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Frequency of Near Miss Morbidity in Pregnant Women Coming to Allied Hospital, Faisalabad

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ABSTRACT

Background: Cases with near miss morbidity are those in which women present with potentially fatal complication during pregnancy, delivery or the puerperium and survive by good hospital care at right time. Recently, review of these cases has become a useful criterion to investigate maternal mortality. **Objective:** To find out the frequency of near miss morbidity in pregnant women coming to Allied Hospital, Faisalabad. **Study Design:** Descriptive study. **Settings:** This study was conducted in Department of Obstetrics & Gynecology, Allied Hospital, Faisalabad Pakistan. **Duration:** Six months from January 01, 2017 to June 30, 2017. **Methods:** A total of 225 cases were enrolled in this study. A consent was taken from all the cases. All patients were examined regarding presence of near miss according to operational definition. Detailed history and clinical examination were done. All the relevant investigations were done by the hospital laboratory and then the information was proforma by the investigator. **Results:** There were 192 (85.33%) patients with no near miss, 7 (3.11%) with hemorrhage, 3 (1.33%) with hypersensitive disorder, 7 (3.11%) with sepsis, 5 (2.22%) with uterine rupture and 11 (4.89%) with anemia. **Conclusion:** A high frequency of near miss morbidity was found in pregnant women. Factors causing near miss morbidity are good source of information about the severity of complications in pregnancy. There is a dire need for the improvement of antenatal care especially by improving the resources to manage severe morbidities due to hypertension and hemorrhage. So, that high-risk pregnancies can be timely identified and managed. The referral system should be reviewed and improved on urgent basis.

Keywords: *Near miss morbidity, Pregnant women, Sepsis, Hemorrhage, Anemia, Hypertension disorder.*

INTRODUCTION

Maternal mortality can be regarded as "just the tip of the iceberg", with maternal morbidity being the vast base to the iceberg- which most of the times remains unexplained.[1,2] In this situation this vast base comprises the cases of acute obstetric complications which are immediate threat to the survival of the woman but somehow her life is saved either by chance or because of the care provided by the hospital during pregnancy, labour or within 6 weeks after termination of pregnancy.[3,4] In general, complications arise in 15% of pregnancies worldwide. Near miss cases are quickly being adopted as an important criterion to judge the quality of obstetric care.[5]

The quality of obstetric care and maternal health have traditionally been gauged on the basis of maternal mortality. The range maternal mortality in developing and low-income countries is drastically high as compared to high-income countries, where the former groups bears the 99% load of maternal mortality.[5] A 75 % reduction in the maternal mortality by 2015 was one of the Millennium Development Goals (MDGs) but the goal to improve maternal health fell away below the target. The World Health Organization (WHO) estimated that in year 2000,

20 million women suffered acute complications in pregnancy and 529,000 maternal deaths.[6]

In Pakistan, near miss review has not been used frequently as a tool to monitor the quality of maternity services. A local study conducted to determine the frequency of severe obstetric morbidity at a public sector tertiary care hospital in Karachi recorded that among 1508 deliveries, the frequency of near miss was 7.6%, out of which 34.2%, 29.1%, 11.53% and 8.1% due to hemorrhage, hypertensive disorder, ruptured uterus and sepsis respectively.[7]

Contrary to the above study, another local study recorded the prevalence of near miss cases among 7238 deliveries to be 1.11%. Out of which, hypertensive disorder and hemorrhage account for 60.3%.[8]

The rationale of the study is earlier referral and identification of high-risk pregnancies and to improve the resources for the management of severe morbidities to prevent maternal mortality. So, the results of the study will be helpful for the obstetricians and patients as well for proper antenatal care and reducing this morbidity.

METHODS

This descriptive study was conducted in Department of Obstetrics and Gynecology, Allied Hospital, Faisalabad Pakistan. Study duration was six months from January 01, 2017 to June 30, 2017.

By using WHO sample size calculator P = 7.6%, Absolute precision = 3.5%, Confidence level = 95%, Sample size = 225. Non-probability: consecutive sampling technique was used.

All pregnant females within 20-40 years of age with any gestational age and parity were included in the study.

Previous history of near miss, patients with hemorrhage not requiring resuscitation or acute blood transfusion. Patients with stable cardiac and respiratory disease not requiring intensive care admission was excluded from the study.

A total of 225 cases fulfilling the inclusion criteria were enrolled from the Department of Obstetrics and gynecology, Allied Hospital Faisalabad. Exclusion criteria were strictly followed. An informed consent was taken to include their data in the study. All patients were examined regarding presence of near miss according to operational definition. Detailed history and clinical examination were performed. Patients were investigated by the investigator and consultant on floor. All the relevant investigations were done by the hospital laboratory and then the information was recorded on proforma by investigator.

