ORIGINAL ARTICLE

Near Miss Events Frequency and Most Common Causes

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ABSTRACT

Aim: To find the frequency of near miss events and their most common causes in patients received in the emergency of our hospital

Design: A retrospective study of the obstetric patients hospital records was carried out to summarize the Obstetric and perinatal events from 1st July 2014 to 31st December 2014, in the gynae and obstetric unit 1 of Lahore General Hospital. Near miss events were identified according to WHO near miss guide conclusion criteria 2009[1].

Results: Out of total 2371 live births 124 Near Miss Events occurred among which 7 expired. Thus Near Miss Ratio (NMR) and Maternal Mortality Ratio (MMR) of our hospital is 52.2/1000 live births and 295/100000 live births respectively. Thus Maternal Mortality to Near Miss Ratio is 1:17.7. Haemorrhage was found to be the most common cause. Severe preeclampsia and medical disorder were the next common causes.

Conclusion: This study shows that for every 17 women who survived life threatening complication 1 died. So it is very essential to identify and give timely good management to near miss cases to decrease mortality rate.

Keywords: Near miss case /rate, maternal mortality rate, Near Miss Events

INTRODUCTION

The definition of Maternal Near Miss according to WHO is a women who nearly died but survived a complication that occurred during pregnancy , child birth or within 42 days of termination of pregnancy[2].

Auditing maternal death is used for assessing the quality of care in a country. According to Pakistan demographic and health survey 2010 MMR is to 260/100000 LB. It varies among rural and urban population and being highest in the rural areas[3]. Recently review at the very severe end of the maternal morbidity spectrum, described as Near Miss has been found to be a useful compliment in investigation of maternal mortality[4]. The millennium development goal (MDG) to reduce the maternal mortality rate by 75% has fallen well below our target.

For the purpose of this study near miss events were identified according to WHO Near Miss Guide inclusion criteria 2009[1].This study is conducted to find out the frequency of near miss events and their most common causes. This will guide us to make interventions in maternal health sector and improve quality of care in hospital for reducing NMR and MMR.

MATERIAL AND METHODS

A retrospective study of hospital records of obstetric patients was done .Obstetrics and perinatal events were summarized from 1st July 2014 to 31st December 2014 in Gynae Unit-1 of the Lahore General Hospital, Lahore. It is a government tertiary health care centre, situated at one extreme end of Lahore. Thus it receives referrals from all surrounding periphery areas and also from private clinics. It provides emergency services 24 hrs 7 days a week. The near miss events were selected according to the WHO Near Miss Guide inclusion criteria 2009[1].

- Severe maternal complications
- Critical interventions or intensive care unit use
- Life- threatening conditions (near miss criteria)
- Cardiovascular dysfunction
- Respiratory dysfunction
- Renal dysfunction
- Coagulation dysfunction
- Hepatic dysfunction
- Neurological dysfunction
- Uterine dysfunction

RESULTS

During the 6 months study period there were 2371 live births in our hospital. There were 124 Near Miss events and 7 maternal deaths. This resulted in a total MMR of 295/100000 live births. The total Near Miss rate was 52/1000. The MMR to NMR was 1:17. Most of the cases 89% were referred to the hospital while only 11 % developed complications within the hospital. The booking status showed that 88% of the near miss cases were unbooked. The hospital stay ranged from 3 days to 24 days. Table 1 shows some general characteristics of the near miss cases.

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Table 1. Patient Characteristics

Characteristics	**n**	**%age**
Age range in yrs	18-44	
Gravida		
Primigravida	46	37
Parity 2-4	65	52.5
Parity 5 and above	13	10.4
Gestational age in weeks		
?	18	14.5
28	24	19.3
3	66	53.22
tpartum	16	12.9

The mean age of the pts presenting was 18-44 years. Considering parity among these cases 46(37%) were primigravida and 65(52.2%) were with parity 2-4. Grandmultiparas were 13(10.4%). Gestational age at the time of receiving was between 1-12 wks in 18 (14.5%) pts, between 13 – 28 wks in 24(19.3%), and greater than 28 wks in 66(53.22%). However postpartum pts received were 16 in number. The most common causes of near miss events were also identified. Table 2 shows the most common causes and their percentage.

Table 2: Most common causes of near miss events.

