

Early Postpartum Complications and Maternal Mortality: An Experience of Mymensingh Medical College Hospital, Bangladesh

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Abstract

A cross-sectional study was conducted in the Department of Obstetrics and Gynaecology, Mymensingh Medical College Hospital (MMCH), Bangladesh, between April and September of 2010, to observe and evaluate common complications in early puerperium. A total of 384 patients were selected for the study, who were admitted with immediate postpartum complications, or who experienced complications after delivery at MMCH. Most of the patients 202(52.6%) belongs to 21-30 years age group followed by 118(30.73%) in >30 years and 64(16.67%) in ≤20 years group. Low parity accounts for most patients, 217(56.5%), while grand multiparity was documented in 42(10.9%) patients. 211(54.95%) patients had no history of antenatal checkup. 179(46.62%) patients had home delivery, while the rest had institutional delivery. 239(62.24%) patients had normal vaginal delivery, while 129(33.6%) had Caesarean operation, 7(1.82%) needed vacuum extraction and 2.34% had forceps' delivery. 146(38.02%) had their delivery without attending doctor, nurse/midwife or skilled birth attendant. Most of the patients, 281(73.18%), had their symptoms and signs within 24 hours of delivery, while 41(10.67%) and 62(16.15%) had within 48 hours and within 7 days respectively. Primary postpartum haemorrhage (PPH) was the leading complication found in 114(29.68%) patients, while the other major complications were puerperal sepsis 53(13.8%), urinary tract infection 40(10.42%), postpartum eclampsia 38(9.9%). 329(85.68%) patients were discharged without any morbidity; however, maternal mortality was observed in 18(4.68%) cases. Puerperal sepsis 5(28%), postpartum eclampsia 4(22%) and pulmonary embolism 3(17%) were the leading causes of mortality. Skilled obstetric care, active management of third stage of labour, prevention and treatment of anaemia, and maintenance of strict asepsis during delivery can prevent a considerable incidence of those complications.

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Introduction

The postpartum period or puerperium is the period that starts immediately after childbirth, and extends up to forty-two days, while the early postpartum or early puerperium includes the first seven days within this period.^{1,2} Postpartum period is crucial for every mother, as she has to go through the physiological process of uterine involution and at the same time adapting to her new role in the family.² However, many postpartum complications are evident in literature from various disciplines. For example, among the important obstetric morbidities are postpartum haemorrhage, pregnancy related hypertension, pulmonary embolism, and puerperal sepsis.

Common surgical complications include wound breakdown, breast abscess and urinary and fecal incontinence. Besides, certain medical conditions also remain associated such as anaemia, headache, backache, constipation and

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sexual problems. Puerperal psychosis is also reported. From public health and social science aspects, health seeking behaviour and access to postpartum care have become research interests to many.³⁻¹³

Complications occurring early in the puerperium are important to the future reproductive performance of an individual.^{9,12,14} There is an increased risk of morbidities and mortalities due to delay in identifications of the problems and lack of adequate and appropriate treatment at the medical facility especially in the rural settings.^{4,6,7,15} Hence, evaluation and prompt diagnosis of the common puerperal complications along with the identification of risk factors in the early puerperium play important roles in planning of preventive measures as well as facilitate life saving measures in the health facilities of the country.^{4,16} Overall, those data and taken measures help to initiate and maintain a better obstetric care and reduce unacceptably high maternal morbidities and mortalities. Under the circumstances, we proposed this study to evaluate the incidence of early postpartum complications and maternal morbidities and mortalities in a tertiary level hospital in our country.

Methods

This cross-sectional, observational study was conducted in the Department of Obstetrics & Gynaecology, Mymensingh Medical College Hospital (MMCH), Bangladesh, which is a tertiary level health facility in the country. The study was done between April and September of 2010. A total of 384 patients were selected for the study, who were admitted with immediate postpartum complications, or who experienced complications after delivery at MMCH and the complications

occurred in early puerperium.

Inclusion criteria:

1. Patients having history of delivery through vaginal or instrumental delivery or by Caesarian section operation within last 7 days;
2. Patients who were admitted with immediate postpartum complications;
3. Patients who experienced complications after delivery at home, private clinics, or govt. hospitals (primary, secondary or tertiary levels).

Exclusion criteria:

1. Postpartum complications associated with other medical disorders like diabetes mellitus, heart disease, thyroid disease;
2. Patients declined to participate in the study.