Descriptive analysis of the collected data was performed with the help of SPSS version 22. Mean and standard deviation was calculated for quantitative variables i.e. age, gestation and parity. Frequency and percentage were calculated for presence of near miss (hemorrhage, hypertensive disorder, sepsis, uterine rupture and anemia). The tables and graphs were constructed regarding age, parity and gestational age. Chi square test was used by taking p value <0.05 as significant.

RESULTS

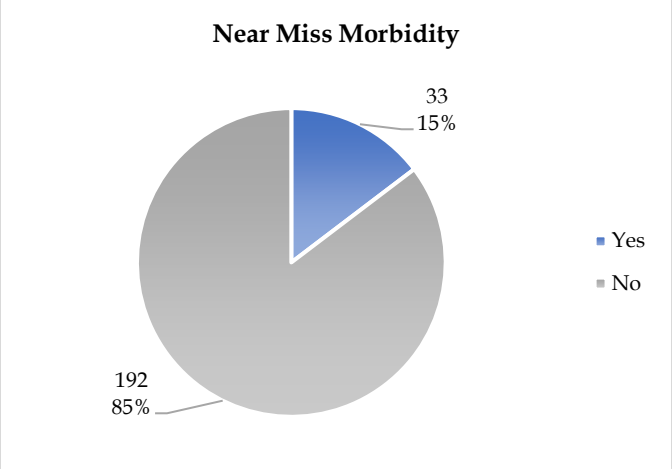
The mean age of the patients was 29.89 ± 5.93 years. The minimum age was 20 years and maximum was 40 years. The mean gestational age was 24.45 ± 7.84 weeks. The minimum gestational age was 12 weeks and maximum was 38 weeks. The mean parity of the patients was 2.00 ± 1.28. The minimum parity was zero and maximum was 4 (Table 1).

Table 1: Descriptive statistics for age, gestational age and parity

	Age	Gestational age	Parity
n	225	225	225
Mean	29.85	24.45	2.00
Std. deviation	5.93	7.84	1.28
Minimum	20	12	0
Maximum	40	38	4

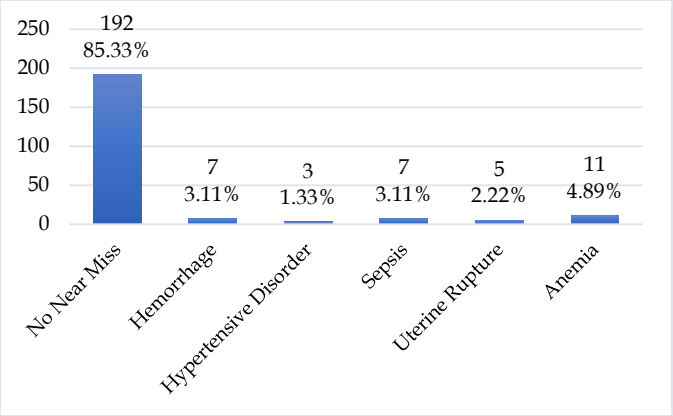
There were 33 (14.67%) females who had near miss morbidity, whereas 192 (85.33%) patients had no near miss (Figure 1).

Figure 1: Frequency distribution of near miss morbidity



Among the patients with near miss, 7 (3.11%), 3 (1.33%), 7 (3.11%), 5 (2.22%) and 11 (4.89%) had hemorrhage, hypertensive disorder, sepsis, uterine rupture and anemia respectively (Figure 2).

Figure 2: Frequency of near miss morbidity in pregnant women



There was no significant association between age and near miss groups as the p-value (0.262) was not significant (Table 2). Similarly, no significant association was found between gestational age and near miss (p-value=0.342). A significant association was found between near miss and parity as the p-value (0.013) was significant (Table 2).

Table 2: Association of near miss with age groups, gestational age stratified and parity

Near miss morbidity	Age groups		Gestational age		Parity		Total
	21-30 years	31-40 years	11-25 weeks	26-40 weeks	0-2	3-5	
No near miss	103 85.8%	89 84.8%	110 87.3%	82 82.8%	134 90.5%	58 75.3%	192 85.3 %
Hemorrhage	3 2.5%	4 3.8%	2 1.6%	5 5.1%	4 2.7%	3 3.9%	7 3.1%
Hypertensive disorder	1 0.8%	2 1.9%	3 2.4%	0 0.0%	1 0.7%	2 2.6%	3 1.3%
Sepsis	4 3.3%	3 2.9%	4 3.2%	3 3.0%	4 2.7%	3 3.9%	7 3.1%
Uterine rupture	5 4.2%	0 0.0%	2 1.6%	3 3.0%	3 2.7%	2 2.6%	5 2.2%
Anemia	4 3.3%	7 6.7%	5 4.0%	6 6.1%	2 1.4%	9 11.7%	11 4.9%
Total	120 100%	105 100%	126 100%	99 100%	148 100%	77 100%	225 100%
Chi-square test	6.487		5.644		14.385		
p-value	0.262		0.342		0.013		

