Original Article

The Outcome of Women with Severe Acute Maternal Morbidity (Near Miss) Attending Tertiary Care Hospital

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Abstract

Objective: To determine the outcome of women with severe acute maternal morbidity (Near miss) attending tertiary care hospital.

Methodology: This case series study was conducted during six months at the Department of Obstetrics and Gynecology, Abbasi Shaheed Hospital, Karachi. All the women with alive singleton pregnancy presenting with severe acute maternal morbidity, gestational age more > 20th week to 42nd week confirmed by earlier ultrasound scan with maternal age up to 45 years were included in the study. Each patient was identified on the basis of the severity of the disease. The required routine laboratory investigations were carried out. The women were continuously followed for seven days and the outcome was looked for by the researcher. At the time of delivery birth was measured as LBW, still birth and postpartum hospital stay. All the data regarding outcome was entered in the proforma.

Result: Total 115 women presented with severe acute maternal morbidity (Near miss), were studied their mean age was 27.12±4.03 years. Mean gestational age was 35.88±3.46 weeks. Among maternal morbidities (near miss), hypertensive disorder was the most common 28.7%, severe anemia 17.4%, dystocia 10.4%, sepsis and postpartum haemorrhage 11(9.6%) respectively. According to the outcome, 20.9% women died. Still born rate was 15(13.0%), low birth weight was 14(12.2%) and IUD 05(04.3%). Hospital stays more than 7 days was found in most of the cases as 35(30.4%).

Conclusion: It was concluded that severe acute maternal morbidity significantly impacted on feto-maternal outcome. Hypertensive disorder, severe anemia, dystocia and PPH were the most common morbidities and fetomaternal mortality rate was high.

Key words: Severe acute maternal morbidity,

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Introduction

A maternal near miss is an episode that drives pregnant female near to maternal mortality. Pregnant females are threatened by obstetrical complications, in addition, the majority of these take place in the course of delivery and labour that cause maternal mortality.[1] Maternal death is excessively high. Around 830 females died from childbirth-associated complications or pregnancy, worldwide nearly every day.[2] It was projected that during 2015, around 303000 females died during the pregnancy and after childbirth.[2,3] Nearly all of these demises took place within low-resource backgrounds, and majority of these could be avoided. Poor females in distant regions are least liable to receive sufficient healthcare. Data from the World

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Health Organization (WHO) indicated that it is most common in many low- and middle-income countries (LMICs), especially in sub-Saharan Africa.[4] Though maternal mortality can be prevented if a few of the eminent and effective interventions are made accessible to females, it is necessary to differentiate the influence of those different public health and clinical interventions in different contexts for understanding the best way to deliver those as well as to address obstacles to implementation.[5-7] Every year in Pakistan around 5 million females get pregnant, and 15% of all of those pregnant females are likely to undergo certain medical and obstetrical complications. 20% deaths of adult females are due to maternal factors (complications in the course of pregnancy, childbirth, and up to 6 weeks post birth), with most women aged >40 and <20 dying due to pregnancy associated issues.[8,9] Majority of these life losses took place in low-income nations, and around 88% to 98% of these maternal mortalities could be avoided by proper care and handling in the course of labor and pregnancy.[10,11] Antenatal care implies to pregnancy-associated care, which can be offered by a doctor, an assisting nurse midwife, or other healthcare professionals. Women can access Antenatal care services either by visiting a healthcare center where such services are provided or from home visits by health care workers.[2] Unlike developed nations, within Pakistan there is inadequate practice with the near-miss reviews' utilization as a monitoring tool of quality facilities for maternity within underdeveloped nations. Near-miss episodes are demarcated as acute obstetrics complication that instantly threaten a female's survival however do not cause her mortality either accidentally or due to hospital care that she gets in the course of labor, pregnancy or during 6 weeks following termination of pregnancy/delivery.[12] Morbidity in the course of pregnancy denotes part of a variety amid extremes of death and good health. A case of near-miss is a female with minimum one event of near-miss. Near-miss cases take place further frequently than maternal mortalities and can possibly generate further data because the female herself could be a source of data. As soon as the maternal morbidity leads to maternal death, the systematic recognition and the investigation of near-miss cases help in further comprehending the factors of maternal deaths.[12,13] The examination of maternal near miss and severe maternal morbidity and correlated risk factors are essential for the worldwide reduction in maternal mortality. Thus, this study has been conducted to assess outcome of females with severe acute maternal morbidity (Near miss) attending tertiary care hospital.

