FREQUENCY OF MATERNAL NEAR-MISS IN OBSTETRICAL & GYNECOLOGY UNIT OF A TERTIARY CARE HOSPITAL

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ABSTRACT

Objectives: *To determine the frequency of near-miss among patients admitted during pregnancy till postpartum period.*

Materials and Methods: *This cross-sectional study was conducted in Gynecology & Obstetrics Unit (B) of Lady Reading Hospital, Peshawar from 9/12/2019 to 9/6/2020. All women between age 15-48 years during pregnancy till 42 days after the end of pregnancy, admitted in the ward were included while a pregnant lady with complication not associated with pregnancy were excluded. Data on complications, mode of delivery, age and parity were taken from registers maintained in labor room, obstetrical ward and intensive care unit. Effect modifiers like age, gestational age. parity, gravida and causes were controlled through stratifications by using chi square test while P-value < 0.05 was taken as significant.*

Results: *Out of total of 611 women were observed in which mean age was 29 ± 10.91 years. About 238(39%) patients were observed for primi para while 373(61%) patients were multi para. Similarly, 226(37%) patients were primi gravida while most of the patients were 385(63%) were multi gravida. Only 31(5%) patients had shock while 12(2%) patients had fits and very little number of 6(1%) patients had proteinuria. More over 8% patients had near miss while 92% patients didn't had near miss.*

Conclusion: *Our study concludes that the frequency of near-miss was 8% among patients admitted during pregnancy till postpartum period.*

Key words: *Near-Miss, Pregnancy, Postpartum Period*

INTRODUCTION

The frequency of maternal near miss is used to evaluate and improve the quality of obstetrical care. Never miss are defined by the World Health Organization (WHO) as: "A woman who nearly died but survived a complication that occurred during pregnancy, child birth or within 42 days after the end of her pregnancy".[1] Practically, women when they survived life-threatening conditions are considered as near miss cases. According to WHO, UNICPA, World Bank Group, UNICEF and UN Population Division estimates from 2015, the overall maternal mortality rate (MMR) is 216/100000 live births, with Pakistan having an MMR of 178/100000 live births.[2] Developing countries accounts 99% of estimated global maternal death. In a population-based study carried by Goldenberg RL, Saleem S, ALI Sm etal, between January 2014 and April 2016, those who were likely to have a near miss event were screened to identify those likely to have a near-miss event. Among 122 707 women screened, A potential to near-miss event occurred in approximately 15.0 percent of the cases, of whom 26.6%; 4.0% of all women had a near-miss maternal event. Maternal

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mortality was 155 per 100,000 live births in total. The hematologic/coagulation system, infection, and cardiovascular system were the most common causes of near-misses.[3] Across the globe, Pakistan has 3rd highest burden of maternal and children mortality.[4] Recently near miss has been found a very useful tool in inquiry of maternal mortality. Women who died from pregnancy-related complications and those who survived share many characteristics. As a result, the near-miss concept in maternal health has emerged. Investigating the survival of life-threatening conditions provides a more comprehensive assessment of maternal health care quality.

According to a study carried at Lahore General Hospital Pakistan by Aminah shah there were 52/1000 near cases and 295/ 100000 maternal death for the period of 6 months.[5,15]

Another study carried in 2014 by David, Near Miss ratio was 20/1000 live birth while mortality was 254/100000 live birth. The most common event in Near Miss cases (58 percent) was hemorrhage, followed by eclampsia (35.5%).[6] Near misses include hypertensive diseases of pregnancy, haemorrhage, anemia, and sepsis worldwide.[7] Authors Dile M, Seyum T and Abate T who carried out a study between July 2006 & July 2007 where they conclude that the incidence of near miss was about twelve percent and hypertensive disorders in pregnancy (37.3%) while Severe hemorrhage was (41.3%). Similarly the septicemia was (18.6%) and severe anemia was observed to be (14.6%) and prolonged obstructed labour (23%) were the associated factors of near miss.[8] In any obstetric settings, woman who suffers from severe acute morbidity during pregnancy, some of them die and some nearly survives, so by knowing these near-cases much can be learn about dealing with maternal morbidity.

