

ANALYSIS OF MATERNAL MORTALITY IN THE PAST DECADE

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SUMMARY

In the decade from 1977 to 1986 there were 90 maternal mortalities amongst 86, 141 live births at the Nowrosjee Wadia Maternity Hospital, Bombay. Thus the maternal mortality rate was 104.47 per 100,000 live births for this period. Only 35 (38.9%) of these 90 cases were registered for antenatal care. Twentyfive (27.8%) deaths occurred in the antepartum period, 2 (2.2%) during labour, 61 (67.8%) in the post-partum period and the remaining 2 (2.2%) occurred following evacuation of Vesicular Mole. In 66 (73.3%) there was a direct cause of death, while in the remaining 24 (26.7%), the cause of death was indirect. Amongst the cases with direct causes of death, there were 32 (35.6%) of haemorrhage, 15 (16.7%) of pregnancy induced hypertension, 15 (16.7%) of pulmonary embolism. Three (3.3%) deaths were due to sepsis and 1 (1.1%) was anaesthesia related. Of the 63 cases which had a delivery, 43 (68.2%) had a normal vaginal delivery, 11 (17.5%) had a caesarean section, 7 (11.1%) had an abortion, 1 (1.6%) had a forceps delivery and 1 (1.6%) had a craniotomy.

Introduction

The ultimate tragedy of a maternal mortality can be prevented by a continuous assessment of all such losses. By reviewing the 90 maternal mortalities during a 10 year period, at the Nowrosjee Wadia Maternity Hospital, Bombay, it will be the endeavour of this paper to depict the current trends observed in a large teaching maternity hospital serving a predominantly urban population in central Bombay.

Materials and Methods

A thorough analysis of the individual

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case records of all cases of maternal mortality during the years 1977 to 1986 was undertaken with respect to the following factors:—(i) antenatal registration (ii) age (iii) parity (iv) cause of death (v) stage of pregnancy at the time of expiry (vi) mode of delivery and (vii) perinatal outcome.

Maternal mortality was defined as death of any woman during pregnancy or within 42 days of delivery, irrespective of the duration and site of the pregnancy. Direct cause of death included obstetric complications of pregnancy, labour and puerperium. Indirect causes included diseases developing in pregnancy but not directly due to pregnancy. These may be aggravated by the physiological changes of pregnancy. Non-obstetric

deaths due to accidental or incidental causes unrelated to pregnancy and its management were included under indirect causes of death.

Observations

(i) Antenatal registration

Only 35 (38.9%) cases were booked, the remaining 55 (61.2%) received no antenatal care.

(ii) Age

The agewise distribution of these 90 cases is depicted in Table I.

TABLE I
Age Distribution

Age	No.	%
Less than 19 years	2	2.2
19 to 24 years	33	36.7
24 to 29 years	33	36.7
29 to 34 years	13	14.4
More than 34 years	9	4.5
	90	100

(iii) Parity

There were 18 (20%) primigravidae, 70 (77.8%) multigravidae and 2 (2.2%) grand multigravidae.

(iv) Cause of death

In 66 (73.3%) cases there was a direct cause of death. There were 32 (35.6%) cases of haemorrhage including 19 (21.1%) of postpartum haemorrhage, 9 (10%) of antepartum haemorrhage and 4 (4.4%) deaths of uterine rupture. The 15 (16.7%) cases of pregnancy induced hypertension included 9 (10%) of pre-eclampsia and 6 (6.7%) of eclampsia. There were 15

(16.7%) deaths due to pulmonary embolism. Only 3 (3.3%) mortalities occurred due to sepsis and 1 (1.1%) death was related to anaesthesia.

The indirect causes were responsible for death in 24 (26.7%). The largest group was infective hepatitis and anemia with 6 (6.7%) mortalities each. There were 3 (3.3%) deaths due to pulmonary tuberculosis. Both rheumatic heart disease and encephalitis claimed 2 (2.2%) lives each. There was 1 death due to chronic renal failure and one due to a traumatic accidental liver tear. In 3 (3.3%) cases the cause of death remained unknown.

(v) Stage of pregnancy at time of death

Of the 25 (27.8%) deaths that occurred in the antepartum period, 3 (3.3%) were first trimester deaths, 6 (6.7%) occurred in the 2nd trimester and 16 (17.8%) occurred after 28 weeks of gestation. There were 2 (2.2%) intrapartum deaths. The majority i.e. 61 (67.8%) occurred in the postpartum period. There were 2 (2.2%) deaths following evacuation of vesicular mole.

(vi) Mode of delivery

This is shown in Table II.

TABLE II
Mode of Delivery

Mode of Delivery	No.	%
Normal Vaginal Delivery	43	68.2
Cesarean Section	11	17.5
Abortion	7	11.1
Forceps	1	1.6
Craniotomy	1	1.6
	63	100

(vii) Perinatal outcome

There were 35 (60.5%) live births, 16 (27.6%) fresh still births and 7 (12.9%)

macerated still births. Thus there were 58 viable fetuses born which included two twins.

Discussion

The maternal mortality rates reported by other Indian authors for this period are given in Table III. Our maternal mortality rate of 104.4/100,000 live births is comparatively low. This is mainly because the population served by our hospital is predominantly urban and most pregnant women receive antenatal care. Also, blood bank facilities and trained resident, consultant and anaesthetic personnel are available round the clock.

22.8% (Beebi, 1987) and 21.53% (Rao, 1980) of cases. Pregnancy induced hypertension was the cause of death in 16.7% in our series. In other reported series it claimed 9.59% (Rao, 1980), 8.6% (Devi and Singh, 1987), 14.7% (Beebi, 1987) and 16.8% (Panat and Mehendale, 1987) of deaths. Pulmonary embolism which also includes cases of amniotic fluid embolism was also an important cause of death accounting for 16.7% of cases. This is high as compared to reports of 9.2% (Engineer and Lakshmi, 1976), 6.4% (Devi and Chandok, 1974), and 4.3 (Guha, 1972). The incidence of mortality due to sepsis was only 3.3% in our series. This is much lower than 28.69% (Rao, 1980),

TABLE III
Maternal Mortality Rates in India

	Year	M.M.R./100,000 Live births	Percentage of Direct Causes of Death
Sengupta and Gode Safdarjung Hospital, New Delhi.	1975-83	705	70
Sikdar and Konar Edea Hospital, Calcutta.	1976-78	91	68.3
Devi and Singh R.M.C. Hospital, Imphal.	1976-85	300	91.8
Rao Co-operative Multicentre Study—rural referral Centres.	1978-79	703	66.8
Panat and Mehendale Sasoon General Hospital, Pune.	1980-85	315	50.37
Beebi Government Hospital for Women and Children, Madras.	1981-85	224	60
Present Series	1977-86	104.47	73.3

As expected, 61.2% of the cases were unregistered. The leading cause of death was haemorrhage—35.6%. In other Indian reports haemorrhage was responsible for death in 15% (Panat and Mehendale, 1987), 35.2% (Devi and Singh, 1987),

12% (Beebi, 1987), 20.4% (Panat and Mehendale, 1987), and 7% (Devi and Singh, 1987) reported by others. This is due to the fewer number of criminal abortion cases as compared to other Indian series and the liberal use of antibiotics.

In 11 (17.5%) cases a Cesarean Section was done. The risk of maternal mortality in cesarean deliveries in our hospital is about 4 times that in a vaginal delivery. This is identical to that reported by Rosen (1980).

Our Maternal Mortality rates are still much higher than those reported from the developed nations. To reduce these co-ordinated effort must be made from all those involved in the care of the pregnant woman.

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