Methodology

It was case series study conducted with six months duration from October-April 2012-2013 at Department of Obstetrics and Gynecology, Abbasi Shaheed Hospital, Karachi. Each patient was identified on the basis of severity of disease e.g. Eclampsia, DIC, Severe shock, severe sepsis, PPH etc. All the women with alive singleton pregnancy presenting with severe acute maternal morbidity, gestational age more > 20th week to 42nd week confirmed by earlier ultrasound scan and maternal age up to 45 years were included in the study. All the non-consenting women were excluded from study. Informed consent was taken from the patient for management and inclusion in the studying ensuring confidentiality. The management was carried out at the discretion of consultant having > 5 years' experience in the field of Obstetrics and Gynecology. All the required laboratory investigations were carried out including LFT'S and urine D/R to assess the hepatic function and urinary protein. The women were continuously followed for seven days and outcome was looked for by the researcher. At the time of delivery, outcome was measured and defined as maternal mortality, DIC, low birth weight, intrauterine death, still birth and postpartum hospital stay etc. All the data was entered in the proforma. Data analysis was done by SPSS 20.0.

Results

Total 115 women who presented with severe acute maternal morbidity (Near miss) were selected; their mean age was 27.12±4.03 years (ranging from 18 to 38) years. Among 115 patients, 17(14.8%) were with age group 18-23 years, 46(40%) between 24-28 years, 46 (40%) between 29-33 years and 6 (5.2%) women were with age group of 34-38 years. Mean gestational age was 35.88±3.46 weeks (ranging from 20 to 40). (Table I) Majority of the women 81.7% had gestational age 34-40 weeks, followed by 19 (16.5%) had gestational age between 27-33 weeks and 2(1.7%) were presented with gestational age between 20-26 weeks. Most of the cases 61.7% were from rural areas and 28.3% from urban areas. (Table no I).

According to the maternal morbidities (near miss), hypertensive disorder was the most common among 33(28.7%) of the patients. Severe anemia was noted among 20(17.45) of the cases, dystocia was found in

12(10.4%) of the cases, sepsis and postpartum haemorrhage were occurred among 11(9.6%) women respectively, followed by multiple organ failure, pre-mature rupture of membrane and uterine rupture were found with percentage of 4.3%, 6.1% and 5.2% respectively, while 10(8.7%) of the women were found with more than one morbidity. (Table II)

Table I: Age and gestational age of women (n= 115)		
Age group	**Frequency**	**Percentage**
18-23 years	17	14.8
24-28 years	46	40.0
29-33 years	46	40.0
34-38 years	6	5.2
Gestational age		
20-26 weeks	2	1.7
27-33 weeks	19	16.5
34-40 weeks	94	81.7
Residential status		
Rural	71	61.7%
Urban	44	28.3%

Mean age (mean±SD) = 27.12±4.03 years
Mean gestational age (mean±SD) = 35.88±3.46 weeks

Table No II: Cases distribution according to maternal morbidities (n=115)		
Morbidities	Frequency	Percentage
Hypertensive disorder	33	28.7%
Severe anemia	20	17.4%
Dystocia	12	10.4%
Sepsis	11	9.6%
Postpartum haemorrhage	11	9.6%
Multiple organ failure	05	4.3%
Pre-mature rupture of membrane	07	6.1%
Uterine rupture	06	5.2%
Others (more than one morbidity)	10	8.7%
Total	115	100.0%

According to the outcome of women with severe acute maternal morbidity, 24(20.9%) women died out of total 115 cases. Still born rate was 15(13.0%), low birth weight was 14(12.2%), IUD was 05(04.3%) and DIC was occurred only in 2 cases. Hospital stay more than 7 days was found in most of the cases as 35(30.4%). Figure no 1.