This study was conducted to determine the number of near-miss cases in Obstetrical and Gynecology unit of Lady Reading Hospital. This aspect of near-miss was introduced by WHO 2010 in developing countries to tackle the high mortality rate, this data is collected to reach consensus on burden of near-miss and how to reduce maternal mortality in our unit. Previously no such data is available in our unit.

MATERIALS AND METHODS

This cross-sectional study was conducted in Gynecology & Obstetrics Unit (B) of Lady Reading Hospital, Peshawar, Khyber Pakhtunkhwa, Pakistan from 9/12/2019 to 9/6/2020.By taking prevalence of 17.3% of near miss cases,9 with 3% margin of error at 95% confidence interval, we tool a sample of 611 participants by using WHO sample size calculator. All women between age 15-48 years during pregnancy till 42 days after the end of pregnancy, admitted in the ward were included while a pregnant lady with complication not associated with pregnancy were excluded. We used Non-Probability Consecutive Sampling. Approval was taken from the hospital research ethical committee and CPSP. After taking informed consent, all patients admitted in labor room, obstetrical ward and HDU, fulfilling the inclusion criteria were evaluated and a structured questionnaire were filled after the discharge of the patient. If needed, a copy of the hospital file was checked to validate the recordings. Data on complications, mode of delivery, age and parity was taken from registers maintained in labour room, obstetrical ward and intensive care unit. Data was included all patients admitted in gynecology & obstetrical (B) unit LRH during pregnancy, labour or postpartum.

SPSS 20.0 was used to enter and analyze the data.. Descriptive statistics: mean and standard deviation were computed for quantitative variables. i.e., patient's age, gestational age. Frequency and percentages were computed for categorical variables like parity, gravidity and causes (cyanosis, gasping, failure of clot formation, unconsciousness/coma, cardiac arrest, neurological deficit, fits, proteinuria) and near miss. Effect modifiers like age, gestational age. parity, gravida and causes were controlled through stratifications by using chi square test while a P-value < 0.05 was taken as significant.

RESULT

TIn this study age distribution among was analyzed as 403(66%) patients were in age 15-30 years, 208(34%) patients were in age range 31-45 years. Mean age was 29 years with SD $\pm$ 10.91. Period of gestation was analyzed as 348(57%) patients had $\leq$ 37 weeks while 263(43%) patients had >37 weeks. Parity distribution was analyzed as 238(39%) patients were primi para while 373(61%) patients were multi-Para. Gravidity distribution was analyzed as 226(37%) patients were primi gravida while 385(63%) patients were multi gravid. Common

clinical out was analyzed as 31(5%) patients had shock, 12(2%) patients had fits while 6(1%) patients had proteinuria. Status of near miss was analyzed as 49(8%) patients had near miss while 562(92%) patients didn't had near miss (Table1).

We analyzed the association of near miss with respect to age, gestational age Parity, gravida (Table2). Our result showed that near miss was 28 ≤ 37 weeks as compare to those of > 37 weeks having 21 frequency (P value, 0.978) While similarly when we run chi square test to see the distribution of near miss with respect to parity distribution, our result showed that Primi para was 19 while Multi para was 30 but the result was not statistical significant (P value, 0.978).Also the Primi Gravida was 18 while Multi Gravida was 31(P value, 0.969)

DISCUSSION

Out of total of 611 women were observed in this study where mean age was 29 years with SD ± 10.91. About 348(57%) patients had ≤ 37 weeks while 263(43%) patients had >37 weeks.Simialrly 238(39%) patients were primi para while 373(61%) patients were multi para. Nearby 226(37%) patients were primi gravida while 385(63%) patients were multi gravida. Also 31(5%) patients had shock, 12(2%) patients had fits while 6(1%) patients had proteinuria. More over 8% patients had near miss while 92% patients didn't had near miss.

