.7 ± 36.9 minutes.¹⁵

In this study, adverse effects with ketofol were less. There were no cases of bradycardia, or laryngospasm. At discharge, no patient demonstrated sequelae from any adverse event. Of the 21 (2.07%) patients experiencing hypoxia, all received supplemental oxygen before and during the procedure. No patient required intubation. The rate of hypoxia in our study is comparable to that of reports in the literature of sedation with propofol alone that showed that hypoxia occurred in 5% of patients and bag valve-mask assist was required in 0.8%.¹⁶ The incidence of hypoxia with etomidate has been shown to be 4%, with bag valve- mask ventilation required in 3% of cases.¹⁷ The incidence of respiratory depression using fentanyl and midazolam has been reported to be 19%.¹⁸ Studies of ketamine sedation report apnea and hypoxia to be rare, usually occurring with rapid intravenous administration.^{19,20} The advantages of ketamine in terms of better haemodynamics intraoperatively when combined with propofol as observed in our study is supported by other studies too.^{21,22} In a comparison of three techniques for intravenous anaesthesia (midazolam-ketamine, propofol-ketamine and propofol-fentanyl), it was found that propofol- ketamine had most stable haemodynamics, midazolam- ketamine had higher number of hypertensive peaks.²³

Emergence reactions and vomiting are considered to be significant adverse effects of ketamine usage, occurring more often in adults than children.²⁴ In a study of 1,022 pediatric patients, emesis was reported in 6.7%, mild emergence in 17.6%, and moderate to severe agitation in 1.6% of patients.²⁴ In another study, emergence phenomena was described in up to 50% of adults.²⁵ In our study, all 9 (0.59%) cases of emergence phenomena occurred in adults, and of these, only 1 was treated with midazolam. According to the expected rate

of occurrence of emergence phenomena in adults described in the literature, our result suggest that ketofol may be associated with a lower rate of unpleasant emergence than ketamine alone. In our study per or postoperative vomiting found in 6 (0.59) cases. Green et al found that emesis occurring after Ketamine administration modestly associated with increasing age and higher incident in those patients older than five years of age (12.1%) compared with younger patients (3.5%) which can be reduced by combining it with propofol²⁶.

Limitation of the study was not being able to measure end tidal carbon di oxide (ETCO₂) during procedure due to unavailability of that facility in spontaneously ventilated patients.

Conclusion

We found the combination of ketamine and propofol in a single syringe to be easy for use and highly effective as an anaesthesia regimen in the day case anaesthesia setting. Ketofol showed a short recovery time which is a valuable attribute of day case anaesthesia. As with all anaesthetics, adverse effects are possible, and thus, appropriate monitoring and the ability to intervene with cardio respiratory support remain essential. More research comparing ketofol to other common anaesthesia regimens could further document the safety, efficacy, and effectiveness of ketofol in day case anaesthesia.

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Original Article

Prospective analysis of primary open reduction and internal fixation by reconstruction plate for the treatment of midshaft clavicular fractures with greater than 100% displacement in active adult patients

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Abstract

Clavicle fracture is one of the most common bony injuries, rarely requires internal fixation. The most frequent indication for open reduction and internal fixation is non-union. Thompson¹, based on review of 135 non-unions, found 117 (90%) were middle-third fractures with greater than 100% displacement. He estimated the incidence of this fracture type to be only 3% of all Clavicle fractures and suggested that consideration be made for primary internal fixation in this group. In this study, primary Open reduction and internal fixation by reconstruction plate was done in 26 patients with mid-shaft fracture of the clavicle with greater than 100% displacement. All the patients were followed up for one year to see the consequences of treatment. All the fractures were united. Average duration of fracture union was 16.2±2.2 weeks. Only one patient developed delayed union. There were no symptomatic malunion. All the patients regained full range of movements at the end of follow up. Functional outcomes of the patients were excellent with the mean Disabilities of Arm, Shoulder and Hand score of 6.4±2.4 and the mean Constant score of 90.4 ±4.2 points for the injured side at one year. So we recommended that primary Open reduction and internal fixation by reconstruction plate is a good option of treatment for mid-clavicular shaft fracture with greater than 100% displacement.

Material and Methods

This prospective study was carried out in different private hospitals in Dhaka and Narayanganj from January 2012 to December 2015. We reviewed the results of twenty six cases of midclavicular fractures with greater than 100% displacement, which were treated with primary open reduction and internal fixation by reconstruction plate placed over the superior surface of clavicle. The patients were evaluated at regular intervals; final follow up for each patient was at one year. Functional assessment was conducted with use of The Disabilities of Arm, Shoulder and Hand (DASH) score and Constant score. Union was evaluated with use of plain radiographs.

Inclusion Criteria

- Fracture of the middle third of the clavicle (Allman classification: Group-1) 2 with greater than 100% displacement
- Age 18-50 yr
- Fresh injuries, not more than 2 weeks old
- Ability to provide informed consent
- Ability to comply with follow-up

Exclusion Criteria

- Non-midshaft fracture (Allman classification: Group-2 and Group-3)
- Age: <18yr and >50yr
- Polytrauma
- Open fracture
- Pathological fracture
- Preexisting shoulder pathology on affected side
- Fracture >2 weeks old
- Neurovascular disorder
- Head injury at time of trauma
- Medical contraindications to general anesthesia

Results

The age of the patients at the time of injury varied between 18 to 50 years with average of 36.6 years. Among 26 patients, twenty (76.92%) were male and six cases (23.08%) were female. All patients were right-handed. Twelve fractures (46.15%) involved the right clavicle (on the dominant side) and Fourteen (53.85%) involved the left clavicle (on the non-dominant side)

Causes of injury:

In this study, thirteen patients (50%) developed fractures as a result of road traffic accident. Other causes were fall onto shoulder in eight patients (30.77%), direct blow on the point of shoulder in three patients (11.54%) and fall on outstretched hand in two cases (7.69%).

Range of Motion:

Motion of the injured shoulder averaged $159.6 \pm 6^\circ$ of forward flexion, $163.2 \pm 9^\circ$ of abduction, $89.8 \pm 10^\circ$ of external rotation and $69.5 \pm 9^\circ$ of internal rotation. None of these values were significantly different from those of the contralateral, uninjured shoulder.

Union:

Average duration of fracture union was 16.2 ± 2.2 weeks. Delayed union occurred in one case (3.84%).

Clavicle Length Measurements:

Radiographic measurements at the final visit revealed no significant shortening of the injured clavicles as compared with the contralateral uninjured clavicles; in only 1 case (3.84%), shortening of 11 mm developed without any functional deficit.

Complications:

In this study, no major complications occurred. One patient (3.84%) developed superficial wound infection that required surgical dressing and antibiotics. One patient (3.84%) developed delayed union which united at 25 weeks. Shortening of 11mm developed in one case (3.84%). Scar-related symptoms occurred in one patient (3.84%) because of tender scar and keloid formation. Two patients (7.69%) presented a prominent hardware and required removal of implant after union was completed. Three patients (11.54%) had residual skin numbness caudal to the incision.

Patient-Oriented Outcomes:

The mean DASH score at the final visit was 6.4 ± 2.4 . Functionally this was very acceptable and similar to the normative value for the general population. The mean Constant score was 91.1 ± 3.1 points for the uninjured side and 90.4 ± 4.2 points for the injured side. No significant difference in Constant score was found between the sides ($p = 0.3$), and the scores for both sides were similar to published normative values.

Discussion

Middle-third fractures are the most common clavicle fractures, accounting for approximately 80% of all fractures. Most (97%) of the fractures in this group are not completely displaced and can be treated

conservatively without surgery. However, of middle-third clavicle fractures are completely displaced and shortened. This small group of fractures accounts for 90% of nonunion in middle-third fractures and therefore may warrant early open reduction and internal fixation.³

Non-union rate of 15% was reported in 52 patients with widely displaced middle-third clavicle fractures treated without surgery.⁴ All fractures with an initial shortening >2cm resulted in non-union. Similar studies reported seven non-union (11%) and nine symptomatic malunion (13.8%) out of 65 patients.⁵ Another study reported twelve nonunions (34%) and four symptomatic malunions (11%) out of the thirty-five non-operatively treated patients.⁶ 17.4% non-union was reported in nonoperatively treated displaced midshaft clavicular fractures.^{7,8} Studies of non-operative treatment of completely displaced, mid-shaft fractures of the clavicle were recently summarized in a meta-analysis that found a nonunion rate of 15.1% following non-operative care. Hill et al⁴ were the first to use a patient-oriented outcome measure and found that 31% of patients described unsatisfactory outcome after non-operative care of displaced clavicle fractures. High prevalence of nonunion, symptomatic malunion and unsatisfactory patient-oriented outcome following non-operative treatment support primary internal fixation of completely displaced midshaft clavicular fractures (Allman classification: Group-1) in active adult patients.

The type of internal fixation may be intramedullary or plate fixation. In our study, we used reconstruction plate which was easily contoured because of its malleable properties. All patients were active adult with mean age (and SD) of 36.6 yrs ± 5.6 ranging from 18 to 50 yrs. Among them, twenty (76.92%) were male and six cases (23.08%) were female.

In this study, the leading cause of fractures was road traffic accident; thirteen fractures (50%) resulted from RTA.⁹ and RTA was described the most common cause of injury for clavicular fractures.¹⁰

In this series, the mean time for fracture healing (radiographic union) was 16.2 ± 2.2 weeks. Delayed union occurred in one case (3.84%). One study treated 33 clavicle fractures with internal fixation by reconstruction plate; the mean time for fracture healing was 16.8 weeks.¹¹ Non union was reported in 16.4 weeks of the mean time for fracture healing in sixty seven operated patients.⁵ They had two nonunions (2.98%). In our

study, all fractures were united. Similar result were reported in 20 (100% union) fresh fractures following plate fixation.¹² Some also reported 100% union in 28 fresh fractures following plate fixation.⁷

We observed some post-surgical and hardware-related complications in this study. One patient (3.84%) developed superficial wound infection that responded to surgical dressing and antibiotics in two weeks. Other complications were delayed union in one patient (3.84%) which united at 25 weeks, shortening of 11mm in one case (3.84%), tender scar and keloid formation in one patient (3.84%), prominence of the hardware in two patients (7.69%) and residual skin numbness caudal to the incision in three patients (11.54%). Canadian Orthopaedic Trauma Society studied sixty two patients of displaced midshaft clavicular fracture with plate fixation and observed that five patients (8.06%) had local irritation and/or prominence of the hardware, three (4.84%) had a wound infection, and one (1.61%) had mechanical failure. In this study, no patient developed deep infection or hardware failure.¹³

DASH disability/symptom score is designed upon asking questionnaires on 30 items about the patient's symptoms as well as his/her ability to perform certain activities. Scaling was ranked from 0 indicating least disability to 100 indicating most disability.¹⁴ In our study, the mean DASH score at one year was 6.4. In another series, the mean DASH score at one year was 3.4 in 86 operated patients.¹⁵ In other series, the mean six-month DASH score was 9.9 in 33 patients with plate fixation.¹¹ All the scores were similar to the normative value for the general population.

The Constant-Murley score (CMS) is a 100-points scale composed of a number of individual parameters: pain (15 points), activities of daily living (20 points), strength (25 points) and range of motion (40 points). The higher the score, the higher the quality of the function.¹⁶ In our study, the mean Constant score at one year was 90.4 ± 4.2 points for the injured side and 91.1 ± 3.1 points for the contralateral uninjured shoulder. $p = 0.3$, which means that there were no significant differences in functional outcomes of the patients between healthy uninjured side and operated injured side conducted by Constant-Murley score. In one study, the Constant-Murley score at one year was 96 in fifty eight patients treated with open reduction and plate fixation.¹⁷ In another series, the mean Constant score at one year was 87.8 (n = 86).¹⁵ All the scores were similar to the normative value.

In this study, primary Open reduction and internal fixation by reconstruction plate was done in 26 patients with mid-shaft fracture of the clavicle with greater than 100% displacement. The results were encouraging. All fractures were united. No patient had shoulder droop, and none had impairment of range of motion or shoulder strength. At one year after the injury, all the patients were satisfied with the appearance as well as function of the shoulder. DASH score and Constant score at one year showed that the functional outcomes of shoulder were excellent.

