

DETERMINATION OF MATERNAL MORTALITY AND ASSESSMENT OF PRIMARY AVOIDABLE FACTOR IN A INDUSTRIAL HOSPITAL

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SUMMARY

Paper analyses Maternal Mortality, its causes and preventable factors of Maternal mortality during a period of seven years from 1984-1990 with the idea to bring down the maternal mortality to the lowest target of MMR less than 1/1000 birth by 2000 A.D. These were 11,702 pregnancies recorded during this period with 14 maternal deaths forming a MMR of 119.6/1,00,000 total birth. In this study 57.14% of the maternal deaths were registered. Direct causes were responsible for 64.2%. Toxaemia was responsible for 21.42% death. Haemorrhage, sepsis and rupture uterus were responsible in 14.28% cases each. Indirect causes were responsible for 35.71% of death in the form of Heart disease 7.2%, Anaemia 21.42% and Tuberculosis 7.2%. Avoidable factors was found in 60% of cases. In 40% of the cases relatives and patients were responsible and 20% of the cases the Medical attendant.

INTRODUCTION

Maternal mortality is a vital index of the effectiveness of obstetrics services prevailing in a country. Although there has been a great fall in Maternal death rate over the past decades, unfortunately till date this is alarmingly high in our country 721/1,00,000 birth (Bhaskar Rao, 1980).

Object of this study is to critically analysis

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the Maternal death in our Hospital during 1984-90 with the idea to find out preventable factors of Maternal death, so as to enable us to bring down the maternal mortality to irreducible minimum. At least to lowest target of MMR less than 1/1000 birth by 2000 A.D.

MATERIAL AND METHOD

The present study was carried out in Indian Iron and Steel Company Hospital, Burnpur from 1984-1990. This is an Industrial Hospital which covers a population of 1.5 lakhs. A

thorough analysis of the individual case records of all mortality, was undertaken with respect to the following like age, parity, socio-economic status, cause of death and antenatal registration. Sincerest attempt was made to find out preventable factors by analysing causes of death critically.

OBSERVATION

During the span of seven years (84-90) 11,702 pregnancies were recorded. In this period, 14 mothers died giving a mortality rate of 119.6/1,00,000 total birth (Table I).

Analysis of Antenatal registration showed that 57.14% of the cases of maternal death were registered cases and 42.85% of the cases received no Antenatal care, (Table II). Parity varied from para one to para four. Age of the patient in the study varied from 19-40 years of age.

Analysing the causes of death critically, revealed that 64.2% of the maternal death were due to direct obstetrical cause and 35.71% were due to indirect causes. Sepsis was the cause of death in 14.28% of the cases. Both the cases were of post abortal sepsis following induced abortion outside Hospital. There were however no mortality in the cases undergoing termination in our Hospital. No Maternal

death due to sepsis following vaginal delivery or caesarean section was recorded in the present study. (Table III)

Eclampsia was responsible for 21.42% (2) of the Maternal death in our series. One died of Ante-partum Eclampsia and other due to Post-partum Eclampsia.

Haemorrhage is responsible for majority of the Maternal death in our country. In our study only 2 patients (14.28%) died of Haemorrhage. Rupture Uterus was the cause of death in two cases amounting to 14.28%. Both these cases were unregistered cases.

35.71% of the Maternal death were due to Indirect cause. One patient died due to Heart disease, one due to the Pulmonary tuberculosis and three due to Severe Anaemia (Table III).

60% of the deaths in our series were found to be avoidable. On critical analysis, it was found that in 40% of the cases patients and

Table II

Antenatal Registration

Our study	Ingles et al
57.14%	42.85%

Table I

Review of maternal mortality rates

Place	Year	MMR
1. Eden Hospital, Calcutta	1980	1100
2. Rajendra Medical College, Ranchi	1986	2700
3. FOGSI study	1982	721
4. Medical College Hospital, Indore	1983	850
5. K. E. M. Hospital, Bombay	1983	300
6. Kalpark Medical College Hospital, Madras	1983	300
7. Present study	1990	119.6

Table III
Causes of Maternal Death

	Present Series		National Figure in %
	Number	Percentage	
A. Direct Cause : (64.29%)			
1. Sepsis	2	12.68	28.4
2. Toxemia	3	21.42	5.15
3. Haemorrhage	2	14.28	22.3
4. Rupture Uterus	2	14.28	5.0
B. Associated Causes : (35.71%)		14.20	
1. Heart Diseases	1	7.2	
2. Anaemia	3	21.4	
3. Pulmonary Tuberculosis	1	7.2	

their relatives were responsible and 20% of the cases medical attendant were responsible for the death (Table IV).