Data collection was done after taking written informed consent. Initial evaluation of all patients done by history taking and clinical examination was recorded in the preformed data collection sheet. Demographic profile such as age, parity, place and mode of delivery, antenatal checkup, initiation of symptoms and signs were collected through a patient data sheet and prospectively observed. Data on different types of early postpartum complications as well as risk factors of common postpartum complications were identified. Besides, maternal outcomes were observed. Data were compiled, presented through tables expressed in frequencies with percentage and pie charts having percentages. This study was approved by the Ethical Review Committee of Mymensingh Medical College, Mymensingh, Bangladesh.

Results

Table-I shows that most of the patients 202(52.6%) belongs to 21-30 years age group followed by 118(30.73%) in >30 years and 64(16.67%) in \leq 20 years group. Low parity accounts for most patients 217(56.5%), while grand multiparity was documented in 42(10.9%) patients. Only 52(13.54%) patients had regular antenatal checkup, while majority 211(54.95%) had no history of antenatal checkup. 179(46.62%) patients had home delivery, while the rest had institutional delivery. 239(62.24%) patients had normal vaginal delivery, while 129(33.6%) had Caesarean section operation, 7(1.82%) needed vacuum extraction and 2.34% had forceps' delivery (Table-I). 146(38.02%) had their delivery without attending doctor, nurse/midwife or skilled birth attendant. Most of the patients, 281(73.18%), had their symptoms and signs within 24 hours of delivery, while 41(10.67%) and 62(16.15%) had within 48 hours and within 7 days respectively (Table-I). Primary postpartum haemorrhage (PPH) was the leading complication found in 114(29.68%) patients, while the other major complications were puerperal sepsis 53(13.8%), urinary tract infection 40(10.42%), postpartum eclampsia 38(9.9%) (Table-II). The most common risk factor identified for PPH was retained placenta 39(34.21%) and prolonged labour 24(21.05%) (Table-III). Among the risk factors of puerperal sepsis, premature rupture of membranes 17(32.06%), prolonged labour 10(18.87%) and anaemia 9(16.98%) were the most common (Table-IV). 329(85.68%) patients were discharged without any morbidity, and 37(9.64%) with some morbidities. However, maternal mortality was observed in 18(4.68%) cases (Table-V). Among the causes of death puerperal sepsis was leading 5(28%), followed by postpartum eclampsia 4(22%) and pulmonary embolism 3(17%) (Fig. 1).

Table-I: Demographic characteristics of the patients (n=384)

Variables	Number of Patients	Percentage
Age group		
\leq 20 years	64	16.67
21-30 years	202	52.6
> 30 years	118	30.73
Parity		
1-2	217	56.5
3-5	125	32.6
> 5	42	10.9
Antenatal check up		
Regular	52	13.54
Irregular	121	31.51
No check up	211	54.95
Place of delivery		
Home	179	46.62
Upazila Health Complex	75	19.53
District Hospital	59	15.36
Private Clinic	17	4.43
MMCH	43	11.2
Others e.g., BRAC	11	2.86
Mode of delivery		
Vaginal	239	62.24
Caesarean Section	129	33.6
Vacuum extraction	7	1.82
Forceps' delivery	9	2.34
Attendant during delivery		
Doctor	58	15.11
Nurse/midwife	73	19.01
Skilled Birth Attendant	107	27.86
Others	146	38.02
Time interval between complication and delivery		
Within 24 hours	281	73.18
Within 48 hours	41	10.67
Within 7 days	62	16.15

Table-II: Distribution of the patients of postpartum complications (n=384)

Complications	Number of Patients	Percentage
Primary PPH	114	29.68
Secondary PPH	31	8.07
Retained Placenta	25	6.51
Postpartum Eclampsia	38	9.9
Puerperal Sepsis	53	13.8
Cervical Tear	12	3.13
Perineal Tear	15	3.91
Urinary Tract Infection	40	10.42
Vulval Haematoma	14	3.65
Wound Infection	10	2.6
Pulmonary Embolism	1	0.26
Puerperal Psychosis	4	1.04
Acute Inversion of Uterus	1	0.26
Obstetric Shock	26	6.77
Total	384	100