Conclusion

There is a high prevalence of symptomatic malunion and nonunion after traditional nonoperative treatment of midshaft clavicular fractures with greater than 100% displacement; primary open reduction and internal fixation by reconstruction plate results in low rate of malunion and nonunion with excellent functional outcome. This study supports primary open reduction and internal fixation by reconstruction plate as a reliable option of treatment for midshaft clavicular fractures with greater than 100% displacement in active adult patients.

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Original Article

Prophylactic use of Ciprofloxacin-Metronidazole and Ceftriaxone-Metronidazole in appendectomy & cholecystectomy in Dhaka National Medical College Hospital

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Abstract

Appendectomy & Cholecystectomy are common abdominal operation worldwide. Before surgery, antibiotics are usually used in hospitals to avoid post-operative complications. 150 patients (age range 20-45 years) were taken from Dhaka National Medical College Hospital for interventional study. When patients were selected for appendectomy or cholecystectomy, either ciprofloxacin plus metronidazole or ceftriaxone plus metronidazole were given intravenously. The patients were divided into 2 groups. Group I received drugs ciprofloxacin plus metronidazole and group II received drugs ceftriaxone plus metronidazole. There were 48 & 27 cases of appendicitis in group I & group II respectively and 27 & 48 cases of cholecystitis in group I & group II respectively out of total 150 study subjects. It was observed that the rate of infection was 8% in group I and 10.6% in group II.

Keywords: Ciprofloxacin, Ceftriaxone, Metronidazole, Surgery.

Introduction

Appendicitis and cholecystitis are more common diseases in our country. Appendectomy is the most common abdominal operation worldwide.¹ For treatment of appendicitis & cholecystitis, surgical intervention is required. Before surgery, antibiotics are usually used in hospitals to avoid post-operative complications. Post-operative surgical site infections remain a major source of illness and a less frequent cause of death in the surgical patient. The incidence of infection varies from surgeon to surgeon, from hospital to hospital, from one surgical procedure to another and most importantly from one patient to another.²

The use of prophylactic antibiotic reduces wound infections in elective open cholecystectomies.³

The antibiotic therapy for the treatment of intra-abdominal infections greatly varies according to the severity of infection.⁴

Cephalosporins (Ceftriaxone) have been well documented as effective prophylactic agents in gastrointestinal and vascular surgery.⁵

The quinolone antibiotic have been a major advance for the treatment of various types of infections. These agents have a generally good safety profiles, broad-spectrum activity & favourable pharmacokinetics. Although older quinolones such as ciprofloxacin were effective as prophylactic agents for biliary procedures & colorectal

surgery and for the treatment of intra-abdominal infections, the use of these older quinolones was limited by the development of resistant organisms. In addition, because these agents had poor activity against anaerobes such as *Bacteroid fragilis*, the agents had to be combined with an antianaerobic agent, such as metronidazole, when anaerobic coverage was required.⁶

Sequential ciprofloxacin plus metronidazole IV to oral therapy is statistically equivalent to ceftriaxone plus metronidazole. The switch to oral therapy with ciprofloxacin plus metronidazole is as effective and safe as continued IV therapy in patients able to tolerate enteral feeding.⁷

Materials and methods

150 patients of Dhaka National Medical College Hospital were taken for interventional study. This study was undertaken between August 2007 to July 2008. Once patients were selected for surgery the drug regime-either ciprofloxacin plus metronidazole or ceftriaxone plus metronidazole during and after surgery were decided independently by the surgeon in the hospital. The patients were classified into following groups:

Group I: Ciprofloxacin plus metronidazole.

Group II: Ceftriaxone plus metronidazole.

The information regarding antimicrobials prescribed, name of the antibiotics, duration of antimicrobial therapy, indications for which patients underwent

surgery and incidence of post-operative infection were recorded in data collection form. Patient underwent elective surgery were included in this study. All analysis was done using the statistical package for social science (SPSS) software for window. To compare the differences between groups chi-square tests were performed. P <0.05 was considered as the level of significance in all cases.

Results

A total number of 150 patients entered in the study who were divided in 2 groups containing 75 patients in each group.

Table-1: Gender, age and clinical condition of the study subject.

Group	Gender		Age	Clinical condition	
	Male n (%)	Female n (%)	Mean ± SD	Appendicitis n (%)	Cholecystitis n (%)
Group I	28 (37.3)	47 (62.6)	29.6±14.6	48 (64)	27 (36)
Group II	26 (34.6)	49 (65.3)	36.7±14.5	27 (36)	48 (64)

Table-2: Distribution of the study subjects on the basis of monthly income.

Group	Monthly Income		
	Status I n (%)	Status II n (%)	Status III n (%)
Group I	32 (42.6)	37 (49.3)	6 (8)
Group II	20 (26.6)	48 (64)	7 (9.3)

Status I: Monthly income <5000Tk

Status II: Monthly income 5000 - 10000Tk

Status III: Monthly income >10000Tk

Table-3: Rate of infection.

Group	Outcome	
	No Infection n (%)	Infection n (%)
Group I	69 (92)	6 (8)
Group II	67 (89.3)	8 (10.6)
Total	136 (90.6)	14 (9.3)

Discussion

Once patients were selected for surgery the drug regime - either ciprofloxacin plus metronidazole or ceftriaxone plus metronidazole during and after surgery were decided independently by the surgeon in the hospital.

Male-female distribution of the study subjects were 28 & 47 in group I and 26 & 49 in the group II respectively. In one study, the mean age was 36 years for men and 33 years for women. There were no gender-related differences in ciprofloxacin pharmacokinetic in men and women of middle age.⁸

There were 143 patients who underwent appendectomy in another study period. The mean age and SD at operation was 28.1±15.8 years. There were 57% female patients.¹

In the present study, the mean age of the study subjects were 29.6 (±14.6), 36 (±14.5) in group I and group II respectively. There was 64% & 36% appendicitis in group I and group II respectively and 36% & 64% cholecystitis occurred in group I and group II respectively.

In group I, 42.6%, 49.3% and 8% patients were under status I, status II and status III respectively.

In group II, 26.6%, 64% and 9.3% patients were under status I, status II and status III respectively.

Cost of treatment is always a consideration in the surgical procedure particularly for the patients belonging to low income section of the population. It has been found that more than 90% of the study subjects in this hospital had monthly income less than ten thousand taka only.

There were 14 cases of infection out of total 150 study subjects. It was observed that in group-I, the rate of infection was 8% and in group-II, it was 10.6%. In one particular study the rate of infection was 3.8%, 1.4% and 3.3% in case of preoperative, perioperative and post-operative cases respectively.²

Now a days ciprofloxacin-metronidazole and ceftriaxone-metronidazole combination are chosen by surgeon to prevent wound infection following major abdominal surgical procedures. Ceftriaxone is understandably costly compared to ciprofloxacin.

The findings of another study demonstrated that post operative infection is more common in those patients who needed prolonged time for operation. The prophylactic use of antimicrobial agent to reduce postoperative infection has been frequently advocated. The objective of antibiotic prophylaxis is to prevent postoperative infection which is the primary cause of morbidity and mortality in patients undergoing surgery today. The infection rate could be reduced if sterilization procedure of the operation theatre and general condition of the patients were improved.⁹

If the risk factors could be minimized, single dose prophylactic antibiotic can be effectively practiced in our country.

Conclusion

In appendectomy & cholecystectomy, the prophylactic use of ciprofloxacin plus metronidazole is more effective to prevent post-operative infections than ceftriaxone plus metronidazole. Antibiotic prophylaxis in major abdominal surgical procedures reduces the post-operative complications as well as morbidity and mortality.

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Original Article

Prescribing patterns of anti-diabetic drugs among type 2 diabetic patients at a private Medical College Hospital in Mymensingh

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Abstract:

Background: The right choice of anti-diabetic drugs among type 2 diabetic patients carries a vital role.

Objective: The aim of the present study was to evaluate the prescribing patterns of anti-diabetic drugs among type 2 diabetic patients at tertiary level teaching hospital in Mymensingh.

Methods: A descriptive, cross sectional study was conducted from July 2015 to June 2016 among patients attending at Medicine Outpatient Department of the Community Based Medical College Hospital. Data were collected through the reviewing of the prescriptions and interviewing of the patients. The collected data were entered into the computer and analyzed by using SPSS (version 20.1) to know the prescribing patterns of anti-diabetic drugs among type 2 diabetic patients. The study was approved by the institutional ethical committee.

Results: In a pool of 150 type 2 diabetics, more than half were female (n=100, 67%). Higher proportion (54.7%) of diabetes was among middle aged patients (41-60 years). A total of 558 drugs were prescribed during the study period. Less than half (45.9%) of the total prescribed drugs were to the anti-diabetic groups. Sulfonylureas were the most commonly prescribed class (64.7%) followed by Biguanides (45.3%). Half of the patients (50.7%) were prescribed with two anti-diabetic drugs. Average number of drugs per prescription was 3.72. None of the drugs was prescribed by generic name. Drugs prescribed from an essential drug list (EDL) were 51.9%.

Conclusion: Prescribing pattern need to be improved in accordance with World Health Organization (WHO) core prescribing indicator. This study will help the clinician to take appropriate measure for the improvement of prescribing patterns and use of essential drugs to the patients to prevent prescribing errors and thus promote rational use of drugs.

Keywords: Anti-diabetic drugs, prescribing patterns, essential drug.

Introduction

Diabetes mellitus is the chronic disorder emerging as a major world health problem which increases the rate of morbidity and mortality. The prevalence of diabetes mellitus is growing rapidly worldwide and is reaching at epidemic proportions.¹ It is estimated that there are currently 422 million people with diabetes worldwide and in Bangladesh it is estimated about 8.4 million. The higher prevalence was found in urban areas predominantly among women. Urbanization and urban migration have been established as a risk factor for an increased occurrence of diabetes. The trend has been authenticated by the World Health Organization (WHO).² Type 2 diabetes characterized by high level of blood glucose due to the impaired action of insulin and

insufficient insulin production by pancreas.³ The diagnosis is based on the World Health Organization (WHO) national diabetic group criteria of 2006, which is for a single raised blood glucose reading with symptoms or raised values on two occasions. Medications for diabetes mellitus need to be taken for the entire life and factors like efficacy, side effects, drug interactions and cost of therapy need to be taken into consideration.⁴ Since 1995, a dozen orally administered medications or combination of medications for the management of type 2 diabetes mellitus have been approved by Food and Drug Administration (FDA). Prescription of such drugs varies from physician to physician depending upon the glycemic status and complications due to diabetes.³ However, to, date, there is no reliable evidence on the

prescription pattern of anti-diabetic drugs of type 2 diabetes mellitus in Mymensingh. The aim of this study was to evaluate the prescribing patterns of anti-diabetic drugs among type 2 diabetic patients at tertiary level teaching hospitals in Mymensingh. This study undoubtedly will benefit the physicians for successful management of diabetes mellitus in the future.

Materials & method

A descriptive, cross sectional study was conducted from July 2015 to June 2016 among 150 patients attending at medicine outpatient department of the Community Based Medical College Hospital after obtaining requisite consent from the patients. Purposive sampling was adopted for collecting data. The study was approved by the institutional ethical committee. The interviews were held directly in the corridor just outside the Medicine Outpatient Department. Prescription slips were taken from the patients after taking the written consent and the relevant information was entered into the predesigned proforma to know the prescribing patterns of anti-diabetic drugs among type 2 diabetic patients. All filled questionnaires on the pattern of using anti-diabetic drugs were entered into the computer for analysis using SPSS version 20.1. Only descriptive statistics were computed.

Results

More than half of the respondents (54.7%) were in the middle age group (41-60 years).