Diagnosis	**Near Miss Cases**	**Per 1000 Live Births**
Haemorrhage	48	20
)Abruption	10	
PPH	18	
Placenta praevia	15	
Accreta	3	
Ruptured uterus	3	
Hypertensive disorders	27	11
Severe Preeclampsia	20	
Eclampsia	7	
HELLP syndrome	-	
Ectopic pregnancy	18	7.5
Septic Miscarriage	15	6.3
Obstructed Labour	15	6.3
Medical disorders – hepatitis E	1	0.42

Table 3: Causes of maternal death.

Causes of maternal death	**n**	**%age**
Haemorrage	3	42.8
Severe hypertension	2	28.57
Septic induced miscarriage	1	14.2
Med disorder Hep E	1	14.2

The most common causes were found to be haemorrhage and hypertension. Late pregnancy haemorrhage accounted for 48 cases (38.7%) of near miss events. Out of them10 were with abruption 18 with Placenta Praevia(including 3 accretas) and 18 cases were with postpartum haemorrhage.

Severe hypertensive disorders of pregnancy were responsible for 27 (21%) cases. Septic induced abortions and ectopic pregnancies accounted for 15 and 18 cases respectively. 18 cases of obstructed labour were also received during this period.

Among the causes of death, haemorrhage was the leading cause, responsible for42.8% of deaths in women. Among them one was received with ruptured uterus, one was Placenta previa accreta, invading the bladder and the third case was a grand multigravida received after home delivery with massive post partum haemorrhage. The details of causes of maternal deaths are shown in Table 3.

DISCUSSION

For the assessment of a country's quality of obstetrics care, the Maternal Mortality rate is used as an indicator, but as it is subject to many flaws, the Near Miss events are now used as a complementary tool. This is described by Pattinson that the sequence from good health to death in a pregnant woman is a clinical insult, followed by a systemic inflammatory response, organ failure and finally death. By viewing pregnancy and its potential outcomes as a continuum, beginning at normal pregnancy and concluding with maternal death, the number which can be studied meaningfully can be increased by examining the group of outcomes closest to death[5].

In the present study the prevalence of near miss cases was 5.2%. In resource poor settings, 4-8% of the pregnant women suffer from near miss events and in developed world it is 1%[5]. The maternal death to near miss ratio in this study is 1:17. It indicates that for every 17 women who survived life threatening complication, one died. It is quite high than that in developed countries. In other similar studies the maternal death to near miss ratio turned out to be 1:5 and 1:7[6,7].

The ratio is indicative of the standard of obstetrics care the unit offers. This ratio is quite high to what is observed in developed countries of the world. In Europe a study was carried out and revealed a ratio of 1:117- 223[8,9]. A similar study in Niger however reveals comparable ratio of 1:11-22 using the same criteria for selection[10]. Our study shows that near miss events are occurring in a quite high percentage in woman. It indicates that the community is still unaware of the pregnancy complications. The majority of the pts were unbooked.

Haemorrhage was the most common cause of near miss events. The reason behind this is that in a poor developing country like Pakistan obstetrics services are poor. Majority of the pts are still delivered at home by traditional birth attendants,

most of the cases of haemorrahage comprising maternal death and near miss events were delivered at home . This observation is similar to another study carried out in Pakistan[11]. Majority of the women who arrived in a critical condition, had no antenatal visits showing antenatal care is a major determinant of maternal and fetal outcome.

The socioeconomic factors also influence the percentage of near miss events. Low socioeconomic status, discouragement of family members in seeking antenatal care due to illiteracy, poor transport facilities and lack of awareness regarding pregnancy complications all are contributing in poor maternal outcome.

CONCLUSION

In current study illiteracy, poverty and late referrals from rural areas may be predictors of near miss events. It is the right of every woman to get good quality of health care. All women should have access to antenatal care, institutional delivery and postpartum care. Any delay in decision making or reaching appropriate care must be avoided. Health education should be given at community levels to create awareness about the importance of antenatal care, institutional delivery and postnatal care. The rate of literacy and women empowerment should be increased.

Awareness should be created in the Family members as well about the warning signs in pregnancy. Primary and secondary level of health care system should be improved.Multidisciplinary team approach along with intensive care specialist and anaesthesiologists can bring optimal care for the near miss pts thereby help in reducing maternal morbidity and mortality.

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