

Review of Maternal Mortality

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Summary:

An analysis of maternal mortality over a period of 6 years from 1992 to 1997 was carried out at Government General Hospital, Guntur and compared to the previous years (1987-1991). There were 20847 deliveries and 163 maternal deaths giving maternal mortality rate of 780/100000 live births. 74% were from rural area and 91% were unbooked. Direct Obstetric causes were observed in 66%, haemorrhage was observed in 27.50%. Indirect causes were 34% and viral hepatitis was the foremost killer (16.50%). 65% had vaginal delivery, 7% required C. Section, 5% had Laparotomy for ruptured uterus. 54.60% were antepartum and intrapartum deaths. 15.30% were undelivered and 62.60% died within 24 hours.

Introduction

Maternal mortality is an index of effectiveness of obstetric services prevailing in a country. Prevention of maternal deaths is one of the foremost goals in the safe motherhood program in a developing country like ours. It was estimated that 100000 mothers die every year in our country constituting 20% of all maternal deaths in the world.

In order to reduce the maternal mortality and to implement safe-motherhood program, the first task is to identify the causes which are multiple and interrelated. An attempt was made to analyze the causes and to identify the avoidable factors.

Material and Methods

Maternal deaths over a period of 6 years from 1992 to 1997 were analyzed at Government General Hospital Guntur and compared with the previous study

(1987-1991). The aim was to find out any variations in the etiological factors and decline in the MMR.

Observations

Among 20847 deliveries, there were 163 maternal deaths. The MMR is shown in Table I.

Table I
Number of Deliveries and Maternal Deaths

Years	No. of Deliveries	No. of Maternal Deaths	MMR
1987-1991 (5 years)	18935	147	776/100000 LB
1992-1997 (6 years)	20847	163	780/100000 LB

Out of 163 deaths, 12(74%) were from rural areas and 42(26%) were from urban areas; 149(91%) were unbooked. 143(88%) were admitted in a moribund state.

30.74% were in the age-group of 15-19 years, 57.70% were between 20-29 years, 10.40% were between 30-39 years and 1.20% were above 40 years. 76(46.60%) were primiparae, Para II were 42(25.80%), Para III were 29(17.80%) and Para IV were 16(9.80%).

Direct obstetric causes were 66% and indirect were 34% (Table II and III). Among the direct causes, deaths due to PIH and eclampsia were 11.10%, due to sepsis 13.50%, haemorrhage was 27.50% and others were 13.50%.

Table II
Deaths due to direct obstetric causes

Causes	1987-1991		1992-1997	
	No. of Cases	%	No. of cases	%
Sepsis	47	31.00	22	13.50
Haemorrhage	36	25.40	45	28.00
PIH and Eclampsia	18	12.30	18	11.00
Others-CVT, Pulm embolism, Renal failure etc	4	2.70	22	13.50
Total	105	71.40	107	66.00

16.50% of deaths were due to viral hepatitis (Table III). Anaemia was the cause in 10% and others were 7.50%.

Table III
Deaths due to indirect obstetric causes

Causes	1987-1991		1992-1997	
	No. of cases	%	No. of cases	%
Jaundice	20	13.60	27	16.50
Anaemia	15	10.20	16	10.00
Others-Heart disease, TB, Meningitis, Tumors etc	7	4.80	13	7.50
Total	42	28.60	56	34.00

Table IV shows the deaths due to haemorrhage in detail. Postpartum haemorrhage was the leading cause of death (37.80%) then followed by placental abruption (29%). There were 8 cases of rupture uterus (17.80%) with diffuse intraperitoneal haemorrhage.

Table IV
Deaths due to haemorrhage in detail

Cause of Haemorrhage	No. of cases	%
Placental Abruption	13	29.00
Placenta Previa	2	4.40
PPH	17	37.80
Inversion of Uterus	1	2.20
Rupture Uterus	8	17.80
Abortion	4	8.80
Total	45	100.00

Table V shows the obstetric outcome. 65% had vaginal delivery, C. Section was done in 8%, and laparotomy was performed for rupture uterus in 5% of cases. 6.70% were abortions and 15.30% were undelivered.

Table V
Obstetric Outcome

Outcome	No. of Cases	%
Undelivered	25	15.30
Normal Vaginal Delivery	104	65.00
Forceps Delivery	2	
Caesarean Section	13	8.00
Laparotomy (Rupture Uterus)	8	5.00
Abortion	11	6.70
Total	163	100.00

Table VI shows the time of death. Intrapartum and postpartum deaths were 54.60%, puerperal were 18.40% and postoperative were 5% (within 12 hours).

Table VI
Time of Death

Time	No. of Cases	%
Antenatal	25	15.30
Intrapartum	38	23.30
Postpartum	51	31.30
Puerperal	30	18.40
Post-operative (within 12 hours)	8	5.00
Post abortal	11	6.70
Total	163	100.00

Table VII shows the time interval between admission and death. 62.60% died within 24 hours, 27% died within 7 days and 10.40% died after 7 days and later.

Table VII
Time Interval between admission and death

Time	No. of cases	%
Within 1 hour	25	15.30
Within 12 hours	39	24.00
12-24 hours	38	23.30
2-7 days	44	27.00
More than 7 days	17	10.40
Total	163	100.00

Discussion

There was no decline in the MMR (780/100000) during the last 6 years when compared to the previous study (Kamala Jayaram 1992). There is a rise in indirect causes (34%). Shrotri (1994) reported MMR of 460/100000 live births and indirect causes in 37.20%, which correlated with that of ours (34%) and viral hepatitis in 22% of cases. Bichile (1994) observed 17.20% of indirect causes and hepatitis in 14.80%. In our study hepatitis was the cause in 16.50%.

Postpartum and postabortal sepsis was the number one killer of mothers in India (Rao 1980). In the present study, deaths due to sepsis had come down to 13.50% as against 31% in the past (Table II). Goswami (1996) reported sepsis in 28.20%, haemorrhage in 16.79% and toxemia in 29.77% of cases. In the present study toxemia was seen in 11% and haemorrhage was the leading cause of death (27.50%). Amongst haemorrhage, PPH was the common cause (37.80%) which correlates with the study of Ramteke (1996) who reported haemorrhage in 29.25% and PPH in 34.90% of cases. 94% of cases were unbooked and 62.60% died within 24 hours of admission as most of them were brought in a moribund state.

Conclusion

From this study it was observed that most of the deaths were avoidable had adequate care been taken. As 74% of maternal deaths are from rural areas, strengthening the maternal health services, training of health workers and others to identify high-risk cases and early referral is the most essential step to be taken. Iron and folic acid tablets and antibiotics should be made available to prevent anaemia and sepsis. Measures are to be taken to prevent hepatitis by provision of safe drinking water and vaccines. Health education is important which facilitates awareness regarding the importance of prenatal, intrapartum and postpartum care and also family planning.

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