(Table -1)

Table-1 Age distribution of the study population (n=150)

Age group (years)	Frequency (%)
30- 40	36 (24.0)
41-60	82 (54.7)
> 60	32 (21.3)
Total	150 (100.0)

About two-thirds (67%) of the respondents were female. (Figure-1)

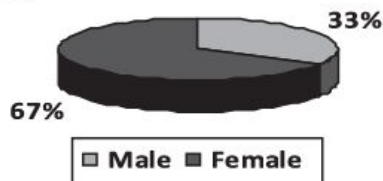


Figure-1 Pie chart showing sex distribution of the study population

Totally 558 drugs were prescribed during the study period. 45.9% of the drugs belong to the anti-diabetic groups, while 54.1% belong to other groups such as anti-microbial, anti-hypertensive, vitamin etc. (Figure 2)

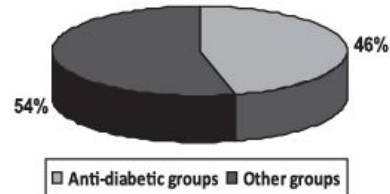


Figure-2: Pie chart showing percentage of anti-diabetic groups and other groups

Half of the respondents (50.7%) were being prescribed with two anti-diabetic drugs. Near to it 40% were being prescribed with single anti-diabetic drug. Average number of anti-diabetic drugs per prescription was 1.7. (Table-2)

Table-2: Distribution of anti-diabetic drugs per prescription (n=150)

Number of anti-diabetic drug	Frequency (%)
1	60 (40)
2	76 (50.7)
3	12 (8)
4	2 (1.3)
Total	150 (100.0)
Average number of anti-diabetic drugs per prescription	Mean = 1.7

About two-thirds (64.7%) of the respondents were treated with Sulfonylureas, Biguanides was used in 45.3%, Incretin mimetics was used in 21.3% and insulin preparation was used in 32.7 %.

(Table-3)

Table-3: Prescribing frequency of different classes of anti diabetic Agents (n=150)

Class of anti-diabetic drug	Frequency (%)
Sulfonylureas	97 (64.7)
Biguanides (Metformin)	68 (45.3)
Incretin Mimetics	32 (21.3)
Meglitinide (Repaglinide)	02 (1.3)
Alpha Glucosidase inhibitor (Miglitol)	01 (0.7)
Insulin preparation	49 (32.7)

*Patients received more than one drug category in each prescription such as insulin preparation with metformin.

No drugs were prescribed by generic name and more than half (52%) of the drugs were prescribed from essential drug list (EDL). (Table-4)

Table-4: Prescribing pattern of drugs among type 2 diabetic patients according to WHO prescribing indicator (n=150)

Prescribing indicator	Drugs Total	Average	Percentage	Standard derived according to WHO
Average number of drugs per prescription	558	3.72		1.6-1.8
Percentage of drug prescribed by generic name	0		0	100%
Percentage of drugs prescribed from EDL	290		51.97%	100%

Discussion

This study showed that diabetes mellitus was more prevalent in female patients than in male patients. Similar results were obtained in the study conducted by Abebaw et al. (2016), Alam et al. (2014) and Mann et al. (2009).^{5,6,7} This study revealed a higher prevalence of diabetes was among middle aged patients. A study done in India by sajith et al. (2014) also found similar result.¹ A total of 558 drugs were prescribed during the study period. The current study found that less than half (45.9%) of the drugs belonged to anti-diabetic groups. Though Dutta et al. (2014) found that more than half of the drugs (53.6%) belonged to the anti-diabetic groups in India.⁸ In this study average number of drugs per prescription was 3.72 due to presence of co-morbid conditions. Similar picture depicted in India where average number of drugs was 4 per prescription. Ramchandran, Rohith and Isabella (2015) reported that more than one quarter (25.4%) of drugs prescribed by generic name.⁹ None of the drugs were prescribed in generic name in this study. In this study the percentage of drugs prescribed from EDL (WHO) was 51.97 % which was high as compared to the study conducted by Raj, Kamlesh, and HI (27.41%).¹⁰ The average number of anti-diabetic drug per prescription in this study was 1.7. Similar results were obtained in the study conducted by Agarwal et al. (2014)¹¹ where average number of anti-diabetic drugs per prescription was 1.4. In this study majority (50.7%) of the patients were prescribed with two anti-diabetic drugs. This result is consistent with the result of Haile et al. (2015) study¹² where they observed that majority (50.8%) of the patients were prescribed with two anti-diabetic drugs. Sulfonylureas were the most commonly prescribed class (64.7%) followed by Biguanides (45.3%). This reflects that Sulfonylureas and

Biguanides are still the choice of most physicians in the treatment of type 2 diabetes. This present study consistent with the study of agarwal, Jadhav and Deshmukh (2014).¹¹ That study showed that Sulfonylureas (34.14%) were the most common prescribed class followed by Biguanides (31.65%).

Conclusion

Type 2 diabetes mellitus being a chronic disorder requires multiple therapeutic approaches. Sulfonylureas and Biguanides are still the choice of most physicians in the treatment of type 2 diabetes. Majority of the patients were prescribed with two anti-diabetic drugs. Prescribing pattern need to be improved in accordance with WHO core prescribing indicator. Implementation of WHO core prescribing indicators by the prescribers would help to reduce the cost and prevent potentially dangerous drug-drug interaction.

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Original Article

Effects of Isolated Oligohydramnios on Obstetric and Perinatal outcomes in Dhaka National Medical College Hospital

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Abstract:

Background: Oligohydramnios are thought to be associated with increased maternal and fetal morbidities.

Objective: To assess the obstetric and perinatal outcomes in case of isolated oligohydramnios.

Materials and Methods: This study was conducted in the Obstetrics and Gynaecology department in Dhaka National Medical College Hospital from 1st July' 2015 to 31st December' 2015. Pregnant women at or beyond 34 weeks of gestation admitted for labour and delivery with low amniotic fluid index (AFI) \leq 5cm, having no risk factors (group I) were compared with those with an AFI more than 5 cm (Group II) . The mode of delivery and perinatal outcomes were compared to women having normal amniotic fluids.

Results: A total 435 pregnant women were included in this study. Among them 67 pregnant women were in Group I and 368 women were in Group II. There were no demographic characteristics differences between the two groups .But there was significant difference in the gestational age of the mother. In group I 46% women delivered at 34-36 weeks of pregnancy . Regarding mode of delivery, caesarean section rate was more ($P < .01$) in group I than group II. There was no significant difference in meconium staining of liquor between the two groups. Regarding perinatal outcomes there were no significant differences between the two groups such as Apgar score, resuscitation, NICU admission and mortality of babies. But there was significant difference in the birth weight of the babies. About 66% of the babies in group I had birth weight \leq 2.5 kg, which was significant .

Conclusion: Isolated oligohydramnios has no major effect on perinatal outcomes except low birth weight babies. However, caesarean section rate was increased in isolated oligohydramnios group.

Key Words: Oligohydramnios, Amniotic fluid index, Perinatal outcomes.

Introduction

Every fetus is surrounded by a protective covering of amniotic fluid. It cushions fetus from physical trauma, moreover allows fetus lung growth and maturity.^{1,2} By the second trimester, amniotic fluid is being produced primarily through fetal urine production as well as transudation from maternal serum and is resorbed through fetal swallowing. Significant amounts of amniotic fluid are also produced and resorbed from the amniotic cavity by the placenta.^{3,4} Amniotic fluid volume (AFV) is an indirect indicator of fetal well being. There are various ways of assessing AFV. In 1985, a four quadrant method by ultrasonogram for assessing amniotic fluid index (AFI) was described.⁵ Using that technique, an AFI of 8.1-20 cm is defined as normal ; AFI between 5.1-8cm is moderate or borderline oligohydramnios and AFI of 5 cm or less as severe oligohydramnios.

Oligohydramnios can develop in any trimester, although it is more common in third trimester.⁶ The common etiological factors associated with oligohydramnios are premature rupture of membrane, congenital abnormalities of the fetus, placental insufficiency, post maturity, hypertension and pre-eclampsia etc.

It occurs in about 1% to 5% of pregnancies at term^{7,8} and thought to be associated with increased maternal and fetal morbidities such as pulmonary hypoplasia, intrauterine growth restriction, compression of umbilical cord leading to fetal distress during labour. It is found to be associated with an increased rate of labour induction for fetal distress, low Apgar score and high perinatal morbidity and mortality. Labour induction also increases the use of Caesarean delivery, particularly for the primiparous woman with an unripe cervix.⁹ However, some of the recent studies have shown no effect of

isolated oligohydramnios on perinatal outcome.¹⁰

This study was conducted to evaluate the effect of isolated oligohydramnios on the mode of delivery and its association with perinatal morbidity and mortality in our population.

Material and Methods

This comparative study was carried out in the department of Obstetrics and Gynaecology in Dhaka National Medical College Hospital from 1st July’ 2015 to 31st December’ 2015. Pregnant women at or beyond 34 weeks with no high risk factors admitted for labour and delivery were recruited in this study and were divided into two groups. Pregnant women with an AFI ≤ 5cm were included in group I and with those with AFI > 5 cm were included in group II. Pregnant women with diabetes mellitus, pre-eclampsia, cardiac disease, multiple pregnancies, premature rupture of membrane (PROM) were excluded from this study. AFI was estimated by ultrasonography on these women. All outcome variables of these pregnancies were recorded on printed proforma. Outcome variables included demographic characteristics, mode of delivery, presence of meconium, birth weight of babies, Apgar score at 1st min, need for neonatal resuscitation, admission and perinatal mortality. A written consent was taken from each patient. Data was analyzed by using SPSS version 17 and variables were analyzed with Chi-square test.

Results

During the six months study period, 435 patients were included in the study. Out of these, 67 had isolated oligohydramnios and served as group I (exposed) and the rest of the 368 women had normal liquor on ultrasound examination, served as group II (unexposed).

Table-I showed demographic characteristics in two groups, 69% women in group I and 70% women in group II were in the age of 21-30 years. Regarding Antenatal Check-up 63% in group I and 78% in group II had antenatal check-up. Majority of the women (58% in group I and 56% in group II) were primi gravidae. In group I 46% women delivered between 34-36+weeks of pregnancy. But in case of group II, majority of the women (50%) delivered at 37-39+ weeks of pregnancy.

Table-I : Demographic characteristics

Variables	Group I (n=67)	Group II (n=368)	Significance (P-value)
Maternal age			
<20 years	15 (22.38%)	77 (21%)	>.05
20-30 years	46 (68.68%)	259 (70%)	>.05
>30 years	06 (8.9%)	32 (9%)	
Antenatal Check up	42 (63%)	287 (78%)	>.05
Gravida			
Primi	39 (58%)	206 (56%)	>.05
Multi	28 (42%)	162 (44%)	
Gestational age			
34-36+ weeks	31 (46%)	68 (18.5%)	<.05**
37-39 weeks	16 (24%)	184 (50%)	<.05**
40-42 weeks	20 (30%)	116 (31.5%)	>.05

Table-II: Mode of delivery

Mode of delivery	Group I (n=67)	Group II (n=368)	Significance (P-value)
LUCS	58 (87%)	263 (71%)	<.01*
Vaginal delivery	09 (13%)	105 (29%)	<.05**

Table-II showed mode of delivery in two

Groups. About 87% women in group-I and 71% women in group-II delivered by caesarean section. On the other hand there was less vaginal delivery in group-I than group-II (13% vs. 29%).

Table-III expressed presence of meconium in both groups after rupture of membrane or intraoperatively.

Table-III: Presence of meconium

Presence of meconium	Group-I (n=67)	Group-II (n=368)	Significance (P-value)
Present	22 (33%)	28 (24%)	>.05
Absent	45 (67%)	280 (76%)	>.05

Meconium stained liquor was observed in 33% cases in group-I and 24% cases in group-II.

Table-IV showed perinatal outcomes in both groups. About 66% of the babies had birth weight less than 2.5 kg in group-I as compared to 28% in group-II.

Table-IV: Perinatal outcomes

Variables	Group-I (n=67)	Group-II (n=368)	Significance (P-value)
Birth Weight			
<2.5 kg	44(66%)	103(28%)	<.05**
>2.5 kg	23(34%)	205(72%)	
Apgar Score at 1st min			
≥7	55(82%)	316(86%)	>.05
≤7	12(18%)	52(14%)	
Resuscitation	4(6%)	15(4%)	>.05
NICU admission	3(4.5%)	9(2.4%)	>.05
Mortality	2(3%)	9(2.4%)	>.05

Most of the babies were more than 2.5 kg birth weight in group-II. Other perinatal outcomes almost same in both groups such as Apgar score at 1st min, resuscitation (6% vs. 4%), NICU admission (4.5% vs. 2.4%), and perinatal mortality (3% vs 2.4%) of the babies.

