

STUDY ON 90 CASES OF MATERNAL DEATHS IN EDEN HOSPITAL DURING 1975

by

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The maternal mortality even to-day in the developing countries including India is about 10 times higher than that of developed countries (Rao & Malika 1977). Evaluation of the causes of such deaths is therefore still needed where the death rate is surprisingly high. In the present report it is proposed to high light the causes and discuss the preventable factors in maternal deaths that occurred at Eden Hospital, Calcutta, during the year 1975.

Material and Methods

The study was conducted according to the guide for maternal death studies published by the Committee on the Maternal and Child Care of the division of Socio-economic activities of the American Medical Association (Krupp) and was classified as (a) direct obstetric deaths, (b) indirect obstetric deaths (c) and deaths due to associated causes.

There were 90 maternal deaths including 15 abortion mortalities. There were 9,021 total births in this period. Maternal mortality rate was 9.97 and 8.31 respectively per 1000 births including and excluding abortion mortalities.

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Analysis of the Cases

Analysis showed that direct and indirect obstetrical causes respectively were responsible for 52 and 32 deaths; remaining 6 cases died due to associated factors.

Amongst these 90 cases, 18.9% of the total deaths took place in the age group below 21 years, 53.3% between 21 to 30 years of age, 25.6% between 31 to 40 years of age and 2.2% in ages above 40 years. Amongst all obstetric admissions 15.9%, 75.8% and 7.6% belonged to the age groups upto 21 years, 21-30 years and 31-40 years respectively. The youngest died at 18 and the oldest at 45 years of age.

Grand multigravida (30%) followed by second (24.4%) and primigravida (18.9%) showed the higher frequencies of deaths, their respective percentages of admissions at that time being 12.2, 23.9 and 37.7 per cent respectively amongst all obstetric in patients. The death rate was also higher in cases of aged 30 or over. The highest gravidity in this series was 12th. Only 7.8% cases of maternal deaths were booked against 5% booking for all obstetric cases in that period. Majority of deaths occurred in unbooked or emergency cases.

Of the total deaths, 44.4% of cases carried their pregnancies up to term, 16.7% died between 33 and 36 weeks of

pregnancy, 7.8% died between 29 and 32 weeks and 23.3% died between 13 and 28 weeks. All the other cases (7.8%) except 1 who carried pregnancy upto 41st week, died within first trimester. Amongst these total of 40 cases, 33.3% of deaths occurred within 24 hours of admission and 22.2% after a week. Remaining 47.4%, died during the intervening period. Thirty patients (33.3%), who died earlier were mostly cases of obstetric emergencies

such as uterine rupture, acute inversion, retained placenta, accidental haemorrhage and severe postpartum bleeding; 12 of these died within 6 hours. Deaths on account of hepatic coma, and eclampsia occurred within a week and septic cases died in subsequent period.

On admission, 23 (25.6%) patients had haemoglobin levels below 4 gm%, 44 (48.8%) 4 to 7 gm% and 23 (25.6%) 8 to 10 gms%.

TABLE I
Causes of Maternal Deaths

	No. of cases	Per cent
<i>Direct Obstetric Causes (52)</i>		
Abortions:	15	16.7
(a) Haemorrhagic shock (admitted as such) — 2		
(b) Septic abortion — 12		
(c) Cardiac failure following hysterotomy (M.T.P.); had heart disease — 1		
Acute inversion of uterus	1	1.1
Antepartum Haemorrhage	1	1.1
Eclampsia	8	8.9
Obstructed labour with shock (admitted as such)	4	4.4
Postcaesarean section (outside operated 1)	6	6.7
Postpartum haemorrhage (outside delivered 5)	7	7.8
Puerperal sepsis (all of them delivered outside)	5	5.6
Pulmonary embolism	3	3.3
Severe pre-eclampsia with uraemia	1	1.1
Rupture uterus	1	1.1
<i>Indirect Obstetric Causes (32)</i>		
Anaemia (Hb. less than 7 gms per cent)	8	8.9
Essential hypertension with cerebral haemorrhage following child birth	1	1.1
Heart disease (mitral stenosis with C.C.F.)	1	1.1
Jaundice (mostly viral hepatitis)	22	24.4
<i>Associated causes:</i>	6	6.7
1. Encephalitis — 4		
2. Bronchopneumonia — 2		
	90	100

Jaundice alone was responsible for 22 deaths (24.4%) which showed the highest mortality; 10 of them were confined in hospital, 3 were brought after outside confinements and 9 died without either being confined or aborted. Of these 13 deliveries, 53.8% (7 cases) confinements resulted in stillbirths, 23.1% (3 cases) gave live births and another 23.1% (3 cases) gave births to grossly asphyxiated babies beyond revival. Five jaundiced patients also suffered from pre-eclampsia and in 2 cases postpartum haemorrhage occurred.

Abortion alone caused 15 deaths (16.7%). Twelve of them were admitted with sepsis and in 10 out of these 12, histories of interferences outside could be elicited. Two patients with incomplete abortion died due to irreversible shock after admission with severe haemorrhages. The third one, a patient of rheumatic heart disease, died due to cardiac failure following medical termination of pregnancy by anterior hysterotomy. Nine cases of septic abortion died of septicaemia and peritonitis, 2 due to renal failure and 1 due to jaundice with bacteraemic shock.