Risk factors	Number of patients	Percentage
Retained bits of placenta	39	34.21
Prolonged Labour	24	21.05
Antepartum Haemorrhage	12	10.53
Anaemia	06	5.26
Multiple Pregnancy	05	4.39
Grand multiparity	12	10.53
Pre-eclampsia/eclampsia	06	5.26
Polyhydramnios	03	2.63
Previous PPH	02	1.75
Operative Vaginal Delivery	01	0.88
Vaginal birth after Caesarean section (VBAC)	04	3.51
Total	114	100

Table-III: Risk factors of primary postpartum haemorrhage (n=114)

Table-IV: Risk factors of puerperal sepsis (n=53)

Risk factors	Number of patients	Percentage
Premature rupture of membranes	17	32.09
Prolonged labour	10	18.87
Frequent vaginal examination during labour	08	15.09
Chorioamnionitis	05	9.43
Retained bits of placenta	04	7.54
Anaemia	09	16.98
Total	53	100

Table-V: Outcomes of the patients (n=384)

Outcome	Number of patients	Percentage
Discharged without any morbidity	329	85.68
Discharged with continuing morbidity	37	9.64
Mortality	18	4.68
Total	384	100

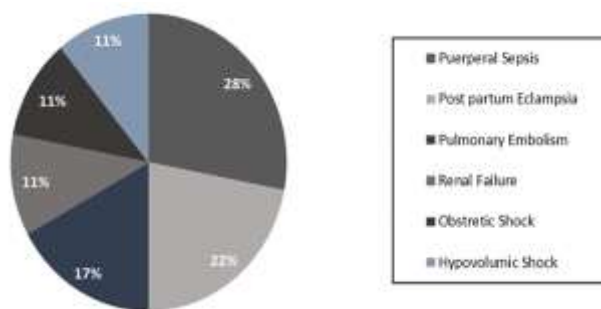


Fig. 1: Causes of maternal mortality (n=18)

Discussion

In the present study, most of the patients 202(52.6%) belongs to 21-30 years age group followed by 118(30.73%) in >30 years and 64(16.67%) in ≤ 20 years group. Low parity accounts for most patients 217(56.5%), while grand multiparity was documented 42(10.9%) patients. Similar findings were reported in some other studies done in the similar category of tertiary level teaching hospitals around the country.^{14,17-21} The most common early puerperal complication in this study was primary postpartum haemorrhage (29.68%). This is the most important puerperal complication that leads to a huge number of maternal deaths across the globe.^{9-11,13} Hence, measures must be taken during delivery to ensure complete delivery of placenta and its membranes.² Secondary postpartum hemorrhage was also not an uncommon complication, as reported in 8.07% cases. However, most of those patients were managed conservatively after thorough clinical evaluation. Similar observations were reported by several studies.^{9,17-19}

Factors related to postpartum hemorrhage were retained bits of placenta, prolonged labour, antepartum haemorrhage (APH), anaemia, multiple pregnancies, grand multiparity, previous history of PPH and more. Those were also reported by the studies done in our country as well as abroad.^{8-11,13,17-21}

Antenatal check-up may anticipate risks for postpartum complications, and it is a must for every patient. It helps in supporting positive health of the mother and the fetus and reduces both maternal and fetal morbidities and mortalities. In our study, 54.95% had no history of antenatal checkup. Similar findings were reported in some previous studies in the country.^{4,14,15,18}

In Bangladesh, 16,000 women die due to delivery related causes each year, and the lifetime risk of maternal death is 1 in 64. Almost all women give birth at home without a skilled provider (87%).¹⁸ In this context, there are a variety of social and economic barriers that inhibit care seeking outside the home and increase the risk for obstetric complications.⁴ Similar findings were reported by other researchers from Bangladesh.^{4,6,7,17-21} Our results are also in congruence with those studies, as we found that 46.62% had home delivery and 38.02% had their delivery without attending doctor, nurse/midwife or skilled birth attendant.

In the present study, 85.68% of the patients were discharged without any further morbidity. However, maternal mortality was observed in 4.68% patients. A range of maternal mortalities have been reported for decades in our country due to postpartum complications.^{6,7,14,15,17-21} Although the 'safe motherhood' initiative has been given priority in recent years, maternal morbidity and mortality remains a major public health concern in most developing countries and Bangladesh is not an exception to that.^{16,18}

Conclusion

The postpartum period covers a critical transitional time for a woman, her newborn and her family, on a physiological, emotional and social level. Our data suggest that primary postpartum haemorrhage (PPH), puerperal sepsis, urinary tract infection (UTI) and postpartum eclampsia are the most common early puerperal complications in our series. A significant percentage of maternal mortality is also evident, even after being treated in a tertiary level facility. Skilled obstetric care, active management of third stage of labour, prevention and treatment of anaemia, and

maintenance of strict asepsis during delivery can prevent a considerable incidence of those complications as well as subsequent mortality.