Discussion

Assessment of the amniotic fluid volume during antenatal period is a vital indicator for determining potential risk during delivery. Our study has found that pregnancies with isolated oligohydramnios were not associated with adverse perinatal outcomes.

In the present study 69% of the women in the group I and 70% of the women in group II were in the age group of 21-30 years. Similar studies found the same results.^{11,12,13} In this study 58% and 56% women in group II were primi gravida. Other studies showed 60% women were primi gravida.^{14,15} Regarding gestational age in this study 46% of the women delivered between 34-36+ weeks of gestation in group I (this result was statistically significant) which is similar to other studies^{15,16} but differ from another study.^{12,13,17} This difference was iatrogenic. But in group II most of the women (50%) delivered at 37-39+ weeks of pregnancy which was similar to another study.¹⁸

Present study showed that there was more caesarean section rate (87%) in group I than group II. Different studies also found increased rate of Caesarean section among oligohydramnios group. Some studies observed more than two fold higher caesarean section rate in the isolated oligohydramnios group.^{15,16,19,20} Other studies found that the overall Caesarean delivery rates were similar between women with oligohydramnios and control groups (24% vs. 19%).¹² Meconium staining of liquor is an indicator of fetal distress. The association of Oligohydramnios with meconium staining of liquor was also studied. In this study, there was no significant differences in the incidence of meconium staining of the liquor between the two groups. Another study found the same results.²¹ There was significantly higher risk of meconium stained liquor in oligohydramnios group.^{14,22,23}

Among the perinatal outcomes, we found a significantly higher number of low birth weight (<2.5 kg) babies in group-I than group-II which was statistically significant. These differences were actually due to iatrogenic termination of pregnancy at an earlier gestational age in the oligohydramnios group. Other studies reported that isolated oligohydramnios increased the likelihood of low birth weight babies.^{5,24,25} But another study found 10% low birth weight babies.²⁶

Like our study, other perinatal outcomes such as Apgar score at 1st min, resuscitation, NICU admission and mortality did not differ between the oligohydramnios and control groups^{5,16,24} but not consistent with certain trials.^{14,17,27}

Conclusion

Usually oligohydramnios is associated with a higher rate of pregnancy complications and increased perinatal morbidity and mortality. Now a days, oligohydramnios is being detected more often due to routinely performed obstetric ultrasonography.

This study concluded that, isolated oligohydramnios did not increase adverse perinatal outcomes, but caesarean section rate was higher in that group. Therefore, isolated oligohydramnios should not be an indication of labour induction or elective caesarean section.

The limitation of this study was small sample size. Therefore further study with larger sample size and for longer duration should be carried out in future.

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Original Article

Tuberculous Mastitis- A Outpatient department based study in Dhaka National Medical College Hospital

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Abstract:

Background: Tuberculous mastitis is a diagnostic dilemma because of its variable presentations.

Introduction: Tuberculous mastitis is a chronic granulomatous infection that affect female breast though it can affect any human organ except cardiac muscle.

Material & Method: It is a retrospective study starting from July'2010 in Breast and Anal clinic to Fast track service to July'2016. This study includes 28 women (n=28) who were at direct observation & follow-up throughout the treatment period. Youngest person of this series is 20 years of age and the eldest one is 40 (Mean age-29.2). Most patients were from low economy group. The aim is to observe the diversity of presentation & management in Tuberculous mastitis.

Result: Presentations are widely variable ranging from breast lump of different sizes, single or multiple breast abscess and chronic discharging sinus. 27 person have pathology in their left breast. Only one patient was diabetic. For evaluation, all routine investigation including X-ray of Dorsal spine was done but attention was given to tissue diagnosis by either Fine Needle Aspiration Cytology or Biopsy taking as Out Patient Department case for histo-pathological examination. After confirmation of diagnosis, anti-TB drug started through Directly Observed Treatment centre. Weekly follow-up was advised to those patients who needed wound care as well as daily dressing. 12 month anti- TB drug was given to all patient & all of them recovered commonly leaving behind few scars in their breast.

Discussion: Extra-Pulmonary Tuberculosis is a gradually increasing chronic infectious disease in low economy patients. Limitation of this study is irregular medication and follow-up as well as drop out after starting management though Directly Observed Treatment centre is of great help.

Conclusion: The entire situation may be better controlled by increasing awareness among the people and improving living standard.

Introduction

Tuberculosis is the most widespread and persistent human infection in the world. Tuberculous mastitis is a chronic granulomatous infection that effects the female breast but is less common among the extra-pulmonary Tuberculous infections.

Tuberculous mastitis accounts for less than 4% Tuberculous infection in South East Asia.^{1,2}

Sir Astley Cooper reported the first case of Tuberculous mastitis in 1829 and called it 'Scrofulous swelling of the bosom'.³ Tuberculous mastitis may be a part of systemic disease or may be only manifestation of tuberculosis. It occurs frequently in female at reproductive age and is uncommon in pre-pubertal and elderly woman. This could be because of female breast undergo frequent changes during the period of child bearing activity and is

more susceptible to trauma and infection. Thus the risk factors for Tuberculous mastitis include multiparity, lactation, trauma, and past history of suppurative mastitis.^{4,5} Sometimes it is difficult to differentiate from Carcinoma Breast which may co-exist.^{6,7}

Material & Method

It is a retrospective study starting from July'2010 in Breast and Anal clinic to Fast track service to July'2016. This study includes 28 women (n=28) who were at direct observation & follow-up throughout the treatment period. Youngest person of this series is 20 yrs of age and the eldest one is 40 (Mean age-29.2). Most patients were from low economy group.

Inclusion criteria

Affected women who were registered at Directly Observed Treatment (DOT) centre, and were at regular follow-up.

Exclusion criteria

Patients who were irregular at DOT centre and medication.

Aim of this study

To observe the incidence of Tuberculous mastitis in the community and to observe the diversity of presentation of this patients.

Results

All of them were female at reproductive age with regular menstrual cycle. All of them were married and multiparous. From history and physical examination, variable informations were received. One patient was Diabetic and controlled by Endocrinology dept. of DNMCH.

Table-1: Effected Age group (n-28)

20-30 yrs	30-40 yrs
4	24

Most of the diseased patients were from middle age group.

Table-2: Mode of presentation (n-28)

Lump	Single/multiple abscess	Discharging Sinus
12	15	1

Most of the patient presented with cold abscess.

Table-3: Systemic symptoms (Evening pyrexia, weight loss, Anorexia) {n-28}

Present	Absent
16	12

Common systemic symptoms associated with Tuberculosis were present in 16 patients.

Table-4: Palpable ipsilateral axillary lymph nodes (n-28)

Lymph node palpable	Lymph node not palpable
16	12

More than 57% patient had ipsilateral palpable lymph nodes.

Table-5: Investigation protocol: n-28

A. Complete blood count:

Normal CBC	20 patients	Lymphocytosis with high ESR	08 patients
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B. Mantoux Test

+Ve	10 patients	-Ve	18 patients
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C. Sputum for AFB - negative in all patients

D. Chest X-ray (P/A view) & X-ray dorsal spine was normal in all patient.

E. Biopsy (tuberculous granuloma)

FNAC+Ve	12	Incision Biopsy	15	Excision Biopsy	01
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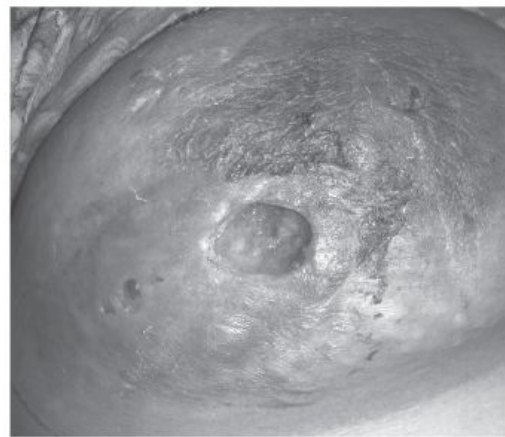
F. Imaging (USG of breast & axilla)

Hypoechoic breast mass.	28	Axillary lymphadenopathy	12
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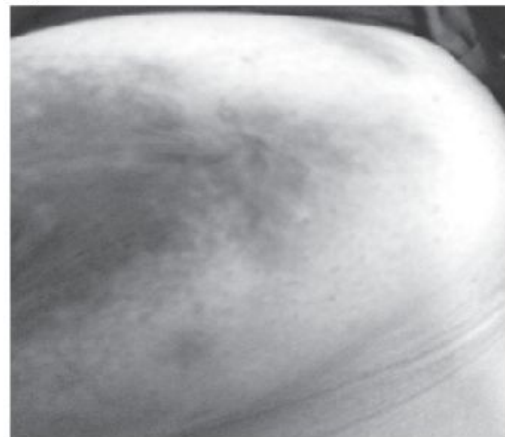
Treatment protocol-Tuberculous mastitis.

16 patients who presented with Cold abscess/ Discharging sinus needed surgical intervention under Anti-tuberculous chemotherapy and required intense follow-up in the initial 2-monthes. All patient received one year uninterrupted anti Tuberculous chemotherapy from DOT centre, at the end of which all patient were checked physically. Investigations such as hematology and imaging were done.

Before Anti-TB drugs



1 year after Anti-TB medication and wound care.



Discussion

Tuberculous mastitis has been classified in five pathological varieties.⁸

1. Nodular form.
2. Diffuse or disseminated form (most common).
3. Sclerosing form-extensive fibrosis rather than caseation. Thus the entire breast is hard with nipple inversion.
4. Tuberculous mastitis obliterans-characterized by periductal fibrosis-resembling fibrocystic disease.
5. Acute milliary tuberculous mastitis, occur as a part of milliary tuberculosis.

Over the last two decades, the last two are very rare, while tuberculous breast abscess is more frequent. Routes of infection most commonly from contiguous seeding or via lymphatic and haematogenous route. Direct inoculation through abrasions of the nipple is rare.²

Common clinical presentation is solitary ill-defined unilateral breast lesion. Multiple and bilateral lesion is uncommon.^{2,7} These lesions may progress to a cold abscess to Tuberculous ulcer with or without sinus formation. 1/3rd of the patients present with pain associated with lump and while another 1/3rd have ipsilateral axillary lymph node involvement.⁹

Ultrasonography, Mammography, CT scan/ MRI are used as regular diagnostic work-up for abscess and sinus tract.⁹

Gold standard for diagnosis of Tuberculous mastitis is demonstration of caseating granuloma from breast tissue and / or lymph node by FNAC or Core biopsy. Bacteriological culture or Ziehl-Neelsen (Z-N stain) stain can rarely identify the bacilli (25% & 12% respectively). Core biopsy/ Excision biopsy is strongly advocated to distinguish from Sarcoidosis and Idiopathic granulomatous mastitis.¹⁰

Medical therapy is the main stay of therapy with anti-TB drugs. Infection with multidrug resistant strain may require 1st and 2nd line drug combinations like Ofloxacin, Ethionamide or Para amino salicylic acid. Surgical intervention is rarely required (14%) where there is lack of response to drugs, cold abscess or sinus.⁹

Conclusion

Tuberculous Mastitis is a relatively rare cause of chronic mastitis but may cause a diagnostic dilemma for its variable presentation. Careful assessment for diagnosis followed by adequate treatment and follow-up can control this disease in the community.

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Original Article

Use of Carbetocin versus Oxytocin for the Prevention of Postpartum Haemorrhage following Caesarean section in Dhaka National Medical College Hospital- An Interventional comparative study

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Abstract:

Background: Postpartum haemorrhage (PPH) is the leading cause of maternal death worldwide. It is a preventable event in abdominal and vaginal deliveries. Preventive measures include prophylactic drug use to aid uterine contraction after delivery, thus avoiding severe blood loss and reducing maternal morbidity and mortality. Carbetocin is a synthetic analogue of oxytocin with a half-life approximately 4-10 times longer than that reported for oxytocin. It combines the safety and tolerability profile of oxytocin with the sustained uterotonic activity of injectable ergot alkaloids.

Objectives: The objective was to compare the effectiveness of carbetocin and oxytocin when administered after uncomplicated cesarean section (CS) for the prevention of postpartum haemorrhage.

