ORIGINAL ARTICLE

Maternal Mortality – A Challenge?

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Abstract:

Background : The current maternal mortality rate (MMR) in Maharashtra is 104/100000 live births, ranking 3rd in India. There is scope for reducing it as mejority of the causes of MMR are preventable and curable.

Aims and Objectives: To study the socio-demographic profile and causes of maternal deaths at Dr. V. M. Govt. Medical College, Solapur. *Material and Methods:* The study population included all deliveries i.e. women admitted in the hospital during pregnancy, childbirth or within 42 days of termination of pregnancy from any cause related to or aggravated due to pregnancy during the period of 2 years from 1st August 2009 to 31st July 2011. IPD case records and autopsy reports of all maternal deaths were taken and various variables were studied. The present study is prospective study of maternal mortality conducted in Dept. of Obstetrics and Gynaecology, Dr. V. M. Medical College Solapur. Cases were distributed according to their age, literacy rate, residence, socioeconomic status, ante-natal care, gestational age, gravida/parity, place of referral, pregnancy outcome, and place of delivery, perinatal outcome and etiological factors. This study also suggests the measures to reduce maternal mortality. *Results:* The total number of live births during the study period were 13,188 and total number of maternal deaths were 63 and MMR was 477 per 1, 00,000 live births. In the maternal deaths studied, 1/3rd of the women were illiterate, half of the women belonged to urban slum areas and of lower socio-economic class. 1/3rd of the deaths occurred in *primi gravida*, within 24 hrs from admission, 58.73% of the patients were referred from outside. Out of that 86.49% of women were sent from private hospital and died in post partum period, having poor perinatal outcome. Haemorrhage (28.57%) and hypertension (12.69%) are two direct causes and severe anemia (33.33%) is most common indirect cause of maternal death in our study.

Key words: maternal mortality, MMR, direct obstetric cause, indirect obstetric cause.

Introduction:

Maternal death is defined as a death of a woman while pregnant or within 42 days of termination of pregnancy from causes related to or aggravated by pregnancy or its management but not from accidental or incidental causes [1]. Late maternal death is defined as a death of a woman from direct or indirect obstetric causes more than 42 days but less than one year after termination of pregnancy. Reducing the maternal mortality rate upto 109 by 2015 is one of the eight priorities of Millennium Development Goals set by Member States of the United Nations. A woman dies as a result of complication arising during pregnancy and childbirth every 90 seconds in the world, and every 7 minutes in India. The majority of these deaths are avoidable. At current rate of decline, predicted MMR for 2015 is 149. The current MMR of Maharashtra is 104 (Ranking 3rd in India).

Despite the recent medical advances, nearly 3,58,000 women die of pregnancy and it complications every year all over the world [2]. Asia is accounted for 1,39,000 maternal deaths annually [3]. MMR in India is 254 as against only 12 in UK. The medical causes of maternal deaths are similar throughout the world. Nearly all (99%) maternal deaths take place in developing world with India and Nigeria together accounting for one third of these deaths. This high MMR is due to the preventable maternal deaths in our country. Within India also, MMR varies significantly being the lowest of 95 in Kerala, 240 in Delhi, and the highest 480 in Bihar/Jharkhand [2].

Material and Methods:

The present study is a prospective study of maternal mortality conducted at our hospital, Dr. V. M. Govt. Medical College, Solapur, (Maharashtra), India. The study population included all deliveries at our hospital during the period of 2 years from 1st August 2009 to 31st July 2011. Data was collected as per the prescribed proforma from the hospital records. Information of all maternal deaths was recorded in details. Autopsy findings were collected from respective autopsy reports from Department of Pathology and correlated.

Results and Discussion:

In the present study of the maternal deaths most of the patients have been illiterate belonging to urban slum areas and lower socio-economic class. Thus illiteracy, lack of knowledge about health facilities, poor health seeking behaviour of patients & inaccessibility of health care facilities in rural areas play an important role in maternal deaths. Most of the deaths have occurred in

