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ORIGINAL ARTICLE

Audit of Maternal Near Miss Cases in A Tertiary Care Hospital of Mardan

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ABSTRACT

Aim: To determine the frequency and causes of maternal near miss events at a tertiary care hospital of Mardan.
Methodology: This descriptive cross sectional study was conducted at Gynaecology department of Mardan Medical Complex from January 2018 to December 2019.Cases of maternal near miss events were collected from the records of women who met the WHO criteria for near miss. All the data was entered into structured proforma and analysis done.
Results: Total near miss cases were 215 and totallive births were 9,228. The near miss rate was 23/1000 and maternal near miss to maternal mortality ratio was 3.7:1.Mean age was 26±3.2 years.Age group of 21-30 years was the high risk group with 112(52%) cases, followed by 31-40 years age group with 81(38%) cases. 89(41%) patients were multigravidas and 77(36%) were grand multi gravidas. Gestational age of more than 28 was seen in 146(68%) women and less than 28 weeks in 17(8%) whereas 52(24%) were postnatal.184(86%) were unbooked cases. Regarding the causes of near miss events, haemmorhage was seen in 96(45%), hypertension in 53(24.6%), Sepsis in 26(12%), cardiac disease in 10(4.6%), anaphylactic shock in 8(4%), anesthetic complications in 6(3%), epilepsy and hepatic encephalopathy in 4(2%) each and 8(4%) were due to indirect causes.
Conclusion: Near miss cases have many similarities with maternal deaths and give us knowledge about the issues that need to be solved in order to reduce the grave situations where a maternal death can be prevented.
Keywords: Near miss, Mortality, Morbidity, Haemmorhage, Hepatic Encephalopathy, Sepsis

INTRODUCTION

The purpose of maternal health care services is to improve the standards of obstetric care keeping in view the inquiries on the maternal deaths [1].Severe acute maternal morbidity or near miss events in terms of obstetrics means a women who escaped a life threatening situation of medical disorder, organ dysfunction, or some event during the course of her pregnancy or delivery[2].These cases are similar in their pathological, physiological and clinical basis with the maternal mortality cases[3].

Maternal near miss is the situation where woman presents with serious complication in the antenatal period, delivery and within 42 days postpartum, but survived incidentally or good hospital care[4].These cases help in identifying the pitfalls in our health system and evaluate the specific areas where improvement is desired[5].The near miss concept is a useful way to pick the relationships between women who survived and women who infact, died of these conditions, to make us able us to evaluate the standads of women healthcare[6].

The identification and the detailed understanding of near miss cases helps in further evaluation of the aetiological factors of maternal mortality [7].The near miss cases are always high in number, if compared to mortality cases, and prove to be more useful in provision of information about the factors which lead to morbidity or mortality during pregnancy or 42 days of delivery or termination of pregnancy[8]. WHO definition has actually given us a common basic material of maternal near miss events across different countries and enabled comparison to be conducted[9].

The aim of our study was to figure out the frequency of near miss cases and the causes of near miss events amongst the obstetric patients in our institution in order to serve as a complimentary method for audit of the quality obstetric health in our institution.

MATERIAL AND METHODS

This descriptive cross sectional study was conducted in Gynae Department of Mardan Medical Complex from January 2017 to December 2019. The near miss cases were selected according to the WHO 2009 criteria, and included clinical, laboratory and management based criteria. Maternal mortality during the study period was also analysed.

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Approval was taken from hospital ethical committee. Details of all patients with age, parity, period of gestation, booked/ unbooked, mode of delivery, obstetric complication, whether admitted in ICU, length of stay, nature of organ system failure or dysfunction if present, number of blood or blood product transfusions, details of any surgical procedure to save the life of the mother was also recorded in a predesigned proforma. Final diagnosis with respect to haemmorhage, hypertension, sepsis, cardiac disease, and other medical disorders contributing to maternal near miss and maternal deaths was made and taken into account. The analysis of the data was done using SPSS 22.0 and results were calculated in frequencies and percentages.

RESULTS

Total number of deliveries in study duration was 9,406 and total number of live births was 9,228.Nearmiss cases were 215, making the prevalence of near miss 2.3%.Maternal near miss ratio was 23/1000 and maternal near miss to maternal mortality ratio was 3.7:1.

Mean age of near miss cases was 28±3.2 years.11(5%) cases presented in less than 20 years age group,11(52%) were 21-30 years, 81(38%) were 31-40 years and 11(5%) were more than 40 years age.49(23%) women were primigravidas,89(41%) were multigravidas and 77(36%) were grand multigravidas. 17(8%) women were less than 28 weeks, 146(68%) were more than 28 weeks till delivery and 52(24%) were postnatal at the time of near miss event. 184(86%) patients were unbooked.