Study Design: This is a prospective randomized controlled study comparing the use of carbetocin and oxytocin for the prevention of postpartum haemorrhage following caesarean section of patients admitted at Obstetrics & Gynaecology department of Dhaka National Medical Institute Hospital (DNMIH) from January 2014 to December 2014.

Materials and Methods: A total of 240 patients undergoing caesarean section were randomized to carbetocin (N=120) and oxytocin (N=120) for the prevention of postpartum haemorrhage and analyzed by intention to treat. Women in the carbetocin group (Group A) received a IV bolus of 100µg carbetocin and women in the oxytocin (control) group (Group B) received a IV bolus of 10 IU oxytocin. Baseline demographic and obstetric profile, indications for CS, estimated blood loss, hemoglobin, need for uterine massage, additional uterotonics, uterine tone and involution were compared immediate post-operative and 2 hours after.

Results: Baseline profiles were similar between the two groups. Post-operatively, hemoglobin levels in the carbetocin group were statistically significant and were associated with lesser need for additional uterotonic agents, uterine massage and a well contracted uterus immediate post-operative and 2 hours thereafter. The estimated blood loss was significantly lower in the carbetocin group and blood transfusion required more in oxytocin group however, the two groups did not significantly differ in terms of post-operative blood pressure.

Conclusion: Carbetocin as an uterotonic agent is an acceptable alternative for the prevention of postpartum bleeding in cesarean section. A cost-benefit analysis is mandated.

Keywords: Carbetocin, Oxytocin, Postpartum Hemorrhage, Uterine Tone, Uterine Involution, Randomized Trial.

Introduction

Every minute of every day, a woman dies in pregnancy or childbirth. The biggest killer is obstetric hemorrhage and the most frequent cause is uterine atony with an estimated mortality rate of 140,000 per year or 1 maternal death every 4 minutes.¹

All pregnant women are at risk of complications during the 3rd stage of labour.² Maternal risk factors contribute to the development of postpartum hemorrhage.³ For women undergoing delivery by cesarean section, there is an increased risk of postpartum hemorrhage compared to vaginal delivery.⁴ It is therefore reasonable to advise

routine administration of a uterotonic drug immediately after the baby has been delivered by caesarean section.⁴

Prevention of post-partum haemorrhage (PPH) is a major issue due to its impact on maternal morbidity and mortality. The primary PPH is defined as blood loss more than 500ml after vaginal delivery and more than 1000ml after caesarean section that occurs in the first 24 hours after delivery. Almost 500,000 women die for this potentially preventable cause each year, and upto an estimated quarter of these deaths uses to occur as a consequence of haemorrhage at time of delivery.⁵ The first cause of haemorrhage at the time of delivery is uterine atony; therefore there is general agreement that management of third stage of labour rather than expectant management is recommended.^{6,7,8}

Oxytocin is the drug of choice of postpartum hemorrhage. However, it has a shorter half life compared to carbetocin which has been reported to decrease the need for additional uterotonic and reduce bleeding due to uterine atony in caesarean section.² Carbetocin has been approved for use immediately following an elective caesarean section when local or spinal anesthesia has been administered.⁹

The practical guidelines on PPH of the Society of Obstetricians and Gynaecologists of Canada (SOGC)¹⁰ suggest that the active management of the third stage of labour reduces the risk of PPH compared with the expectant management and should be offered and recommended to all women. Oxytocin (10 IU), administered intramuscularly, is the preferred medication for the prevention of PPH in low risk vaginal and caesarean deliveries. Intravenous infusion of oxytocin (20 to 40 IU in 1000 mL, 150 mL/hour) is an acceptable alternative for the active management. Carbetocin, given 100 µg as an IV bolus over 1 minute, instead of continuous oxytocin infusion, can be administered in elective caesarean section for the prevention of PPH, in the attempt to decrease the need for therapeutic uterotonics.

Carbetocin is a long acting synthetic oxytocin analogue, 1-deamino-1-monocarbo (2-OMethyltyrosine) oxytocin, firstly described in 1987. It has a half life of 40 minutes (around 4-10 times longer than oxytocin) and uterine contractions occur in less than two minutes after intravenous administration of optimal dosage of 100 µg.¹¹

A single dose of carbetocin has been hypothesised to act as a 16 hours intravenous oxytocin infusion regarding the increase in uterine tone and the reduction of the risk

Materials and Methods

Study design, setting and duration

This is a prospective randomized (interventional comparative) case controlled study conducted from January 2014 to December 2014 in the Obstetrics & Gynaecology department of Dhaka National Medical Institute Hospital (DNMIH). Two hundred and forty women undergoing caesarean were enrolled. A written consent was asked from the eligible women on admission.

Study Participants

Inclusion criteria

1. At least 18 years old
2. Term pregnancy (>37 weeks) undergoing caesarean section.
3. Women with risk factors for postpartum haemorrhage like repeat caesarean section, prolonged labour, foetal macrosomia, > gravida 3 and with malpresentation were also included in the study

Exclusion criteria

1. Hypersensitivity to oxytocin and carbetocin
2. Gestational age < 37 weeks
3. Women with placenta praevia or abruptio placenta as they were at a higher risk for PPH.
4. Women undergoing caesarean section with general anaesthesia because carbetocin is licensed for use with regional anaesthesia only
5. Significant disease (heart disease, thyroid disease, preeclampsia, diabetes mellitus, pulmonary disease, liver and renal disease)

Data collection

The study population was divided into two groups. Study group A received a single intravenous injection of 100 microgram carbetocin while study group B received 10IU of oxytocin I/V bolus at delivery of the baby.

The primary outcome of this study was the assessment of the uterine tone and involution within 5 minutes and 2 hours of delivery of placenta. Assessment of the uterine tone between the 2 groups was made by palpation of the uterus by the surgeon whether it was 1) flabby-soft atonic uterus, 2) firm- when gentle pressure depressed the uterus slightly or transiently or 3) well contracted uterus-hard, non-depressible uterus. Likewise, assessment of uterine involution was made with respect to umbilical point 1) below the umbilicus, 2) at the level of the umbilicus and 3) above the umbilicus. Also the

blood loss was checked immediately after caesarean section, defining as haemorrhage a blood loss in excess of 1000 ml or more. Blood loss was estimated by the surgeon in the usual way (visual estimation, number of used swabs and amount of aspirated blood). Vital signs particularly blood pressure recorded pre-operatively, after intervention, 2 hours and 24 hours post-operatively.

The later important outcome of this study was the need for additional uterotonics. The additional uterotonics included additional oxytocin dosage to the drip or giving ergometrine maleate IM/IV or 600 microgram Misoprostol per rectally. Blood transfusion was given to the 2 groups depending on the 24-hour post-operative haemoglobin and clinical assessment of the surgeon.

Statistical analysis

Statistical analysis was carried out by using the statistical Package for Social Sciences version 20.0 for Windows (SPSS Inc. Chicago Illinois, USA). Descriptive statistics included mean and standard deviation for continuous variables. Discrete data were summarized as percentages.

Testing for sample homogeneity at baseline was done using chi-square test and independent t-test. Comparison of outcome was done using independent t-test for continuous data and chi-square for categorical data. All P-values <0.05 were considered significant.

Results

A total of 240 patients were included in the study population of which carbetocin (N=120) and oxytocin (N=120) were used for the prevention of PPH. At baseline there was no significant difference between carbetocin and oxytocin in terms of mean age, parity and gestational weeks. Table-I shows the demographic variables of the study patients. Mean age was found 25.22±4.675 years in Group A and 24.02±4.261 years in Group B. At baseline, there was no significant difference between carbetocin and oxytocin in terms of mean age (mean 25 versus 24, P= .34); gravidity (P=.17); parity (P=.43) and gestational weeks (P=.66). Preoperative systolic and diastolic blood pressure did not statistically differ between the two groups, (P= .32 and .90 respectively).

Tp value reached from independent t-test

Cp value reached from chi square test.

Table-I: Distribution of study population by demographic variable (N=240)

Demographic variables	Group A (N=120)	Group B (N=120)	P value
Age (years)			
≤ 20	26 (21.7%)	33 (27.5%)	.348T
21-30	82 (68.3%)	80 (66.7%)	
>30	12 (10.0%)	07 (05.8%)	
Mean ±SD	25.22±4.675	24.02±4.261	
Gravidity			
1	45 (37.5%)	61 (50.8%)	.176C
2	28 (23.3%)	26 (21.7%)	
3	31 (25.8%)	25 (20.8%)	
4	14 (11.7%)	06 (05.0%)	
5	01 (00.8%)	02 (01.7%)	
6	01 (00.8%)	-	
Mean±SD	2.17±1.125	1.85±1.026	
Parity			
1	52 (43.3%)	73 (60.8%)	.433C
2	40 (33.3%)	28 (23.3%)	
3	24 (20.0%)	17 (14.2%)	
4≥	04 (03.3%)	02 (01.7%)	
Mean±SD	1.83±.863	1.57±.796	
Gestational weeks			
>37-38	70 (58.3%)	72 (60.0%)	.663T
39-40	44 (36.7%)	47 (39.2%)	
41-42	06 (05.0%)	01 (00.8%)	
>42	00 (00.0%)	00 (00.0%)	
Mean±SD	38.43±1.193	38.32±1.168	
Preoperative SBP (Mean±SD)	113.71±9.82	110.50±11.06	.324T
Preoperative DBP Mean±SD	74.04±7.198	72.21±7.498	.903T

Table-II: Distribution of the study patients by indications of caesarean section.(N=240)

Indications	Group A (n= 120)	Group B (n= 120)	P value
Repeat CS	43 (35.8%)	32 (26.7%)	.832C
CPD	17 (14.2%)	12 (10%)	
Foetal distress	13 (10.8%)	18 (15%)	
IUGR	05 (4.2%)	06 (5%)	
Less FM	09 (7.5%)	10 (8.3%)	
Malpresentation	07 (5.8%)	06 (5%)	
Prolonged labour	09 (7.5%)	09 (7.5%)	
Oligohydramnios	06 (5%)	10 (8.3%)	
PROM	05 (4.2%)	08 (6.7%)	
Twin pregnancy	02 (1.7%)	03 (2.5%)	
Big baby	04 (3.3%)	06 (5%)	
Total	120	120	

The primary indications for caesarean section in this study included repeat CS followed by CPD and foetal distress respectively. Among repeat caesarean section two or more CS was found 12 (27.9%) in the carbetocin group and 8 (25%) in the oxytocin group. The indications of

caesarean section did not statistically differ between the two groups (P=.82)

Table-III: Associated risk factors

Risk factors	Group-A (n= 120)	Group-B (n= 120)	P value
Yes	65 (54.17%)	56 (46.67%)	.365 ^C
No	55 (45.83%)	64 (53.33%)	

In this study, it was observed that 54.17% of patients had associated risk factors for PPH in the carbetocin group and 46.67% in the oxytocin group (P=.36) as shown in Table-III.

Table-IV: Distribution of the study patients by need for additional uterotonics and uterine massage

Additional uterotonics	Group-A (n= 120)	Group-B (n= 120)	P value
Yes	10 (8.3%)	62 (51.7%)	0.00 ^C
No	110 (91.7%)	58 (48.3%)	
Uterine Massage			
Yes	19 (15.8%)	64 (53.3%)	0.00 ^C
No	101 (84.2%)	56 (46.7%)	

A statistically lower proportion of women in the carbetocin group required additional uterotonic agents (mostly 20IU oxytocin in 1000 ml I/V fluid and very rarely Misoprostol and methyletergometrine) post-operatively (8.3% versus 62%, P=.00). Therefore, significantly more women required additional uterotonic agents in the oxytocin group. Uterine massage was less required in the same group (15.8% versus 53.3%, P= .00)

Table-V: Observation of the uterine tone in study patients after intervention.

Uterine Tone	Group-A (n= 120)	Group-B (n= 120)	P value
Within 5 minutes			
Flabby	5 (4.2%)	12 (10.0%)	0.00 ^C
Firm	14 (11.7%)	53 (44.2%)	
Well contracted	101 (84.2%)	55 (45.8%)	
2H Post-operative			
Flabby	00 (00%)	00 (00%)	0.002 ^C
Firm	00 (00%)	9 (7.5%)	
Well contracted	120 (100%)	111 (92.5%)	

Table-VI: Observation of Uterine involution (position of uterine fundus) in relation to Umbilicus.

