

A Prospective Study on Severe Acute Maternal Morbidity in Patients Attending Sultania Zanana Hospital, Bhopal

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Abstract

Aim: The aim of this study is to Study on Severe Acute Maternal Morbidity in patients attending Sultania Zanana Hospital, Bhopal.

Study Design: Observational Study.

Result: Among all the cases of SAMM maximum 66.2% were in the age group 20-30 yrs. This is due to the fact that 20-30 yrs is the most fertile period of a woman's life. Maximum cases i.e. 95.96% were unbooked emergencies. The strong positive association between level antenatal care obtained during pregnancy and degree of severe acute maternal morbidity. Primigravidas were 25.8%, 61.29% were multiparas, and 21.9% were grandmultiparas. Hemorrhage was the leading cause of severe acute maternal morbidity in our setting accounting for 62.9% of the cases, followed by hypertensive disorders of pregnancy representing 20.16% of total cases.

Conclusion: The most common reason for SAMM was Hemorrhage of which ruptured ectopic pregnancy emerged out to be the commonest obstetric factor followed by eclampsia among hypertensive disorders of pregnancy. Reduction of maternal deaths in this centre therefore requires channeling of resources towards the prevention of hemorrhage & hypertensive disorders at the lower level of health care system while strengthening the resources for their treatment in the tertiary care hospital. This implies maintaining & improving the existing preventive measures & treatment strategies for

early identification of ectopic pregnancy, for eg use of transvaginal sonography & improving the protocols & resources for managing it. Necessary facilities should be made available and training of doctors in both basic and emergency obstetric care should be frequently conducted to combat the identified disease processes that received suboptimal care during pregnancy.

Keywords: Acute Maternal; Morbidity & Mortality.

Introduction

Despite therapeutic advances during this century and a growing perception of the safety of child birth, morbidity and mortality continue to occur in obstetric patients [1]. More than one woman dies every ten minute from various causes [2]. In addition to maternal death, women experience more than 50 million maternal health problems annually [3]. As many as 300 million women-more than one quarter of all the adult women living in the developing world currently suffer from short or long term illness and injuries related to pregnancy and child birth. Yet relatively little attention has been given to identifying a general category of morbidity that could be called severe acute maternal morbidity [4].

According to WHO, Safe motherhood is a multifaceted model [5]. It includes safe and healthy

woman throughout her pregnancy and childbirth, providing with high quality maternal health services for women of all economic and social backgrounds. Maternal mortality is the outcome indicator traditionally used in safe motherhood. It is the most devastating outcome, representing a huge burden of the disease on the woman's family, health and society. For every woman who dies, many suffer serious life threatening complications of pregnancy. So, isolated enquiry into maternal death is unlikely to yield adequate information about the hospital care.

There are several advantages of investigating events of acute severe maternal morbidity over events with fatal outcome:

They are more common than maternal deaths investigating the care received may be less threatening to providers because the woman survived. One can learn from the women themselves since they can be interviewed about the care they received these are free lessons and opportunities to improve the quality of service provision [6].

Materials & Methods

A prospective study was conducted in the Department of Obstetrics and Gynaecology, Sultania Zanana Hospital & Gandhi Medical College, Bhopal over a period of 01 year between March 2014 and March 2015.

Number of Patients

All patients admitted in the Department Of Obstetrics and Gynaecology, Sultania Zanana Hospital, Gandhi Medical College, Bhopal with severe acute maternal morbidity or who suffered from an adverse event of acute severe maternal morbidity after their admission in the hospital during the study duration.

For each case, data was collected on socio-demographic characters including age, socioeconomic status, admission type, parity, status at admission, booking status, nature of obstetric complication responsible, system involved, factors responsible for causing severe acute maternal morbidity. Major determinant of SAMM was analyzed.

Inclusion Criteria

Women who fit into the "Comprehensive

criteria" taking into consideration symptoms and signs of a disease, investigations and management done for various complications were included.

Exclusion Criteria

Cases that died during the study duration.

Results

Table 1: Age Distribution

Age Group	Number	Percentage (%)
< 20 years	06	4.80
20-30 years	82	66.2
31-40 years	32	25.8
>40 years	04	3.22
Total	124	100

Among all the cases of SAMM maximum 66.2% were in the age group 20-30 yrs. This is due to the fact that 20-30 yrs is the most fertile period of a woman's life (Table 1).

Table 2: Socio Economic Status

Class	Number	Percentage (%)
Upper	00	00
Upper Middle	07	5.64
Middle	14	11.29
Upper Lower	51	41.12
Lower	52	41.93
Total	124	100

Majority of cases belong to lower and upper lower income group. Socioeconomic status underlies three major determinants of health: health care, environmental exposure, and health behavior. In addition, chronic stress associated with lower socioeconomic status may also increase morbidity and mortality. Poor nutrition, low immunity, unhygienic environment and lack of timely access to medical care services make these women more prone to complications. Socioeconomic status is the central determinant of disparities in health (Table 2).