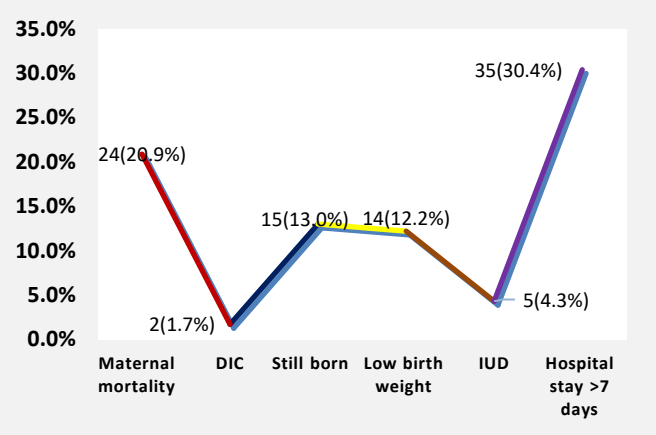

Fig. no 1. Patient's distribution according to outcome (n=115)

Discussion

A near miss mother is distinguished when female develops ≥1 sign(s) of organ dysfunctions as defined by management, laboratory, or clinical criteria.[14] In our study, women who presented with near miss, the mean age was 27.12±4.03 (ranging from 18 to 38) years. Among 115 patients most of the women were found with 24-28 years and 29-33 years age groups. In comparison to our study, similar results were seen in the study conducted by Pandey et al, [15] who reported that majority of the patients (88.3%) were between 18-35 years of age while Singh Abha et al[16] reported that 21-30 years was the most common age group in their study. Similarly, Rathod et al[17] have reported 21.75 years of mean age of the cases in their study. Another study from Myanmar also reported that the most of females with near miss morbidity varied from 30 to 34 years and 35 to 39 years.[18] The study conducted by Goffman D et al [19] reported that few risk factors can be adjusted via medical care.

In this study according to the maternal morbidities (near miss), the hypertensive disorder was the most common among 33(28.7%) of the patients. Severe anemia was noted among 20(17.4%) of the cases, dystocia was found in 12(10.4%) of the cases, sepsis and postpartum haemorrhage were occurred among 11(9.6%) women respectively, followed by multiple organ failure, pre-mature rupture of membrane and uterine rupture were found with percentage of 4.3%, 6.1% and 5.2% respectively, while 10(8.7%) of the women were found with more than one morbidity. A similar study of Bibi S et al[21] reported that the commonest life threatening factors were postpartum hemorrhage 50%, pre-eclampsia and eclampsia 30% and sepsis 14%. Anemia was among 100% of cases. The perinatal death rate was 27.2% and maternal

mortality rate was 4.8%. According to these findings, hypertension and anemia were higher as compared to this study and this may be because in our study only severe anemia was selected. In another study of Bibi S et al[26] hypertensive disorders of pregnancy (50%) and sepsis (17%) were the two main obstetrical conditions responsible for maternal illness. A systematic review of WHO on the global factors of maternal mortalities established obstetric hemorrhage as a leading factor, with PPH representing 2/3rd of all such deaths.[22] Childbirth and pregnancy associated complications are also the major factors of mortality and morbidity in females of reproductive age within underdeveloped nations. Even highly expert obstetricians can be unable to deal with females in dire conditions of life and death in case of no approach to life saving medications and services of secure blood transfusions. This can occur yet among the highly equipped hospitals within the most important cities of Pakistan. Most of the deliveries take place at homes by "dais" or customary birth attendants. Although, this can possibly be shifting as more and more females prefer to go to maternity homes or hospitals for their deliveries. Another Study conducted by Kasahun et al[23] also reported that the majority of the near miss cases were with dystocia (57.1%) and obstetric hemorrhage (26%). Obstetric shock due to hemorrhage was another commonest severe maternal morbidity in the study. There are the similar prevalence of hemorrhage correlated near misses in Turkey and Brazil.[24,25]