Involution	Group-A (n= 120)	Group-B (n= 120)	P value
Within 5 minutes			
Below umbilicus	101 (84.2%)	56 (46.7%)	.000 ^C
At level of umbilicus	16 (13.3%)	50 (41.6%)	
above umbilicus	3 (2.5%)	14 (11.7%)	
Involution after 2 H			
Below umbilicus	114 (95.0%)	95 (79.2%)	.001 ^C
At level of umbilicus	5 (4.2%)	23 (19.2%)	
Above umbilicus	1 (.8%)	2 (1.7%)	

The effects of the two drugs on uterine tone (Table-V) and uterine involution (Table-VI) are presented. A statistically significant higher proportion of uteri in the carbetocin group were well contracted immediately after the intervention was given (84.2% versus 45.8%, P=.000) and 2hours post-operative (100% versus 92.5% , P=.002).

Statistically significant higher proportions of uteri in the carbetocin group were below the umbilicus immediately after the intervention (84.2% versus 46.7%, P=.000) and 2 hours postoperative (95% versus 79.2%, P=.001).

Table-VII: Distribution of the study patients by estimated blood loss and need for blood transfusion.

	Group-A (n= 120)	Group-B (n= 120)	P value
Estimated Blood loss (ml) Mean (SD)			
< 500 ml	105 (87.5%)	92 (76.7%)	.029 ^C
500-1000 ml	15 (12.5%)	28 (23.3%)	
>1000 ml	00 (00%)	00 (00%)	
Blood transfusion			
Yes	20 (16.7%)	28 (23.3%)	.197 ^C
No	100 (83.3%)	92 (76.7%)	

The estimated blood loss was significantly lower in the carbetocin group. Blood loss <500 ml was 87.5% in group-A and 76.7 % in group-B respectively (P=.029). In oxytocin group 500-1000 ml of blood loss was found in 23.3% of patients .There was no difference in the incidence of primary postpartum haemorrhage (>1000ml) in both groups as shown in Table-VII. The two groups did not significantly differ in terms of blood transfusion requirements. (P=.197).

Table-VIII: Observation of the study patients after intervention- by haemodynamic status.

Blood Pressure	Group-A (n= 120)	Group-B (n= 120)	P value
Immediate -within 5 min.			
Systolic BP Mean±SD	107.38±5.422	102.46±7.189	.036 ^T
Diastolic BP Mean±SD	68.71±7.174	67.83±4.882	.111 ^T
2H Post –operative			
Systolic BP Mean±SD	112.58±4.978	108.04±5.473	.906 ^T
Diastolic BP Mean±SD	71.45±3.495	71.04±3.362	.386 ^T
24H Post–operative			
Systolic BP Mean±SD	114.46±5.531	110.54±5.492	.000 ^T
Diastolic BP Mean±SD	72.96±4.514	74.25±4.964	.000 ^T

Regarding the haemodynamic effects of carbetocin and oxytocin, both drugs have a hypotensive effect. Systolic and diastolic blood pressure was not significantly different immediate post intervention between the two groups and 2 hours post-operative (Table-VIII).The mean systolic BP after 24 hours of delivery was 114.46±5.531 in carbetocin group and 110.54±5.492 in oxytocin group (P=.001), likewise mean diastolic BP was 72.96±4.514 versus 74.25±4.964 (P=.000) in both groups respectively.

Table-IX: Preoperative and postoperative Haemoglobin levels in patients given carbetocin versus oxytocin.

Hb levels (gm/dl)	Group-A (n= 120)	Group-B (n= 120)	P value
Preoperative Mean±SD	10.85±.805	10.68±.790	.832 ^C
24HPost-operative Mean±SD	10.07±.797	9.74±.650	.025 ^T
HbDifference Mean±SD	0.773±.296	0.936±.395	.004 ^T

In both study group haemoglobin levels before and after 24 hours apart from delivery were similar, confirming no significant difference in the level of blood loss (Table-IX), although we found a tangentially lower Hb decrease at 24 hours from delivery in the carbetocin group (0.773 g/dl vs 0.936g/dl, P=.004).

Discussion

This interventional comparative study was carried out with an aim to compare the haemodynamic effects of carbetocin and oxytocin (effects on blood pressure) and to assess the efficacy of carbetocin over oxytocin in terms of intrapartum blood loss and the additional uterotonic needed to prevent PPH in caesarean section specially in high risk cases.

The primary outcome of the study is the evaluation of immediate haemodynamic effects of carbetocin

administration. We know that the haemodynamic effects of an oxytocin bolus consists of systemic vasodilation with hypotension, tachycardia and increase of cardiac output, resulting in dose-dependent hypotension and tachycardia.^{13,14,15}

Larciprete et al. obtained that systolic blood pressure was lower in the oxytocin group at the 5th minute after administration, at uterine closure time and at 12 hours post operatively.¹⁶

The present clinical trial has shown that standard doses of carbetocin prevented significant decreases in haemoglobin post-operatively by having minimal blood loss. Carbetocin also decreased the need for additional uterotonics, uterine massage and the avoidance of blood transfusion. Furthermore, carbetocin was associated with good uterine involution and tone immediate post-delivery when compared to oxytocin.

In this current study, it is observed that 16.7 % of patient needed blood transfusion in Group-A and 23.3 % in Group-B. Need for blood transfusion is higher in oxytocin group, but not statistically significant (p>0.05) between the two groups.

Reyes et al. study found 10.3% need for blood transfusion in oxytocin group but not needed in carbetocin group.¹⁷

In another study, Holleboom et al. administrated blood transfusion in 2.2% of the cases in the carbetocin group and 2.7% in the oxytocin group (p>0.05).¹⁸

In this study it was observed that ten (8.3%) patients need for additional uterotonic in carbetocin group and 62 (51.7%) in oxytocin group. The difference was statistically significant (P<0.05) between the two groups. The study of Su LL showed that among the women who underwent elective CS, carbetocin resulted in a statistically significant reduction in the need for therapeutic uterotonics compared to oxytocin, but there was no difference in the incidence of postpartum hemorrhage.¹⁹ This review revealed that compared to oxytocin, carbetocin was also associated with a reduced need for uterine massage following both caesarean delivery (RR 0.54; 95% CI 0.37 to 0.79; two trials, 739 women) and vaginal delivery (RR 0.70; 95% CI 0.51to 0.94; one trial 160 women). In our study, after carbetocin administration, the need for uterine massage was 19(15.8%) and with oxytocin it was 64(53.3%).The difference was statistically significant (P<0.05) between the two groups.

The position of the fundus relative to the position of the umbilicus is an indicator of the state of uterine involution. One study showed that the uterine involution in primiparous and premature vaginal deliveries starts from lower values of the symphysis pubis-uterine fundus than in the multiparous and in cases of term delivery. The rates of uterine involution in primiparous increases gradually in the earliest day after delivery (from 0.95 to 1.6 cm per day), while in multiparous this increase starts after the 4th day. When caesarean section is performed and in cases of preterm delivery, the rates of uterine involution are delayed and uneven.²⁰

A study by Borruto, et al. reported that the fundus was below the umbilicus in more patients who received carbetocin at 0, 2, 6, and 24 hours on the ward ($P < 0.05$). The latter study concluded that a single 100mcg IV injection of carbetocin was as effective as a continuous 2-h infusion of oxytocin in controlling intraoperative blood loss after placental delivery. Mean blood loss after carbetocin administration was 30ml less than after oxytocin administration ($P = 0.5$). The percentage of patients with blood loss ≤ 500 ml was greater with carbetocin.²¹ We do reach the same conclusion with many other researches.^{9,12}

The clinical advantage of carbetocin over oxytocin has been compared. Clinicians prefer to employ carbetocin because of its longer half-life which is approximately 4-10 times longer than that reported for oxytocin. It combines the safety and tolerability profile of oxytocin with the sustained uterotonic activity of injectable ergot alkaloids.

Furthermore, carbetocin can be administered as a single dose injection either intravenously or intramuscularly rather than an infusion over several hours as in case with oxytocin. Another clinical advantage of carbetocin in the prevention of post-partum bleeding is that it has long duration of action compared with intravenous oxytocin alone and a better cardiovascular side effect profile compared with syntometrine.^{22,23}

Conclusion

This study was undertaken to determine the safety and effectiveness of carbetocin over oxytocin for the prevention of postpartum haemorrhage. Carbetocin is associated with reduction in estimated blood loss, resulting to a significantly minimum drop in haemoglobin level. It also resulted to good uterine tone and involution as early as post delivery of the neonate and prevented the additional administration of uterotonic agents. A statistically significant higher proportion of

uteri in the carbetocin group were well contracted after the delivery of the neonate and 2 hours postoperative. Carbetocin enhanced early postpartum uterine involution. A statistically significant higher proportion of uteri in the carbetocin group were below the umbilicus immediately after the intervention. Therefore, it can be concluded that a single injection of carbetocin appears to be more effective than a continuous infusion of oxytocin to maintain adequate uterine tone, with a similar safety profile and minor antidiuretic effect in the third stage and in the first 24 hours after delivery.

Recommendations

Carbetocin should be considered as a good alternative to the conventional uterotonic agents used in managing the third stage of labour and to prevent post-partum haemorrhage; however its cost prohibits clinicians from prescribing it. Similarly, even if there is a general safety profile for patients with high cardiovascular risk, extreme caution is practiced in its use during hypertension- complicated pregnancies. Further studies on the use of carbetocin in women suspected or diagnosed to have hypertensive disorder or pre-eclampsia is need to see if it could become the drug of choice for this subgroup of pregnant women

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Original Article

Precautionary measures taken by Rural Women of Reproductive age after Sustaining Mental Trauma due to Domestic Violence

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Abstract

Background: Patriarchal social system is ruling the world hence there is a lack of power balance between females and males.

Materials and Methods: A cross-sectional, descriptive study was carried out in different households in rural areas of Keraniganj Upazilla of Dhaka district between March 2016 and June 2016. The study population comprised of married women of reproductive age group (15-49 years) with a sample size of 201. Purposive sampling technique was applied. An interviewer administered structured questionnaire was developed and used after pre-testing to collect primary data. Data was collected by face to face interview of the respondents by the researchers during data collection period. After collection, data were checked and verified. Omissions and errors were corrected properly. Data were analyzed by using Social Package for the Social Sciences (SPSS version 22).

Results: Most (71.70%) women did not take any precautionary measures to stop domestic violence. Only less than half of this category took precautionary measures. There was no statistical association between age and taking precautionary measures by the victims ($P>0.05$) as well as between occupation and taking precautionary measures by the victims ($P>0.05$). A large percentage (59.6%) of the victims tried to discuss the problem with their husbands to stop violence with the second largest category (30.8%) tried to get help from their members of paternal side. Maximum (29.5%) of the categories did not take any precautionary measures because of financial incapability. Lack of social security, personal helplessness, social taboo or stigma as a barrier for not taking any precautionary measures were 24.2% and 23.5%, 22.0% respectively.

Conclusion: Women should be made aware of their rights and facilities available to combat the adverse effects of domestic violence.

Keyword: Precautionary Measures, Sustaining Mental trauma, Domestic violence.