Table 1: Demographic characteristics (n=215)

Characteristic	Frequency	Percentage
Age		
< 20 years	11	5%
21- 30 years	112	52%
31- 40 years	81	38%
>40 years	11	5%
Parity		
Primigravida	49	23%
Multigravida	89	41%
Grand Multigravida	77	36%
Gestational age		
<28 weeks	17	8%
>28 weeks	146	68%

Postnatal	52	24%
Booking status		
Booked	31	14%
Unbooked	184	86%

Regarding the causes of near miss events,96(45%) were due to haemmorhage, in the form of antenatal, intrapartum, intraoperative, or postpartum haemmorhage. 53(24.6%) were hypertensive, 26(12%) were due to sepsis,10(4.6%) were due to cardiac disease, 8(4%) had anaphylactic shock, 6(3%) had anesthetic complications,4(2%) were epileptic, 4(2%) had hepatic encephalopathy and 8(4%) were due to indirect causes.

142(66%) of our near miss cases remained admitted in ICU, 86(40%) had blood transfusions, 45(21%) needed ventilator support, and 71(33%) needed surgical intervention.

Table 2: Causes of near miss events (n=215)

Cause	Frequency	Percentage
Haemmorhage	96	45%
Hypertension	53	24.6%
Sepsis	26	12%
Cardiac disease	10	4.6%
Anaphylactic Shock	8	4%
Anesthetic complications	6	3%
Epilepsy	4	2%
Hepatic Encephalopathy	4	2%
Indirect causes	8	4%
Total	215	100%

DISCUSSION

Obstetric near miss cases reflect the major causes of obstetric death cases or in other words the standards of maternal healthcare. The near miss criteria formulated by WHO in 2009 is unique in considering clinical, laboratory and management parameters[4]. All the factors were not applicable in this study, especially the laboratory based, as pH, lactate, ketoacids whereas management criteria was applicable.

In our study, the prevalence of near miss was 23/1000 live births. In a local study done by Shahid A et al, this figure was reported as 52/1000[10], whereas it was 10/1000 in another local study by Naz T et al at Khyber Teaching Hospital, Peshawar[11]. It was reported as low as 4.4/1000 in another study[12] and the range varied between 15-40/1000 in different international studies[5,13]. The difference in figures is probably due to difference in definition and identification of cases.

The maternal near miss to maternal mortality ratio is 3.7:1 in our study, which means for every 3.7 near miss cases, there is one maternal death. Higher ratios reflect better care, which means that more cases of near miss escaped death. The ratio was seen as 3.5:1 in another local study[11] and same as ours in study done at Ziauddin hospital Karachi in 2018[2]. Majority of patients were unbooked (86%), presenting in critical condition. This depicts that in our society, women are still unaware of the dreadful complications of pregnancy, 77.4% antenatal women arrived in unbooked status at hospital in another study[11].

Mean age was 28±3.2 years, almost similar to that seen in study by Shaheen F[9]. Most of our cases fell in 21-30 years age group, close to the results of Mansuri F et al in their research done at Ahmadabad, India in 2019[16].41% of our multigravidas fall prey to near miss events,63.6% and 45.6% were the figures seen in other studies [2,9].

The basic obstetric conditions which ends up in a near miss event are almost similar in most of the cases. In our study, haemmorhage was the topmost cause with greater potential for near miss in 44.6% cases. Close figures of 45.6% were observed by Sultana S et al in their study [2].Most of the cases in this group were referred from private clinics or periphery, received in very critical condition and needed blood transfusions and peripartum hysterectomies. Ray N et al observed 38.5% of their near miss cases attributed to haemmorhage[1].

Hypertensive disorders attributed for 24.6% of near miss cases in our study. Shaheen F in her study done at Holy family hospital, Rawalpindi reported hypertensive disorders as the topmost cause of near miss events attributing to 48.5% cases[9], whereas this figure was 40.3% in another study[1]. Lotufo FA et al reported same figure as ours[12]. Sepsis attributed to 12% cases in our study, whereas this figure was as high as 30% in two international studies[14,15]. Cardiac diseases were responsible for 5% cases of near miss in our study whereas 5.6% cases were observed in another study[11].

The benefits of assessment of near miss cases are that they help us in creating safe and approachable obstetric health care for future. The factors lacking at patients end are the traditions of home delivery, non-booking, poor compliance with obstetricians advise, disbelief in modern medicine etc. Factors related to health system include poor referral system, lack of or inadequate intensive care facility, deficiency of staff, beds etc.

CONCLUSION

Obstetric emergencies need life saving measures. Combating of the near miss cases at the primary health care facilities is the need of the hour. To cope with the issue of near miss, women should be addressed at a basic level about antenatal visits, compliance with obstetrician's advise, deliveries in a hygienic environment, trained birth attendants and birth spacing evaluation of antenatal women for all the risk factors in a especially designed high risk antenatal OPD and providing high risk patients intensive care can reduce the incidence of near miss events.

Conflict of interest: Nothing to declare

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