

REVIEW OF MATERNAL MORTALITY OVER NINE YEAR PERIOD AT SAFDARJANG HOSPITAL, NEW DELHI

G. RAICHOWDHURI • VEENA GANJU • RUPALI DEWAN

ABSTRACT

This paper analyses the causes of maternal deaths to find out preventable factors of maternal mortality during last nine years (1979-87) at Safdarjang Hospital, New Delhi, India. There were 96,025 live births and 614 maternal deaths making a maternal mortality rate of 638 per 100,000 live births.

Sepsis, haemorrhage and toxæmia were the major direct obstetric causes of death, sepsis being commonest, whereas anaemia and hepatitis were the commonest indirect causes of death; 97% of these patients were unbooked emergencies, admitted in a moribund condition. Preventable factors were present in 90-95% of these maternal deaths. These deaths could have been prevented by adequate antenatal care, correction of anaemia, providing facilities for delivery under aseptic and antiseptic conditions by properly trained personnel, by arranging blood transfusions at the critical time and supervision by senior medical staff at hospital level.

Introduction

Maternal mortality includes mortality in women attributable to pregnancy, child birth and its sequelae. It is an index of the health of the population, where as maternal mortality rate is a fine measure of quality of maternity and child health

Department of Family Welfare, Safdarjung Hospital, New Delhi - 110029.

services rendered in a country. It highlights the obstetrical services rendered in different hospitals or states and may help in planning of better health services. Although the maternal mortality rate has declined by ten to twenty times during the last 40 years even in developing countries, yet it is still distressingly high in India ranging from 500-800 per 100,000 live births (Park & Park 1987).

Material and Methods

The present retrospective study was done to analyse the causes of maternal deaths during last nine years, from 1979 to 1987 in Safdarjang Hospital, New Delhi, India, to find out the preventable factors of maternal mortality. The relevant facts collected from the case records of the patients include the number of maternal deaths, maternal age, parity and causes of death. A major problem in our study was the total absence of autopsy information since it was never performed in any of the deaths because of social objection. Attempts were made to identify preventable factors by analysing the causes of death. The maternal mortality rate was analysed as per the definition of FIGO, as the number of women dying from any cause while pregnant or within 42 days of termination of pregnancy per 100,000 live births (Krishna Menon, Devi, Bhaskar Rao, 1986). The cause of maternal deaths were classified as : a) Direct causes b) Indirect and c) Unrelated (Rosenfield and Maine, 1985).

Results

Six hundred and thirteen maternal deaths occurred at Safdarjang Hospital, Delhi during the period between Jan. 1979 to 31st December, 1987. There was 96,025 live births during the same period, giving a maternal mortality rate of 638 per 100,000 live births (Table I). Ninety seven percent of maternal deaths were unbooked emergency admissions, 83% belonging to rural and semiurban, 65% in the age group between 20-30 years and 35% were primi-gravidae (Table II and Table II b).

It is evident from Table III that sepsis was the major direct cause accounting for 23.6% of the deaths, out of which 65% were

TABLE - I
MATERNAL MORTALITY PER YEAR
(1979-1987) AT SAFDARJANG HOSPITAL,
NEW DELHI

<i>Year</i>	<i>Total Live Births</i>	<i>Total Maternal Deaths Per Year</i>	<i>Maternal Morality Rate Per 100,000 Live Births</i>
1979	8,969	74	825
1980	8,577	57	664
1981	9,554	49	512
1982	9,988	72	720
1983	10,614	84	791
1984	10,478	69	658
1985	11,772	78	662
1986	12,645	65	514
1987	13,428	65	484
Total	96,026	613	638

TABLE II (A)
DISTRIBUTION OF MATERNAL DEATHS
ACCORDING TO LOCALITY AND
HOSPITAL REGISTRATION

<i>Category</i>	<i>Number</i>	<i>Percentage</i>
Booked	19	3.1
Unbooked	594	96.9
Rural Area	405	66.0
Urban Slum Area*	104	17.0
Urban Area	104	17.0

*These are slum area in and around Delhi.

TABLE II (B)
AGE AND PARITY DISTRIBUTION

Category	Number	Percentage
Age (in years)		
< 20	131	21.37
21 - 25	242	39.48
26 - 30	159	25.94
31 - 35	54	8.80
36 - 40	18	2.94
40	9	1.47
Parity		
P ₀	215	35.07
P ₁	110	17.95
P ₂	140	22.84
P ₃	87	14.20
P ₄	31	5.10
P ₅ +	30	4.80

due to puerperal sepsis and 35% due to septic abortions. Haemorrhage accounted for 18.1% of maternal deaths due to direct causes; 41% of which was due to antepartum haemorrhage, 31% due to postpartum haemorrhage, 18% due to rupture uterus and 9% due to miscellaneous causes like ectopic pregnancy, vesicular mole and inversion of uterus. Seventy eight patients (12.7%) died of pregnancy induced hypertension; 75 patients dying of eclampsia and 3 patients died due to fulminating toxæmia. Amongst the eclampsia group, 75% were antepartum. Majority of these patients (64%) died within 48 hours of admission due to pulmonary complications, cerebrovascular accidents and renal failure. Caesarean deaths in our study group was 2.2% and these were either due to haemorrhagic shock, sepsis, pulmonary embolism or anaesthetic hazards. Among the indirect causes, severe anaemia complicated by congestive failure was the commonest cause of death (16.6%) Hepatitis and heart disease caused 13.3% and 75% of maternal deaths respectively (Table III).