Introduction

Violence against women is materialization of a historic unequal power relation between sexes. It is a form of discrimination and mistreatment of women which results in physical, psychological and socioeconomic trauma to women and therefore to the society. This is as well termed as a global epidemic.¹ Violence against women leads to accidents that causes deaths of women of reproductive age and is one of the most disgraceful expression of human rights violation across the world women in the study areas experience physical and sexual spousal violence in their lifetime ranged from 15% to 71%. In Bangladesh, violence against women is a very common practice. It leads to inequality in distribution of power, deprives women equal opportunity of work and decision making. This culminates in loss of social security, self-esteem, dignity in the family and in the society as a whole.²

Being in a patriarchal society, powerlessness and vulnerability is associated with women's lives where they are dominated by men. In Bangladesh, women face various forms of violence, ranging from physical and mental rape, killings if dowry cannot be afforded, acid throwing to distort face and body, sexual harassment and sexual slavery through trafficking in women.³ Domestic violence is widely prevalent both in urban and rural areas as an everyday matter of women's lives. It is firmly believed women are subordinates and hence they should be dominated by men.⁴ Other member of the family also dominate over them. Only families with resources social norms and traditional values associated with gender roles and supremacy within households and society trigger domestic violence against women in Bangladesh.⁵

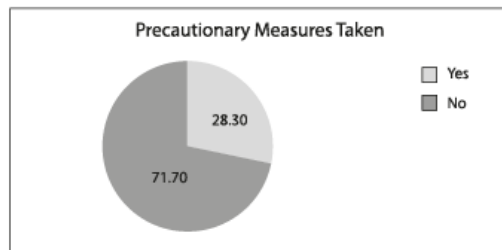
Materials and Methods

A cross-sectional, descriptive study was carried out in different households in rural areas of Keraniganj

Upazilla of Dhaka district between March 2016 and June 2016. The study population comprised of married women of reproductive age group (15-49 years). The sample size was 201; the number of the sample was so because of the situations, ability and the provision of time. Only married women of reproductive age group were taken to make the sample more specific. Women beyond reproductive age, widowed and unmarried women were excluded from the study. Purposive sampling technique was applied. An interviewer administered structured questionnaire was developed and used after pre-testing to collect primary data. Data was collected by face to face interview during data collection period. After collection, data were checked and verified. Omission and errors were corrected properly. Data were analyzed by using Social Package for the Social Sciences (SPSS version 22), an IBM software and was represented in tables and figures.

Results

Figure-1: Taken any precautionary measures (n=184)



The figure showed that most (71.70%) women did not take any precautionary measures to stop domestic violence. Only less than half of this category took precautionary measures.

Table-I: Association of age with precautionary measures taken by victims (n=184)

Age (years)	Taken precautionary measures		p value
	Yes	No	
15 - 24	10 (19.2)	39 (29.5)	0.201
25 - 34	31 (59.6)	56 (42.4)	
35 - 44	10 (19.2)	32 (24.2)	
>=45	1 (1.9)	5 (3.8)	
Total	52 (100.0)	132 (100.0)	

The table showed that there was no statistical association between age and taking precautionary measures by the victims (P>0.05).

Table-II: Association of occupation with precautionary measures taken by victim (n=184)

Taken precautionary measure	Occupation		p value
	Not working	Working	
Yes	40 (25.6)	12 (42.9)	0.062
No	116 (74.4)	16 (57.1)	
Total	156 (100.0)	28 (100.0)	

The table displayed that there was no statistical association between occupation and taking precautionary measures by the victims (P>0.05).

Table-III: Types of precautionary measures taken (n=52)

Types of precautionary measures taken	Percentage	Frequency
Try to discuss the problem with husband to stop violence	31.0	59.6
Try to get help from older-in-laws	14.0	26.9
Try to get help from the members of paternal side of the respondents	16.0	30.8
Try to get help from neighbours	1.0	1.9
Try to get help from village leaders	2.0	3.8
Try to get help from spiritual/religious leaders	1.0	1.9
Tolerate all by herself without protest	4.0	7.7
Respondent protested with all her energy	2.0	3.8
Try to get help from friends	3.0	5.8

*Multiple responses

The table illustrated that most (59.6%) of the victims tried to discuss the problem with their husbands to stop violence. Second largest category (30.8%) tried to get help from their members of paternal side. Other large group (26.9%) tried to get help from elder-in-laws. Rest of the precautionary measures taken was distributed into different categories and the findings were negligible.

Table-IV: Reasons for not taking precautionary measures (n=132)

Reasons of not taking precautionary measures	Percentage	Frequency
Lack of information about the available Govt. and non Govt. social supports for woman	25	18.9
Financial incapability	39	29.5
Lack of social security	32	24.2
Social taboo/stigma	29	22.0
Dreadful pressure from the husband	3	2.3
Personal helplessness	31	23.5
Fear of divorce	13	9.8

***Multiple responses**

The table demonstrated that most (29.5%) of the categories did not take any precautionary measures because of financial incapability. Lack of social security, personal helplessness, social taboo or stigma as a barrier for not taking any precautionary measures were 24.2% and 23.5%, 22.0% respectively. Lack of information about the available Govt. and non-Govt. social supports for woman was 18.9%. Fear of being divorced was 9.8% and dreadful pressure from the husband was 2.3%.

Discussion

This cross-sectional type of descriptive study was carried out in rural areas of Keraniganj Upazilla under district of Dhaka with the objective of assessing the level of precautionary measures taken by the victims of domestic violence after sustaining mental trauma. Limitations of the study were addressing the sensitive issues of life which let the respondents shy to express their opinions openly and willingly, thoughts of damaging self-images and that of families. Small study period forced the sample size to be 201 only. Chance of recall bias is very high in any study based on the self-reporting, illiteracy of the respondents.⁶

Discussing the problem with husband to stop violence based on shared respect for one another and shared responsibility for the relationship outcome and process.⁷ Women are assaulted and mistreated very commonly. Women do not report domestic violence protested with all her energy and tolerate them all by her without any protest out of shame.⁸

It is important to respect the rights of the victims if they try to get help from neighbours or friends. Respect for their religious values and beliefs or cultural norms while trying to get help from spiritual or religious leaders is essential. Similarly village leaders can help the victims of domestic violence. Family and friends even other in-laws can inform the about the services available. It is necessary to make sure that that the victims avail the services and get supports.⁹

Lack of information about the available Govt. and non Govt. social supports for woman, dreadful pressure from the husband, personal helplessness, fear of divorce, lack of social security and social taboo or stigma stop a women from taking any precautionary measure after the domestic violence. Most importantly financial incapability forces women not to take any precautionary measure.^{9,10}

Men have always practiced power over a woman and

have considered socially superior. A man can discipline a woman for improper conduct by physical or mental violence. They can also use these instruments resolving problems and conflicts in a relationship. The taboo that a woman should endure all the tortures to retain the family together.¹¹ A South African study found that 42% of females aged 13–23 years reported experiencing physical dating violence.¹²

Domestic violence against women has been identified as a public health priority. Public health personnel can play a vital role in addressing this issue.¹³ It is expected from assaulted women they should play major roles to take precautionary measures to make peace in the family. The precautionary measures should be curtailing and refuting the abuse. The victims of domestic violence must forget their painful experiences and numb themselves to avoid domestic violence.^{14,15}

Conclusion

Domestic violence is a serious problem lurking throughout the world. It is damaging mental and physical health and reducing working capacity of women. Therefore, it is the main barrier of success of women. Precautionary measures taken by women after domestic violence are futile and poorly help them to overcome the mental trauma. Trying to discuss the problems with husband to stop violence, trying to get help from the members of paternal sides and in-laws of the women are ways of taking precautionary measures against domestic violence. However, findings show that only a few victims have taken measure after incident of domestic violence. Financial dependency of women on the bread earner is one of the fundamental causes of not taking any action against them. Moreover social insecurity, social taboos and many other factors abound them not to take any precautionary measures.^{7,8,9}

Recommendations

Violence against women need integrated, 'ecological framework' can be initial step to reduce the ham of mental trauma.¹⁶ Public health approach defined four steps of a the problem firstly identifying risk, secondly identifying the protective factors, thirdly developing and testing prevention strategies and programs and finally ensuring widespread adoption by disseminating the information.¹⁷ The 'ecological model' of multi-level interconnecting factors can also reduce this burning issue targeted at individual level, such as "SASA!" in Kampala, Uganda has worked at all the ecological levels mainly at the community levels of rural Bangladesh.^{18,19}

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Case Report

Abdominal Migraine in a Eight year old Girl

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Abstract:

Abdominal migraine is a migraine variant, causing chronic idiopathic recurrent abdominal pain in 4-15% of children. It is usually seen between the ages of seven to twelve years and is more common in girls, with prevalence at the age of ten years. International Classification of Headache Disorders- (ICHD-2) defines Abdominal Migraine (AM) as idiopathic disorder characterized by attacks of midline, moderate to severe abdominal pain lasting 1-72 hours with vasomotor symptoms, nausea and vomiting, and included Abdominal migraine among the periodic syndromes of childhood that are precursors for migraine. A 8 years old girl was admitted in Dhaka National Medical College Hospital (DNMCH) with the complains of episodes of severe abdominal pain since five years of her age. The pain was associated with nausea and vomiting which lasted for two to three days. It was dull aching, predominantly around the umbilicus, usually in the evening, intermittent, getting relieved by taking painkillers and antacids or H2 blockers. For this reason she was admitted in different hospitals several times and usually interferes her normal daily activities but with periods of wellness between episodes. Her mother had history of headache since her childhood. On examination, she was pale and mildly dehydrated investigations were done such as CBC with film, Urine R/E, Serum electrolytes, LFT, RFT, Stool R/E, USG of Whole abdomen to exclude any pathology but nothing significant was found. She was treated with H2 blocker, antispasmodic, antiemetic and IV fluids and symptom subsided. Little evidence exists the use of drugs to manage AM. For acute treatment of attacks, there is no data regarding ibuprofen or acetaminophen, the 2 agent for which controlled data exist for migraine without aura in young children. There are likewise no data regarding the use of tryptans for AM. Preventive medications that have demonstrated efficacy in clinical trials include pizotifen, propranolol, and cyproheptadine for prevention of recurrent attacks

Introduction

Children with chronic abdominal pain have a high utilization of resources. As is observed with other chronic pain syndromes, abdominal pain leads to significant disability, including interference with family, school, and social activities. Accurate diagnosis as to the etiology of the pain is integral to providing and to the patient and family, as well as maximizing targeted therapeutic options. Chronic, recurrent abdominal pain occurs in 9-15% of all children and adolescents.

The American Academy of Pediatrics Subcommittee on Chronic Abdominal Pain and North Society of Pediatric Gastroenterology, Hepatology and Nutrition "functional abdominal pain" as the most common cause of chronic, idiopathic. Abdominal pain in childhood, after exclusion of anatomic, infectious, inflammatory, or other metabolic causes, and categorize "functional abdominal pain" as 1, or a combination of, 4 clinical entities; dyspepsia, irritable bowel syndrome, abdominal migraine (AM),

and/or functional abdominal pain syndrome. First described nearly a century ago, AM occur in 1% to 4% of children and has received considerable attention as one of many potential etiologies of recurrent abdominal pain in children.^{2,3} In 2004, the International Headache Society (ICHD-2) included AM among its "periodic syndrome of childhood that are precursors for migraine" (Table-1).^{4,5} In 2006, Rome III Gastroenterology established separate, but similar, criteria for AM, Confirming AM as a well-defined cause of recurrent abdominal pain (Table 2).⁶

Table-1. International Classification of Headache Disorders 2004 Criteria⁴

Diagnostic for abdominal migraine include the following:

- A. At least 5 attack fulfilling criteria B to D.
- B. Attacks of abdominal pain lasting 1-72 hours.
- C. Abdominal pain has all of the Following characteristics:

1. Midline location, periumbilical or poorly localized.
2. Dull or "just sore" quality.
3. Moderate or severe intensity.

D. During abdominal pain, at least 2 of the following:

1. Anorexia.
2. Nausea.
3. Vomiting.
4. Pallor.

E. Not attributed to another disorder. History and physical Examination do not show signs of gastrointestinal or renal disease or such disease has been ruled out by Investigations,

Table-2. Rome III Functional Gastrointestinal Disorders 2006 Criteria

Diagnostic criteria for abdominal migraine include all of the following, with 2 or more episodes in the preceding 12 months:

- A. Paroxysmal episode of intense, acute periumbilical pain that lasts 1 hours or more.
- B. Intervening periods of usual health lasting weeks to months.
- C. The pain interferes with normal activities.
- D. The Pain is associated with 2 or more the following:
 - a. Anorexia
 - b. Nausea.
 - c. Vomiting.
 - d. Headache.
 - e. Photophobia.
 - f. Pallor.
- E. No evidence of an inflammatory, anatomic, metabolic, or neoplastic process.

International Classification of Headache. Disorders-2nd Version define, AM as an idiopathic disorder characterized by attacks of midline, moderate to severe abdominal pain lasting 1-72 hours with vasomotor symptoms, nausea, and vomiting.

A key feature of AM is the complete resolution of symptoms between attacks. The pain is of moderate to severe intensity. In 2001, Dignan et al introduced a comprehensive guideline which included valuable.