References

1. Konar H. *Normal Puerperium*. In: *DC Dutta's Textbook of Obstetrics: Including Perinatology and Contraception*. 8th ed. New Delhi: Jaypee Brothers; 2016.
2. Romano M, Cacciatore A, Giordano R, La Rosa B. *Postpartum period: three distinct but continuous phases*. *J Prenat Med*. 2010;4(2):22-25.
3. Dare FO, Bako AU, Ezechi OC. *Puerperal sepsis: a preventable post-partum complication*. *Trop Doct*. 1998;28(2):92-5.
4. Afsana K, Rashid SF. *The challenges of meeting rural Bangladeshi women's needs in delivery care*. *Reprod Health Matters*. 2001;9(18):79-89.
5. Paul L, Chellan R. *Post-delivery complications and treatment-seeking behaviour: scenario among women in India*. *Social Change*. 2007;37(1):31-49.
6. Khan AR, Jahan FA, Begum SF. *Maternal mortality in rural Bangladesh: the Jamalpur District*. *Stud Fam Plann*. 1986;17(1):7-12.
7. Alauddin M. *Maternal mortality in rural Bangladesh: the Tangail District*. *Stud Fam Plann*. 1986;17(1):13-21.
8. Zainur RZ, Loh KY. "Postpartum morbidity – what we can do". *Med J Malaysia*. 2006;61(5):651-6.
9. Simoes E, Kunz S, Bosing-Schwenkglens M, Schmahl FW. *Association between method of delivery, puerperal complication rate and po*
10. Magann EF, Evans S, Hutchinson M, Collins R, Howard BC, Morrison JC. *Postpartum hemorrhage after vaginal birth: an analysis of risk factors*. *South Med J*. 2005;98(4):419-22.
11. Magann EF, Evans S, Hutchinson M, Collins R, Lanneau G, Morrison JC. *Postpartum hemorrhage after cesarean delivery: an analysis of risk factors*. *South Med J*. 2005;98(7):681-5.
12. Brubaker L. *Postpartum urinary incontinence*. *BMJ*. 2002;324(7348):1227-8.

13. Kaul V, Bagga R, Jain V, Gopalan S. The impact of primary postpartum hemorrhage in "near-miss" morbidity and mortality in a tertiary care hospital in North India. *Indian J Med Sci.* 2006;60(6):233-40.
14. Akhter T, Ghani T, Paul SK, Noorjahan, Begum A, Rahman T, et al. Early puerperal complications – a prospective clinical study on Caesarean Deliveries. *J Dhaka Med Coll.* 2018;27(1):68-71.
15. Kalim N, Anwar I, Khan J, Blum LS, Moran AC, Botlero R, et al. Postpartum haemorrhage and eclampsia: differences in knowledge and care-seeking behaviour in two districts of Bangladesh. *J Health Popul Nutr.* 2009;27(2):156-69.
16. World Health Organization (WHO). *Postpartum care of the mother and newborn: A practical guide.* Geneva: WHO; 1998.
17. Bulbul S, Susan ZS, Jahan R, Nayeem A, Rahman F, Zakaria R et al. Secondary postpartum hemorrhage following Cesarean section. *J Shaheed Suhrawardy Med Coll.* 2017;9(1):23-5.
18. Khanam M, Akanada MAS. *Determinants of delivery complications in rural Bangladesh.* *J Applied Sci Res.* 2007;3(11):1320-6.
19. Raushan A. *Early postpartum period – A neglected tragedy.* [FCPS Dissertation]. Bangabandhu Sheikh Mujib Medical University (BSMMU), Dhaka, Bangladesh. 2001. p.65-71.
20. Begum S. *Clinical study of prolonged labour and its outcome in MMCH* [FCPS Dissertation]. Mymensingh Medical College, Mymensingh, Bangladesh. 1997, p.87.
21. Shahnaz S. *Clinical study of immediate postpartum complications in puerperal women in DMCH.* [FCPS Dissertation]. Dhaka Medical College, Dhaka, Bangladesh. 2003, p.50.