Table IV

Avoidable Factors

Present Study	National Figure
60%	69%
Relative & Patient - 40%	
Medical Attendant - 20%	
6 Patients	

facilities, and above all sincere and dedicated services of the health worker.

57.14% of the cases of the maternal death were registered in comparison to 61.2% of the unregistered maternal death reported by Ingle et al (1989) Table II.

64.2% of the maternal death were due to direct obstetrics causes and 35.7% due to Indirect cause. The direct causes of the death were Sepsis Eclampsia, Haemorrhage and Rupture uterus. The incidence of mortality due to sepsis was 14.28% in our series which is quite low comparison to 28.69% reported by Bhaskar Rao et al (1980) and 26.16% by Lopez J. A. et al (1986). This is mainly because of low incidence of illegal abortion in our population. (Table III)

21.42% of the maternal death in our series was due to Eclampsia. This comparable to the incidence reported by Joyti Sinha et al (1986), 15.5% and Panat and Mahendale (1987), 16.7%. However low incidence 9.59% and 8.6% was reported by Rao (1980) and Devi and Singh (1987).

DISCUSSION

Analysing mortality rates reported by various authors from various parts of India (Table I) our mortality rate was found to be comparatively low 119/1,00,000 live birth. This is mainly because availability of the trained personnel, operation theatre, blood bank

Haemorrhage is one of the most important causes of maternal death in our country. In our study (14.28%) of maternal death was due to Haemorrhage which is comparatively lower than reported by Rao (1980) 31.53% and Devi Singh 35.2% (1987).

Death due to Rupture Uterus formed 20% of the maternal death in our series. This is quite high in comparison to incidence reported by Varawalla et al (1989). 4.4% and 5% reported by FOGSI Multicentric study. This may be due to small number of cases in our study. 35.71% of the maternal death in our series was due to indirect cause, which is comparable to Varawalla et al (1989) 26.7%. Multicentric study of FOGSI showed - 14.20% death due to indirect cause. 60% of the death in our series were found to avoidable compared to 69% reported by other Indian studies.

CONCLUSION

Although present study revealed that maternal mortality in our Hospital is quite low in comparison to other parts of our country but it is definitely clear that even now it is quite

high in comparison developed countries. This points out that there is no reason to be complascent. And our main aim should be to bring it down to irreducible minimum at least to less than 1/1000 birth by 2000 A.D. This is only possible by paying more attention to the avoidable factors, which is quite high (60%) and continuous, critical and detailed assessment of maternal deaths.

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Table IV

Avoidable Factors

National figure	Present Study
69%	60%
Relative to Patient - 40%	
Medical Attendant - 20%	
6 Patients	

DISCUSSION

Analyzing mortality rates reported by various authors from various parts of India (Table I) our mortality rate was found to be comparatively low (19.1/1000 live birth). This is mainly because availability of the trained personal, operation theatre, blood bank

Table II
 64.3% of the maternal death were due to indirect obstetric causes and 35.7% due to indirect cause. The direct causes of the death were Septic Eclampsia, Haemorrhage and Rupture uterus. The incidence of mortality due to indirect obstetric causes in our series which is quite low compared to 18.69% reported by Bhaskar Rao et al (1980) and 26.18% by Lopez J. A. et al (1986). This is mainly because of low incidence of illegal abortion in our population.
 (Table III)
 21.43% of the maternal death in our series was due to Eclampsia. This comparable to the incidence reported by Jyoti Singh et al (1982), 12.3% and Panat and Mahendale (1987), 16.7%. However low incidence 9.29% and 8.5% was reported by Rao (1980) and Devi and Singh (1987).