Exclusionary criteria for patients with the following features: mild symptoms not interfering with daily activities, burning pain, non-midline abdominal pain, symptoms consistent with food allergy or other gastrointestinal disease, attacks less than 1 hours, or persistence of symptoms between attacks.⁷

Abdominal migraine is more common in those with a

family history of migraine headaches and emerges between the ages of 3 and 10 Years. While AMs rarely persist into adulthood, evidence suggests an evolution of AM into migraine headaches, ergo a "precursor for migraine" ⁷ In a 10 Year prospective study of nearly 150 children referred for recurrent abdominal pain, Bentley et al identified 70 children whose symptoms were consistent with AM.⁹ A equal number of males and females were affected by this condition, and 90% had a positive family history of migraines in first-degree relative. Consistent with reports, diagnosis was made between the ages of 6 and 10 years.⁸⁻¹⁰

Case Report

A 8 years old girl was admitted in Dhaka National Medical College Hospital with the complains of episodes of severe abdominal pain since five years of her age. The pain was with nausea and vomiting which lasted for two to three days. It was dull aching, around the umbilicus, usually in the evening, intermittent, getting relieved by taking painkiller and antacids or H2 blockers. For this reason she was admitted in different hospitals several times and usually interferes her normal daily activities but with periods of wellness between episodes. There was no history of stressful condition prior to this attack or any H/O fasting and skipping meals, changes in sleep patterns, exposure to bright lights or association with food. Her mother had history of recurrent headache since her childhood.

On examination she was pale and mildly dehydrated. She was lying on her bed in foetal position holding her both hands around umbilicus. Her temperature recorded at that time was 98°F, Pulse was 96b/min, R/R-24 br/min, B.P.-90/60mmHg. Her anthropometry were within normal limits. Regarding systemic examination Abdomen was soft with tenderness around the umbilicus and there was no Organomegaly. Other system revealed no abnormality.

Laboratory investigations such as CBC with film, Urine R/E, Serum electrolytes, LFT, RFT, Stool R/E, USG of Whole abdomen revealed nothing significant.

She was treated with H2 blocker, antispasmodic, antiemetic and IV fluids and symptom subsided.

Discussion

Abdominal migraine is a subtype of recurrent abdominal pain that is characterized by discrete episodes of pain with clear-cut symptom-free intervals.^{11,12} The condition is more commonly seen in children, with a peak prevalence at age 10 years.¹¹ The term "abdominal migraine" was

first in 1921 to describe attacks of abdominal pain in the absence of headache.² Criteria proposed by Dignan et al. include dull, poorly localized abdominal pain lasting at least 1 hour, severe enough to interfere with normal daily activities and with associated symptoms of nausea, vomiting, anorexia, and/or pallor in contrast to other chronic abdominal pain, an explanation for recurrent abdominal pain is seldom found.¹¹ It is estimated that only 5%-10% of children with recurrent abdominal pain have an underlying organic process that contributes to their pain.¹² Over the years, there has been increasing support for the view that otherwise unexplained recurrent abdominal pain is psychological in origin. It is known that both the gut and the nervous system are derived from the same embryologic tissues and that the enteric nervous system and CNS have direct effects on each other.¹²

One proposed mechanism is that stress first contributes to increased arousal in the CNS, releasing neuropeptides and neurotransmitters, which, in turn, leads to dysregulation of the gastrointestinal system.¹² Although many individuals may experience some type of abdominal distress under stressful situations, those with recurrent abdominal pain may react to the stress or may have maladaptive coping mechanisms.¹³

In this case there was a positive family history and pain was dull, severe around umbilicus associated with vomiting and nausea persisted for 2-3days, severe enough to hamper daily activities and symptom free during repeated episodes and subsided by taking analgesics, antispasmodics and H2 blockers which fulfills both Rome III and ICHD criteria of Abdominal migraine. There was no association with any stressful condition, food, anatomical inflammatory, metabolic or neoplastic condition in this case.

Preventive medications that have demonstrated efficacy in clinical trials include pizotifen, propranolol and cyproheptadine for prevention of recurrent attacks. Some authors suggest IV Valproic acid which in turn inhibits GABA release and thereby relieve symptoms.

Conclusion

Among children with chronic, idiopathic, recurrent abdominal pain, Abdominal Migraine about 4-15% Given the Spectrum of treatment modalities now available for pediatric migraine, increased awareness of cardinal features of AM by pediatricians and pediatric gastroenterologists may result in improved diagnostic accuracy and early institution of both acute and preventative migraine-specific treatments.

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Case Report

Axillary Cystic Hygroma in a Three Month old infant

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Introduction

Cystic hygroma (CH) is a congenital lymphatic malformation occurring in different parts of body, typically in the region of the neck, axilla, abdominal wall, mediastinal, inguinal and retroperitoneal areas.^{1,2} Cystic hygroma may result from a complete or incomplete obstruction in the lymphatics that prevents communication with the venous system and causes cysts.³ About 75% of the cystic hygroma occur in the neck, With a predilection for the left side, mainly in the posterior triangle, 10 -20% are located in the axilla and less than 10% are located in the extremities, trunk, abdomen, genitalia, etc.^{4,5} Occasionally cystic hygroma is inherited as an autosomal recessive disorder. Most common cause is idiopathic. Some of the other causes are maternal viral infection such as parvovirus and maternal substance abuse like alcohol.⁶

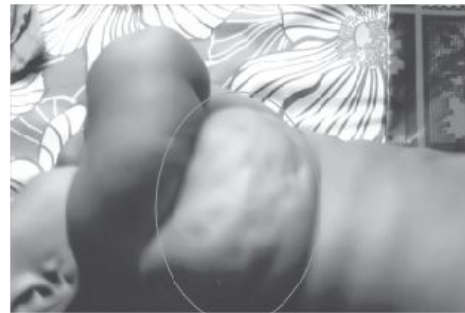
This case report is to present the foetal axillary cystic hygroma diagnosed just after delivery in a 30-yr-old woman.

Case Report

A 3 month old male baby, first issue of a non-consanguineous parents coming from a middle class family of Dhaka got admitted to hospital with the complaints of fever for last 5 days, and a mass in the axillary region of right side since birth. The mother was under regular antenatal checkup. Her antenatal period was uneventful. The baby was delivered at term in a hospital by lower uterine cesarean section (L.U.C.S).

The baby was born with a mass in the axillary region but had no other problems. He was on exclusive breast feeding and was immunized as per EPI schedule. On clinical examination, a large multi-loculated soft cystic, painless mass in the right axilla that measured 12 x 15 cm sized, and extended to the right anterior chest wall was found. Parents noticed that initially the mass was small but gradually increased to attain the present size. No other anomalies were noted. Ultrasound examination performed in our hospital, revealed multi-septated cystic mass in right axilla that measured 10 x 14 cm and extended to the right chest wall but no internal extension of lesion was seen at present which was suggestive of cystic hygroma. Patient was normal karyotype (46, xy).

The chest radiograph did not show any abnormality. Since this patient was febrile, he was diagnosed as infected cystic hygroma and was treated conservatively with antibiotics, and antipyretics. Aspiration of cystic hygroma was done, both for diagnosis and treatment at about 3 months of age. Also Sclerotherapy with intra-lesional Bleomycin has been tried at 4 month of age. Since this patient did not improve with these management, it was decided to go for surgical excision.



Discussion

Hygroma in Greek means water containing Tumour. Cystic hygroma is a benign congenital malformation of the lymphatic system that has its genesis in the lack of development of communication between the lymphatic and venous systems. 80% of cystic hygromas occur in the neck, 10-20% are located in the axilla, and less than 10%

are located in the extremities, trunk, abdomen, genitalia, etc.⁷ Cystic hygroma may result from a complete or incomplete obstruction in the lymphatic that prevents communication with the venous system and causes cysts. The hygroma describes an endothelial lined mass consisting of small to medium sized lumina containing lymphatic fluid, together with a mixture of loose collagen tissue, adipose tissue and occasionally, vascular tissue. The cysts may be unilocular but more often the structure contains multiple cysts infiltrating the surrounding structures and distorting the local anatomy. The septated cystic hygroma may result from a complete obstruction in the lymphatic sacs that prevents communication with the venous system and causes lymph fluid to accumulate and dissect into tissues, thus creating large multilocular cysts. Nonseptated cystic hygroma may result from a temporary accumulation of lymph fluid due to incomplete obstructions of lymphatic drainage. Axillary cystic hygroma was rarely reported and detected often in mid-gestation period. Foetal cystic hygroma has been associated with foetal aneuploidy, hydrops foetalis, structural malformations and intrauterine foetal death. It is reported to occur between 1 in 6000 and 1 in 16,000 live births but it is estimated to be much more than this proportion as we take into account the abortions.⁸

Two distinct categories of foetal cystic hygroma have been described: Those diagnosed in later pregnancy, which tend to be isolated lymphangiomas, and those diagnosed in early pregnancy, which are commonly associated with other malformations. Retrospective case series describing the prenatal diagnosis of this condition suggest that those diagnosed early in pregnancy are associated with a poor prognosis. The cystic hygroma in later gestation, which likely represents a lymphangioma that is not associated with either aneuploidy or other foetal malformations, and can be expected to yield good prognosis. Cystic hygroma incidence is equal in both sexes.⁹ The frequency of a chromosomal abnormality associated with cystic hygroma may be as high as 78% Turner syndrome being the most common. Prognosis for cystic hygroma is grim if the Karyotype is abnormal.¹⁰ The usual presentation of cystic hygroma apparent at birth is a painless mass with worries and queries of the parents about the lesion. The other modes of presentations are related to the complication or effects of cystic hygroma, such as respiratory distress, feeding difficulty, fever, sudden increase in the size and infection in the lesion. On clinical examinations, these lesion appear soft, compressible, non tender, transluminant and without any bruit.¹¹

Foetal axillary cystic hygromas have been reported rarely and usually as a sonographic finding in mid-gestation. Axillo-thoracic cystic hygroma may be diagnosed during routine antenatal ultrasound follow-up. On an ultrasonological scan, it appears as a hypo-echogenic multilocular cystic mass with septa of variable thickness. MRI (magnetic resonance imaging) is important in determining the characteristics of the tissue and tumour extent. Considering its association with several chromosomal anomalies, determination of foetal Karyotype may be undertaken for providing accurate diagnosis and genetic counseling. Repeat sonological evaluation may be necessary antenatally for the evaluation of the tumour growth. As cystic hygromas are known to lead to obstructed labour, and neonatal asphyxia, an elective caesarean section should be considered as the preferred mode of delivery.⁷ Differential diagnosis of Axillothoracic cystic hygroma, simple cyst, hemangiomas, branchial cleft cysts, hemangio-lymphangiomas, lymphocele, teratomas, ectopia cortis, Klippel-Trauray syndrome should be considered.⁸ In this case report ante-natal ultrasonography was done after mid-gestation but foetal axillary cystic hygroma could not be detected and it was diagnosed after birth.

The most preferred modality of treating cystic hygroma remains complete surgical excision; however, many recent case reports have increasingly documented remarkable results for management of such lesions with sclerosant agents. Sclerotherapy with intra-lesional bleomycin as a primary treatment modality, for cystic hygroma, has been tried. Various case reports and original studies have documented good response to the therapy. The other agent used as sclerosant is OK 432, has more satisfactory results and less complication as compared to bleomycin. The other treatment modalities that have been employed with variable results include simple drainage, aspirations, radiation, laser excision, radio-frequency ablation and cauterization, which are contraoversial.¹¹

Conclusion

The incidence of diagnosis of foetal cystic hygroma has increased due to routine antenatal ultrasound screening. Antenatal diagnosis of foetal cystic hygroma helps in planning a better anticipatory care (elective caesarean section, conducting delivery in a well-equipped center and undertaking investigations for the diagnosis of other associated congenital anomalies and chromosomal abnormalities). Cystic hygroma is a manageable lesion in the paediatric population. Suitable treatment should be

opted, based on case to case variation. Preoperative imaging for diagnosis and searching for intrathoracic extension is essential. Optimum treatment can be given either by surgery or sclerotherapy or combined use of both. Recently invented treatment modalities such as laser and radiofrequency can also be used in selected patients. Surgical excision is the treatment of choice.

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