In this study still born rate was 15(13.0%), low birth weight was 14(12.2%) and IUD was 05(04.3%). In comparison to this study Bibi S et al[26] reported that foetal mortality rate was 43% including 12 cases of IUD. Similarly, in a study conducted by Manandhar SR et al[27] Low birth weight prevalence was 21% among the cases of near miss. Neonatal near miss played a part in likely severe infection/ severe bacterial infection 47%, birth asphyxia and very low birth weight among 43% cases. Stillbirths and neonatal deaths are caused by poor maternal well-being, insufficient care in the course of pregnancy, inappropriate administration of complications in the course of delivery and pregnancy, poor hygiene in the course of delivery and the initial critical hours following birth, and insufficient newborn care. A number of factors for instance status of females in society, their status of nutrition at conception, several closely spaced pregnancies, early childbearing, and harmful practices, for example insufficient cord care and allowing the baby stay cold and wet are deep-rooted in the cultures of societies and interrelate in ways that are not always evidently understood. In this study maternal mortality was 20.9%. On other hand, Bibi S et al[26] reported higher maternal mortality rate as 33%. While comparable maternal death rate as 25% was found in as Indian study.[28] Pandey et al,[15] reported that mortality was higher among liver disorders 51.9 %, respiratory illness 46.2 %, and due to sepsis 36.5%. These findings also showed higher mortality rate, while in our study mortality rate was also higher among patients with multiple organ failure, sepsis and hypertensive disorder. Mostly cases referred from local health facilities and home after induction at home by unskilled and unqualified practitioners, where induction is given without proper investigations. Therefore, the main contributing factors were poor clinical skills and competency of health care providers along with delay in reaching hospital.[29]

Conclusion

It was concluded that severe acute maternal morbidity significantly effected on foeto-maternal outcome. Hypertensive disorder, severe anemia, dystocia and PPH were most common morbidities and fetomaternal mortality rate was high. Most of the women were from rural areas and presented with poor socioeconomic status, so this could be a major reason for their survival as it reduced the time taken to reach the facility. Mostly patients who developed complications were non-booked. Lack of antenatal care was a vital avoidable factor among our near miss patients. Factors in the community like delay in decision-making and lack of transport can increase the severity of the illness and even lead to death. Presence of fully equipped and well-organized intensive care facilities can play an important role in reducing maternal mortality.

References

1. Noor S, Hoque AE, Alam K, Uddin N. Maternal Near Miss: A Case Report. Chattagram Maa-O-Shishu Hospital Medical College Journal.2015;14(1):67-70.
2. Singh P, Gupta RK, Kumari R, Langer B, Gupta C, Gupta R. Antenatal care utilization in recently delivered rural females: A hospital-based crosssectional study. Int J Med Sci Public Health 2018;7(5):349-353.
3. WHO. Maternal mortality. Available from: http://www.who.int/mediacentre/factsheets/fs348/en.
4. World Health Organization, United Nations Children's Fund, United Nations Population Fund, The World Bank (2010) Trends in maternal mortality: 1990–2008. Geneva: World Health
5. Chapman E, Reveiz L, Sangalang S, Manu C, Bonfill X, Munoz S, Abalos E. A survey study identified global research priorities for decreasing maternal mortality. Journal of clinical epidemiology. 2014;67(3):314-24.

