

Maternal Mortality: Sharing Experience from Nobel Medical College Teaching Hospital

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Aims: To analyse causes of maternal deaths and to identify avoidable factors.

Methods: This was a retrospective analysis of maternal deaths, during a period of one year from 15th April, 2011-15th April, 2012, at Nobel Medical College Teaching Hospital, Biratnagar in the Eastern Region of Nepal case files and hospital records being the data sources. All the maternal deaths were recorded.

Results: In one year study period, out of a total of 2,754 deliveries, there were 8 maternal deaths giving maternal mortality ratio of 310/100,000 live births. Three of them resulted from an induced abortion mishap and five of them were obstetric deaths. Four of the direct obstetric deaths resulted from complications of pregnancy induced hypertension (PIH) of which one case died due to traumatic post partum hemorrhage postpartum hemorrhage (PPH) as a result of torrential bleeding from extensive vaginal wall tear. One indirect obstetric death occurred in a case of twin pregnancy with severe anemia and congestive cardiac failure.

Conclusions: Provision of safe abortion services is still not available to many women despite of legalization of abortion in Nepal. Quality antenatal care services would be helpful in avoiding maternal mortality in many situations by detecting and managing medical complications of pregnancy.

Keywords: Maternal mortality, pregnancy induced hypertension, post partum hemorrhage.

INTRODUCTION

Maternal mortality in Nepal has drastically come down to 229 per hundred thousand live births. But in the tertiary care teaching hospitals, the figure still remains high due to significant number of complicated obstetrical cases referred from various peripheral regions of the country. Obstetric hemorrhage, pregnancy induced hypertension, obstructed labor, abortion complications, sepsis are the major causes of maternal death worldwide.¹

Safe Motherhood Program in Nepal has addressed the provision of antenatal, intrapartum and postnatal health care. The aim of this study is to analyse causes of maternal deaths and to identify avoidable factors.

METHODS

This was a retrospective study of maternal mortality in the Department of Obstetrics and Gynaecology, Nobel Medical College Teaching Hospital, Biratnagar in the Eastern Region of Nepal. Hospital case records (admission register, case file, confinement book, death certificate) were reviewed and relevant data were entered in a structured maternal mortality proforma. Women's age, parity, education, socioeconomic status, antenatal care attendance and causes of death were analysed.

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RESULTS

During one year study period from April 15th 2011- April 15th 2012, there were eight maternal deaths in a total of 2754 deliveries. Maternal mortality ratio was 310/100,000 live births. Among the eight maternal deaths, seven were referred from other health facilities and one directly came from home. Four of them were illiterate and above all, they were essentially less parity young women (Table1). Of the eight maternal deaths three resulted from induced unsafe abortion and five were direct obstetric deaths.

Table 1. Maternal deaths in relation to age and parity

Age (yrs)	Parity			Total
	0	1	2-3	
≤20	2	-	-	2
20-24	2	1	-	3
25-29	-	-	2	2
30-34	-	-	1	1
	4	1	3	8

In the three cases of induced septic induced abortion, contributing causes were sepsis, pyoperitoneum, malnutrition owing to the removal of comparatively large portion of intestine resection and tracheal stricture (Table 2).

Five cases were at term pregnancy. All of them were unbooked women coming from rural areas and did not receive any form of antenatal care. There were four cases of PIH (1mild and 3severe) and one case of twin with anemia (Table 3).

Abruptio placentae complicated one case of severe PIH and one case of mild PIH was complicated by traumatic PPH. Death occurred before delivery in one case, due to congestive cardiac failure and severe anemia, whereas the rest four died after delivery (1vaginal delivery and 3 caesarean section).

Deaths occurred in intensive care unit (ICU 5); Emergency(2); obstetric ward(1) and occurred within 24 hrs(2); ≥ 24-48hrs(3) and ≥ 48 hrs(3) of arrival.

Table 2. Maternal mortality in cases of criminally induced abortion

Gravida	Gest Age	Place of interference	Primary Procedure	Secondary Procedure	Time of Death	Cause of Death
2	8	Morang	Laparotomy for Uterine perforation	Hysterectomy pyoperitoneum	35th day	Severe sepsis leading to tracheal stenosis
1	12	Saptaritari	Hemicolectomy and illeocejunostomy for multiple gut injuries And repair of Uterine perforation		21st day	Sepsis
3	8	Bihar	Hemoperitoneum, shock and sepsis		within 24 hours	Died immediately after arrival

Table 3. Details of cases of maternal mortality

Cases	Diagnosis	Initial Management	Further Management	Time of Death after Intervention	Cause of Death	Avoidable Factor
20 yrs Primi	Severe PIH	Emergency cesarean section	ICU, ventilated	24 hrs	Pulmonary edema and anemia	
21 yrs Primi	Eclampsia	Emergency cesarean section	ICU, ventilated	7 hrs	Pulmonary edema and anemia	
25 yrs G4P3	PIH with APH (Abruptio placentae)	Emergency cesarean section	ICU, ventilated	10 hrs	APH → PPH hypovolemic shock, anemia	Delay in arranging money for cross match blood
30 yrs G3 P2	Twin pregnancy at term with	-----	---	Died at emergency room immediately on arrival	anemia and congestive cardiac failure	
19 yrs primi	Mild PIH at term	Spontaneous vaginal delivery	Vaginal tried for hemostatic sutures	2 hrs	traumatic PPH due to multiple vaginal wall tear hypovolemic shock	Blood could not be arranged in time

DISCUSSION

All the eight maternal deaths in this study indicates that women today at least have access to hospital having ICU care.² But the unfortunate story is as the saying goes 'after the death the doctor'. This is the tragedy of health situations.³ Very few women actually have adequate financial reserve for health issues. Therefore when these rural women are brought to the hospital, they hardly carry enough money even for the minor expenses like for blood cross matching and transfusion, let alone be the expectation of the blood donation by her relatives. This tendency was seen in the cases of twin pregnancy with severe anemia and other cases of severe PIH complicated by APH.

In these cases the patient's relatives were not even keen to bring blood or to cooperate in the treatment process. Similar situation was encountered in a case of induced abortion with hemoperitoneum where patient party did not even give permission to open the abdomen, and the unfortunate woman died in the emergency room.

It is sad even today that despite of the legalization of abortion, still women continue to die from complications of clandestine abortion and their sequelae like visceral perforation such as uterine and bowel injuries, which could have been avoided by safe abortion services.⁴⁻⁷ In the first place the contraception is not being used and secondly they are exposed to unsafe abortion by untrained personnels. In spite of the major surgeries like laparotomy and/ or hysterectomy for sepsis and pyoperitoneum, they could not be saved because of severe sepsis, tracheal stricture and cachexia related to small gut resection and malnutrition.

PPH is known to be most common cause of maternal mortality in Nepal. But this study also found PIH to be equally important, as it led to abruptio placentae, APH and ultimately PPH. Attempt to repair vaginal tears for hemostasis was unsuccessful may be because of low platelet count in PIH,⁹ which was not detected. Had the blood been available on time, one maternal mortality would have been avoided.

There is consensus of thought regarding the prevalence of anemia in Nepal.¹⁰ Anemia that complicated twin pregnancy with resultant congestive cardiac failure in the presence of rheumatic heart disease contributed to indirect causes of maternal death.¹¹

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