DISCUSSION

In our study, 33 (14.67%) women suffered from near miss morbidity. The leading cause of near miss morbidity was hemorrhage (3.11%) and sepsis (3.11%) followed by hypertensive disorder (1.33%), anemia (4.89%) and uterine rupture (2.22%). No statistically significant association was found between near miss morbidity and age, gestational age but parity had a significant impact on near miss morbidity.

In a systematic review conducted by WHO, the range of near miss cases was found to be 0.4%-0.8%[9]. However, in our study the frequency of near miss morbidity was 14.67% which was much higher as compared to that of mentioned in above range. This huge variation can be attributed to the use of different inclusion criteria and place of study. Even in the study conducted by WHO, higher rates were observed in resource-poor areas and under the organ system-based criteria. A very high range (01-25%) was observed in some African countries.[9] Taly A. from India reported hemorrhage and hypertensive disorders (34%) as the leading causes of near miss. Sepsis was third on the list (4%).[10] Another study from Kathmandu teaching hospital reported a relatively low range (2.3 %) for near miss cases. Hemorrhage (41.66%) and hypertensive disorder (21.77%) were the leading causes of near miss cases.[11]

A local study conducted in Lahore recorded 124 (5.2%) near miss cases among 2371 live births. Hemorrhage (48%), hypertensive disorder (27%) and severe pre-eclampsia (20%) were the major causes of maternal near miss cases.[12] Another study from a tertiary care hospital from Karachi recorded the frequency of near miss to be 7.6 % among 1508 deliveries, out of which 34.2%, 29.1%, 11.53% and 8.1% were due to hemorrhage, hypertensive disorder, ruptured uterus and sepsis respectively.[7] Frequency of near miss morbidity in our study was much higher than reported in this local study from Karachi. Causes of near miss morbidity in our study are comparable to causes mentioned from Karachi i.e., hemorrhage (26%) followed by hypertensive disorder (20%), anemia (20%), uterine rupture (18%) and sepsis (16%). Contrary to the above study, another local study recorded the prevalence of near miss cases among 7238 deliveries to be 1.11%, of which hypertensive disorder and hemorrhage account for 60.3%. In our study, the top causes of near miss morbidity were hemorrhage and hypertensive disorder accounting for 46%.[8]

Pakistan being a developing country, has poor obstetric services shrouded by myths. The whole public health delivery system needs to be revamped. So near miss cases, being more common than maternal deaths should be an integral part of hospital statistics. Thus, investigating the care provided by hospital will be less threatening to the care providers as the women survived.[13] Near miss cases as an adjunct to maternal mortality are quickly being considered as an important concept alongside the criteria provided by WHO.[14] This

concept can be helpful in systematic data collection and for the comparison of rates over time and across regions. So that the data from the hospitals having same facilities can be compared and obstetric care can be improved. At the same time risk factors and substandard care can be identified.

Every year approximately 529,000 maternal deaths occur due to complications during pregnancy and delivery. Nearly all of them (99%) are from resource-poor countries. Over the time, maternal mortality has been the criteria used to monitor the quality of obstetric care all over the world. But alongside maternal mortality, many more women face life-threatening conditions.[15,16] Investigating severe maternal morbidity (near miss) is a newly recognized tool that identifies women at high risk of maternal death and helps to allocate resources especially in low-income countries.[17] Near miss (those who nearly died) is some serious adverse condition that leads to life-threatening complications in the mother, but from which she survives. Since near miss events are more frequent than maternal death[14] and may provide more information on the pathways that lead to severe morbidity and death, they will definitely play a vital role in identifying the deficiencies and strength in the provision of obstetric health care services in any facility in developing countries.[13]

CONCLUSION

Results of this study showed high frequency of near miss morbidity in pregnant women. Factors causing near miss morbidity put forth important information about the obstetric case.

LIMITATIONS

Dimensions of current study include only late gestational age. Study should also be extended to include early pregnancy complications.

SUGGESTIONS / RECOMMENDATIONS

There is a dire need for the improvement of antenatal care especially by improving the resources to manage severe morbidities due to hypertension and hemorrhage. So, that high-risk pregnancies can be timely identified and managed. The referral system should be reviewed and improved on urgent basis.

CONFLICT OF INTEREST / DISCLOSURE

There is no conflict of interest.

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