Table 3: Admission Type

Admission Type	Number	Percentage (%)
Admitted as Severe Maternal Morbidity	11	8.87
Referred as Severe Acute Maternal Morbidity	98	79.03
Admitted with no disorder and became SAMM case	03	2.41
Admitted with disorder and became SAMM case	12	9.67
Total	124	100

Most of the SAMM cases i.e. 79.03% were referred

to SZH. Since SZH is a tertiary care centre so many patients are referred to this hospital in morbid conditions from the hospitals in the city as well as from distant rural places (Table 3).

Table 4: Status at Admission

Status	Number	Percentage (%)
Antenatal	58	46.77
Intranatal	40	32.25
Postnatal	26	20.96
Total	124	100

Most of the patients were in the Antenatal and Intranatal periods representing 46.77% and 32.25% respectively (Table 4).

Table 5: Booking Status at SZH

Age Group	Number	Percentage (%)
Booked	05	4.04
Unbooked	119	95.96
Total	124	100

Maximum cases i.e. 95.96% were unbooked emergencies. Thus a strong positive association between poor antenatal care obtained during pregnancy and degree of severe acute maternal morbidity (Table 5).

Table 6: Parity

Age Group	Number	Percentage (%)
Parity	32	25.8
Multi	76	61.29
Grandmulti	16	12.9
Total	124	100

Primigravidas were 25.8%, 61.29% were multiparas, and 21.9% were grandmultiparas. Therefore woman with increasing parity has increased risk of SAMM (Table 6).

Table 7: Underlying Disorder / reasons for Severe Acute Maternal Morbidity

Reason for SAMM	Number	Percentage (%)
Hemorrhage	78	62.90
Hypertensive disorders	25	20.16
Labour related disorders	11	8.87
Infections	06	4.83
Medical disorders	05	4.03
Total	124	100

Hemorrhage was the leading cause of severe acute maternal morbidity in our setting accounting for 62.9% of the cases, followed by hypertensive

disorders of pregnancy representing 20.16% of total cases (Table 7).

Discussion

The study shows that severe acute maternal morbidities occur in a considerable percentage of women managed in this obstetric unit. Studies in developed countries like USA and Europe commonly use ICU admission or organ-system function/failure as their criteria for case selection. Though organ-system based criteria was regarded as the most specific and least vulnerable to bias up till now, we adopted a comprehensive criterion that best identifies all the possible cases of SAMM with least chances of any kinds of errors or any bias in all the circumstances and environment to allow local improvement in services and comparison of studies in various settings.

Most of the SAMM Cases i.e. 66.2% cases in present study were in 20-30 years age up, which is comparable to studies of Geller *et al.* [7] i.e. 41.9% and Stones *et al.* [8] reporting an incidence of 52.2% cases in the age group of 21-30 yrs. 20-30 yrs age group is considered as the most fertile period of women’s reproductive life. And this may also be due to trend of early marriage and early conception in our country.

Multiparas were 61.29%, primigravidas were 25.8% and 12.9% cases were grandmultipara. In contrast to this Geller *et al.* [7] in their study reported that 66.1% cases were multipara whereas 33.9% patients were primigravida. Pragati *et al.* [9] in their study showed 53.6% cases were multipara, 35.5% cases were primigravida and 10.9% patients were grand multipara.

In present study hemorrhage was identified as the most important SAMM accounting for 62.9% of all the cases with greater prevalence in multiparas as compared to primigravida. 20.16% cases had hypertensive disorder of pregnancy. These findings are consistent with the studies by Mjahed *et al.* [10] where major obstetric hemorrhage accounted for 50% of adverse events and Suleiman A *et al.* [11] where obstetric hemorrhage was the leading cause of severe acute maternal morbidity accounting for 32.8% of the cases and 17.2% cases were due to hypertensive disorders pregnancy.

This is in contrast to various studies where hypertensive disorders were the main cause of severe acute maternal morbidity. Geller *et al.* [7] reported hypertensive disorders of pregnancy as

the main reason for severe morbidity accounting for 46% cases. Eclampsia was found as the leading cause for maternal morbidity accounting for 70.6% cases in the study by Mjahed K *et al.* [10]. Study by Bibi *et al.* [12] attributed 50% of the causes of severe maternal morbidity due to hypertension in pregnancy. Stones *et al.* [8] reported hypertensive disorders and hemorrhage to be equally responsible for severe acute maternal morbidity accounting for 26% and 36% cases each respectively. 4.03% cases were due to other medical disorders like anemia, hepatic encephalopathy, CCF due to heart disease and diabetic ketoacidosis.

Conclusion

The most common reason for SAMM was Hemorrhage of which ruptured ectopic pregnancy emerged out to be the commonest obstetric factor followed by eclampsia among hypertensive disorders of pregnancy.

Reduction of maternal deaths in this centre therefore requires channeling of resources towards the prevention of hemorrhage & hypertensive disorders at the lower level of health care system while strengthening the resources for their treatment in the tertiary care hospital.

This implies maintaining & improving the existing preventive measures & treatment strategies for early identification of ectopic pregnancy, for eg use of transvaginal sonography & improving the protocols & resources for managing it.

Necessary facilities should be made available and training of doctors in both basic and emergency obstetric care should be frequently conducted to combat the identified disease processes that received suboptimal care during pregnancy.

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