Table 1 - Observation Tables of Maternal Deaths

Variables		Number of maternal deaths (Total=63)	Percentage
Age (years)	<19	5	7.94%
	20-24	28	44.44%
	25-29	19	30.16%
	>30	11	17.46%
Literacy	Illiterate	25	39.68%
	Primary school	17	26.98%
	High school	13	20.63%
	Pre university	5	5.793%
	Graduate	3	4.76%
Place of residence	Urban	39	61.9%
	Rural	24	38.09%
Socio-economic status	Lower Lower	16	25.40%
	Upper lower	29	46.03%
	Lower middle	9	14.29%
	Upper middle	9	14.29%
Antenatal supervision	Booked	47	74.60%
	Unbooked	16	25.40%
Gestational age	<28	11	17.46%
	28-32	02	3.17%
	32-37	20	31.75%
	37-41	24	38.10%
	>41	06	9.50%
Gravidal parity status	1	29	46.03%
	2	14	22.22%
	3	16	29.40%
	4 and above	4	6.39%
Admission Death interval	<6	4	6.34%
	7-24	25	39.68%
	25-48	9	14.28%
	49-72	5	7.93%
	>72	20	31.74%
Referral	Referred	37	58.73%
	Not referred	26	41.26%
Place of referral	PHC	3	8.11%
	RH	2	5.40%
	Private hospital	32	86.49%
Pregnancy outcome	Delivered	51	80.95%
	Undelivered	11	17.46%
	Abortion	01	01.58%
Place of delivery	Home	1	1.96%
	PHC	1	1.96%
	Private hospital	13	25.49%
	Institute	35	68.62%
	Vehicle (during transportation)	1	1.96%
Mode of delivery	Vaginal	28	54.90%
	Caesarean section	23	45.09%
Neonatal outcome	Alive and well	23	44.23%
	Perinatal deaths	28	53.83%
	a) Stillbirth	25	
	b) Early neonatal death	03	

Table 2 - Distribution of Maternal Deaths or Pending on the Cause of Death.

Sr. No.	Cause of death	Number of maternal death	%
I	**Direct causes**	33	
1.	Hemorrhage	18	28.57
2.	Hypertensive disorder in pregnancy	8	12.69
3.	Sepsis	4	6.34
4.	Uterine inversion	1	1.58
5.	Obstructed labour	2	3.17
II	**Indirect causes**	51	
1.	Severe anemia	21	33.33
2.	Heart disease	11	17.46
3.	Liver disease	06	9.52
4.	Pulmonary disease	06	9.52
5.	CMS disease	03	4.76
6.	Acute renal failure	01	1.58
7.	Diabetic ketoacidosis	01	1.58
8.	Malaria	01	1.58
9.	Laryngospasm due to goiter	01	1.58

primi gravida within 24hrs of admission, have been referred from private hospitals and have died in post partum period having poor perinatal outcome. Hemorrhage and hypertension are two direct causes, and anemia is most common indirect cause of maternal death in our study. The MMR in present study has been 477 per 100000 live births. This is higher than the national average of 254 per 100000 live births [4]. This higher MMR could be because ours is a tertiary referral hospital where most high risk cases are referred and treated. Also, most patients have been referred from private nursing homes in a very critical condition after failure to deliver the woman.

In the present study, maximum number of maternal deaths (74.59%) are between twenty to thirty years of age which is comparable to studies Dilpreet Kaur et al [5]. In our study maximum women are illiterate i.e. 39.68% comparable to studies by Surendranath Panda et al [6]. In the present study, 61.90% of maternal deaths belong to urban slum areas which are comparable to studies by P Padmanabhan et al [7] and Amitav Pal et al [8]. This is due to migration of rural population to urban slums where they stay in extreme poverty and unhygienic conditions. 74.60% women in the present study are booked cases with irregular antenatal visits and are referred in critical condition. The present findings are comparable with study by L Aghoja [9]. In our study 46.03% women are *primi gravida*. Most Maternal deaths in our study have occurred within 24 hours of admission (46.02%). Almost half of the women who have died have had vaginal deliveries (54.90) comparable to studies by James P Thomson [10]. In the present study 60.32% maternal deaths could be autopsied. Maximum deaths have occurred due to hemorrhage i.e. 28.57%. In the present study 33.33% maternal deaths have occurred in severely anemic women which is comparable to studies by Dileep Mavalankar et al [11]. In the present study 48.08% have been associated with outcome of stillbirths. Similar causes could be responsible for both the stilibirths & maternal deaths.

There are some strategies to reduce the maternal mortality:

- ❖ Early registration of antenatal cases and improving nutritional status of women before and during pregnancy. Prevention and aggressive treatment of anemia is necessary.
- ❖ Rapid diagnosis and treatment of high risk cases.
- ❖ Facilities for hospital deliveries for all.
- ❖ Constructing well equipped health care facility with trained staff.
- ❖ Good health communication system.
- ❖ Availability of prompt transport facilities for early referral.
- ❖ Access to family planning and safe abortion services and improving awareness through local media.
- ❖ All FRUs made fully Functional for comprehensive emergency obstetric care services and availability of blood and blood products.
- ❖ Instituting integrated maternal health services with emphasis on primary health care and emergency obstetric care can achieve remarkable improvement in maternal and perinatal outcome.

The death of a woman during pregnancy or childbirth is not only a health issue but also a matter of social injustice.

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