Table 1: Descriptive Statistics

Variable	Categories	n	%
Age	15-30 Years	403	66%
	31-45 Years	208	34%
Period Of Gestation	≤ 37 Weeks	348	57%
	> 37 Weeks	263	43%
Parity Distribution	Primi Para	238	39%
	Multi Para	373	61%
Gravidity Distribution	Primi Gravida	226	37%
	Multi Gravida	385	63%
Clinical Outcome	Shock	31	5%
	Fits	12	2%
	Proteinuria	6	1%
Frequency Of Near Miss	Yes	49	8%
	No	562	92%

Similar results were found in a different investigation carried out by Adeoye IA et al, where the rate of near misses was 12%. Severe haemorrhage (41.3%), hypertensive disorders in pregnancy (37.3%), protracted obstructed labour (23%) septicemia (18.6%), and severe anaemia were the direct causes of near misses (14.6 percent).The important risk variables were as follows:, along with their odds ratios and 95% CI: long-term hypertension [OR=6.85; 95% CI: (1.96 – 23.93)].Those who had a phase one delay were more than twice as likely [OR=2.07; 95 percent CI (1.03 - 4.17)], while those who had an emergency caesarian section were three times more likely [OR=3.72; 95 percent CI: (0.93 - 14.9)]. and vaginal delivery with assistance [OR=2.55; 95 percent CI: (1.34 - 4.83)]. Attendance at a tertiary facility for antenatal care [OR=0.19; 95 percent CI: (0.09 - 0.37)], Increased awareness of pregnancy-related problems [OR=0.47; 95 percent CI: (0.24 - 0.94)] were protective factors. Stillbirth was the most important negative perinatal outcome linked to near-miss incidents. [OR=5.4; 95 percent CI (2.17 - 13.4)].[10,18]

A different study by Oliveira LC et al.[11,19] produced similar results, identifying 255 instances of maternal near-miss and a ratio of 12.8 maternal near-misses per 1,000 live deliveries. These women had a 43.2 percent literacy rate, a 44.7 percent

Table 2: ASSOCIATION OF NEAR MISS WITH OTHER INDEPENDENT VARIABLES

Variable	NEAR MISS	≤ 37 weeks	> 37 weeks	P value
Peroid Of Gestation	Yes	28	21	0.80
	No	320	242	
Near Miss With Respect To Parity Distribution	Near Miss	Primi para	Multi para	0.98
	Yes	19	30	
	No	219	343	
Near Miss With Respect To Gravidity Distribution	Near Miss	Primi Gravida	Multi Gravida	0.96
	Yes	18	31	
	No	208	354	

primiparity rate, and a 20.5 percent prior caesarean section rate. When it came to specific diagnoses, hypertension diseases were the most prevalent (62.7%), and HELLP (hemolysis, high liver enzymes, and low platelets) syndrome frequently made them more complicated (41.2 percent). Because of the high frequency of acute thrombocytopenia, the laboratory near miss criteria were the most frequently observed (59.6 percent) (32.5 percent).

Similar results were obtained in a different study by Naderi T et al.[12] where there were 501 near misses out of 19,908 live births (a near miss ratio of 25.2 per 1000 live births)[12,20].

The referral hospital's near-miss ratio was the highest (104.8 in 1000). Compared to the control group's average age of 26.05.8, near-miss cases had a mean age of 28.36.1 years.(< 0.001). Women who were near misses were more likely to have a university education. In the near-miss group, 208 women (41.5%) were first-time mothers, compared to 225 in the control group. (45.2 %;0.243). The near-miss group had an abortion rate of 18.6%, while the control group had a rate of 1.60% (<0.001). In the near miss and control groups, there were 24.7 percent and 54.2 percent, respectively, caesarean sections. (<0.001).

CONCLUSION

In this study we concludes that the frequency of near-miss was 8% among patients admitted during pregnancy till postpartum period in Obstetrical & Gynecology unit of LRH.

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