TABLE III
CLASSIFICATION OF CAUSE OF MATERNAL DEATHS

Direct Causes	No. of Maternal Deaths	%age Deaths	Indirect Causes	No. of Maternal Deaths	%age Deaths	Unrelated Causes	No. of Maternal Deaths	%age Deaths
Sepsis	143	23.22	Anaemia	103	16.80	Miscellaneous causes e.g. (Appendicitis, Intestinal Obstruction Ascitis etc.)	8	1.30
Haemorrhage	111	18.10	Infective					
Toxaemia	78	12.72	Hepatitis	82	13.37			
Pulmonary Embolism	16	2.61	Heart Disease	46	7.50			
Operative Mortality	14	2.28	Other medical causes	12	2.0			
Total	362	59.03	Total	243	39.67	Total	8	1.30

Discussion

As seen from the present series, sepsis, haemorrhage and toxæmia still remains to be the leading direct causes of maternal deaths. Sepsis was the major cause in our hospital, since 90% of Puerperal sepsis patients had home deliveries conducted by untrained dais under most unhygienic conditions. There were brought to hospital quite late in fulminating septicaemic condition, since they were unaware of the seriousness of the condition and transport facilities were not available to them. Anaemia and malnutrition were other contributory factors.

Deaths due to septic abortion following spontaneous abortion (34 out of a total of 51 septic abortion) were due to the fact that majority of these patients belonged to rural areas, and were brought for admission after a lapse of 5-7 days following the abortion and in moribund condition.

Avoidable factor was present in 90% cases of deaths due to haemorrhage. These cases were associated with moderate to severe anaemia and decision regarding active line of treatment was delayed in a few cases. Some of these patients died due to non-availability of blood at the critical time.

All deaths due to eclampsia were admitted as unbooked emergencies and 95% could have been prevented by antenatal care, early hospitalization and by intensive care during hospital stay. Deaths due to severe anaemia could have been prevented by prophylactic iron and folic acid administration, antenatal care and detection and treatment of anaemia. Maternal deaths due to hepatitis were unavoidable in majority.

Conclusion

Prevention of maternal mortality is one of the foremost goals of modern obstetrics. In view of the high maternal mortality in India, it is felt that there is an urgent need for proper implementation of existing health programmes specially at rural level. Efforts should be made to improve the status of women through health education, knowledge of hygiene of pregnancy and complications of pregnancy and childbirth and abortion. Many of the maternal deaths are preventable through increased utilization of prenatal care, ideal intranatal and post-natal supervision, avoidance of unwanted births by use of modern contraceptives and training of traditional birth attendants to identify and refer high risk patients. Periodic refresher courses for medical officers at primary health centre and general practitioners and team work in maternal care are important measures to reduce the high maternal mortality rate. Further feasibility of better transport facility for moribund patients, availability of flying squad and efficient blood transfusion services are very essential for reducing the maternal mortality in India.

It is hoped that significant reduction in maternal mortality in India is possible in the near future by health education, proper obstetric care and, provision of efficient MTP Services coupled with adoption of small family norm by use of proper contraceptive methods.

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... need for proper implementation of such health programmes especially at rural level. Efforts should be made to improve the status of women through health education, knowledge of hygiene of pregnancy and complications of pregnancy and child-birth and abortion. Many of the maternal deaths are preventable through increased utilization of prenatal care, ideal nutrition and post-natal supervision, avoidance of unwanted births by use of modern contraceptives and counselling of traditional birth attendants in identify and refer high risk patients. Further, reference courses for medical officers of primary health centres and general practitioners and team work in rural areas are important measures to reduce the high maternal mortality rate. Further, emphasis of better transport facility for women and patients, availability of 24 hours and efficient blood transfusion services are very essential for reducing the maternal mortality in India.

It is hoped that appropriate education in maternal mortality in India is possible in the near future by health education programmes in the care and treatment of ill patients. M.T.V. services coupled with adoption of small family norm by use of proper contraceptive methods.

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in our hospital. Some of the patients who were referred to our hospital were under most unfavourable conditions. These were brought to hospital quite late in the morning and some of them were under severe anaemia. The seriousness of the condition and the condition of the patient were such that the patient was unable to walk. Anaemia and malnutrition were common conditions.

It is hoped that appropriate education in maternal mortality in India is possible in the near future by health education programmes in the care and treatment of ill patients. M.T.V. services coupled with adoption of small family norm by use of proper contraceptive methods.

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All deaths due to anaemia were diagnosed as unbooked pregnancies and 90% could have been prevented by early antenatal care and by early hospitalization and by better antenatal care during hospital stay. Deaths due to severe anaemia could have been prevented by prophylactic iron and folic acid administration, antenatal care and detection and treatment of anaemia. Maternal deaths due to anaemia were unavoidable in many.