6. Shennan AH, Redman C, Cooper C, Milne F. Are most maternal deaths from pre-eclampsia avoidable? Lancet 2012;379:1686e7
7. Khan K, Wojdyla D, Say L, G€ulmezoglu A, Van Look P. WHO analysis of causes of maternal death: a systematic review. Lancet 2006; 367:1066e74.
8. PDHS, National Institute of Population Studies and Demographic and Health Surveys. Pakistan Demographic and Health Survey. 2006–2007
9. Khan YP, Bhutta SZ, Munim S, Bhutta ZA. Maternal health and survival in Pakistan: issues and options. Journal of obstetrics and gynaecology canada. 2009;31(10):920-9.
10. Alkema L, Chou D, Hogan D, Zhang S, Moller AB, Gemmill A, et al. Global, regional, and national levels and trends in maternal mortality between 1990 and 2015, with scenariobased projections to 2030: A systematic analysis by the UN maternal mortality estimation inter-agency group. Lancet 2016;387:462-74.
11. World Health Organization Antenatal Care 2015. Available from: http://www.who.int/gho/maternal_health/reproductive_health/antenatal_care_text/en.
12. Mustafa R, Hashmi H. Near-miss obstetrical events and maternal deaths. J Coll Physicians Surg Pak. 2009;19(12):781-5.
13. Pattinson RC, Hall M. Near-misses: a useful adjunct to maternal death enquiries. Br Med Bull 2003; 67:231-43
14. Say L, Souza JP, Pattinson RC. Maternal near miss - towards a standard tool for monitoring quality of maternal health care. Best Pract Res Clin Obstet Gynaecol. 2009;23:287–96.
15. Pandey A, Das V, Agarwal A, Agrawal S, Misra D, Jaiswal N. Evaluation of obstetric near miss and maternal deaths in a tertiary care hospital in north India: shifting focus from mortality to morbidity. IJOG 2014;64(6):394-399.
16. Abha S, Chandrashekhar S, Sonal D. Maternal Near Miss: A Valuable Contribution in Maternal Care. JOGI 2016;66(Suppl 1):217-22.
17. Rathod AD, Chavan RP, Bhagat V, Pajai S, Padmawar A, Thool P. Analysis of near-miss and maternal mortality at tertiary referral centre of rural India. JOGI 2016;66:295-300.
18. Win T V P, Vong-ek P. Three delays related to maternal mortaity in Myanmar: a case study from maternal death review. J Health Res. 2015;29(3):179–87.
19. Goffman D, Madden RC, Harrison EA, Merkatz IR, Chazotte C. Predictors of maternal mortality and near-miss maternal morbidity. Journal of Perinatology. 2007 Oct;27(10):597.
20. Rööst M, Altamirano VC, Liljestrand J, Essén B. Priorities in emergency obstetric care in Bolivia—maternal mortality and near-miss morbidity in metropolitan La Paz. BJOG: An International Journal of Obstetrics and Gynaecology. 2009;116(9):1210-7.
21. Bibi S, Ghaffar S, Memon S, Memon S. Severe acute maternal morbidity (SAMM) in postpartum period requiring tertiary Hospital careIran J Reprod Med 2012 Mar;10(2):87
22. Say L, Chou D, Genmill A, et al. Global causes of maternal death: A WHO systematic analysis. Lancet Glob Health. 2014;2:e323–e333.
23. Kasahun AW, Wako WG. Predictors of maternal near miss among women admitted in Gurage zone hospitals, South Ethiopia, 2017: a case control study. BMC pregnancy and childbirth. 2018;18(1):260.
24. Cecatti JG, Souza RT, Pacagnella RC, Leal MC, Moura EC, Santos LMP. Maternal near miss among women using the public health system in the Amazon and northeast regions of Brazil. Pan Am J Public Health. 2015;37(4):232–8.
25. Madeiro AP, Rufino AC, Lacerda EZG, Brazil LG. Incidence and determinants of severe maternal morbidity: a transversal study in a referral hospital in Teresina, Piaui, Brazil. BMC Pregnancy and Childbirth. 2015;15:210.
26. Bibi S, Memon A, Sheikh JM, Qureshi AH. Severe acute maternal morbidity and intensive care in a public sector university hospital of Pakistan. J Ayub Med Coll Abbottabad. 2008 Jan;20(1):109-2.
27. Manandhar SR, Manandhar DS, Adhikari D, Shrestha JR, Rai C, Rana H, Paudel M. Neonatal near miss cases of different health facilities. Journal of Nepal Paediatric Society. 2014 May 1;34(2):115-8.
28. Munnar U, Karnad DR, Bandi VDP, Lapsia V, Suresh MS, Ramshesh P. Critically ill Obstetrics patients in an American and an Indian public hospital: Comparison of case mix, organ dysfunction, Intensive care requirements, and outcomes. Intensive Care Med 2005;31:1087–94.
29. Ansari A, Zubair UB, Parveen S, Tasleem G. Near miss obstetric events as a reflection of quality of maternal health care. Pakistan Armed Forces Medical Journal. 2016Feb 1(1):98.