Eclampsia ended 8 (8.9%) lives, 6 of them had both ante and intrapartum fits and 2 only postpartum fits. Half of them died due to renal failure and another half due to pulmonary oedema and cardiac failure.

Anaemia was directly responsible for 8 (8.9%) deaths, 2 antepartum and 6 postpartum. Left ventricular failure (62.5%) and congestive cardiac failure (37.5%) were the causes of death. None of these patients had antenatal check up. Seven deaths were due to postpartum haemorrhage, 5 who confined outside were admitted with shock in poor state of health. Two patients who

confined in this hospital were grand-multiparas where manual removal of placenta was needed. One of them died due to fatal transfusion reactions and the other due to irreversible shock.

Six (6.7%) deaths occurred following caesarean section, 3 of them due to septic peritonitis. Another 3 died due to bacteraemic shock, postoperative shock and paralytic ileus. Bacteraemic shock developed in 1 case after attempted craniotomy. Postoperative shock might have been precipitated in second case after unsuccessful ventouse application. The case of paralytic ileus was transferred from a nursing home after caesarean section.

Five (5.6%) cases who confined elsewhere were admitted with puerperal sepsis and died. Only in 1 of them manual removal of placenta was attempted outside.

Ill-effects of obstructed labour precipitated 4 deaths, 1 of whom an 8th gravida had forceps application outside, 5 times within 9 hours. Two other cases were shifted to this hospital with signs of threatened rupture of uterus. The 4th case was transferred from a subsidiary hospital through a sub-divisional one with obstructed labour and with history of failed forceps. All these cases were in shock and died within a very short time.

Acute obstetric emergencies such as uterine rupture (1) inversion of uterus (1) and accidental haemorrhage were responsible for 3 deaths (3.3%).

Six deaths (6.7%) were due to associated causes—4 due to encephalitis and 2 due to bronchopneumonia.

Post mortem examinations could not be undertaken in any of these cases.

Discussion

A study of 90 maternal deaths in Eden

Hospital where 9,021 confinements took place during 1975 showed that maternal mortality rate was 9.97 per 1000 births (including abortions) for that year against 2/1000 for almost the same period in the teaching hospitals of Madras (Rao & Malika, 1977). Konar et al (1973), Heera and Das (1973) Devi and Chandok (1974) reported institutional maternal mortality rate in India as 5 to 14 per 1000 births. Konar et al (1978) further reported on the basis of 10 years study (1964-1973) that maternal mortality in Eden Hospital varied, between 3.6 to 10.8/1000 births year-wise. Higher incidences of mortality in Eden Hospital compared to Madras may be due to the fact that a good number of high risk and moribund cases are transferred to this hospital as a last resort. However, there is still scope to cut down the death rate with the help of good transport and communication system along with the betterment of our socio-economic conditions and medical care. The mortality was higher in unbooked cases which suggested that booking is much needed for the safe outcome of a pregnancy. Direct and indirect obstetric causes were responsible for 52 (57.8%) and 32 (35.5%) deaths respectively and associated causes were responsible for 6 deaths (6.7%).

Jaundice alone, mostly due to infective hepatitis was responsible for the highest number of casualties (22) Konar et al (1978) also reported a higher incidence of maternal deaths due to Jaundice 15.5% in their 10 years study (1964-1973). The death rate due to infective hepatitis complicating pregnancy varied between 32 to 54% in reported series (Rao and Ganapathy, 1955; D'cruz et al, 1968; Sitarathna, 1973). Rao and Malika (1977) reported that infective hepatitis complicating pregnancy was re-

sponsible for one-third of all indirect deaths or 1 out of 6 maternal deaths in Madras City. Immunisation of pregnant women with gammaglobulin against this disease is therefore useful during an epidemic or in endemic areas like big cities.

Abortion was responsible for 16.7% deaths in the present series, of which 10 had histories of interference. Septic abortion alone was responsible for 1 out of 4 deaths due to obstetric causes in Rao and Malika's series (1977). This loss of lives is no doubt preventable. Provisions of well staffed abortion services, which ensure confidentiality or anonymity to the patients outside the over-crowded teaching hospitals, liberal attitudes of physicians to abortions in unmarried women and grand multigravida and wider publicity about the availability of free abortion care under the new act would help to reduce this death.

Majority of deaths either due to anaemia (8) and eclampsia (8) are also preventable to a greater extent. Severe anaemia due to parasitic infestations or of nutritional origin is an important contributory factor of maternal deaths in our country. These could be avoided if adequate steps are taken for the total health of expectant mothers and community. Deaths due to eclampsia can also be prevented or reduced by proper antenatal check up, preferably in a special toxemia clinic, early admission of selected cases of pre-eclampsia to a hospital and termination of pregnancy in severe cases.

Most of 7 deaths due to postpartum haemorrhage could have been easily avoided, if confinements could have been arranged in hospitals. Adequate availability of blood in critical time to replace

the loss helps to a major extent in preventing these deaths

Majority of the deaths following caesarean section (6), obstructed labour (4) and puerperal sepsis (5) in the present series were also avoidable, if the patients were admitted early without frequent vaginal examinations and manipulation of difficult labours outside by inexperienced persons and if high risk cases were sent to this hospital directly without wasting time in other hospitals. Of course prevention of maternal deaths should start much earlier by frequent antenatal check up where high risk cases can be booked in well equipped hospitals.

Judicial use of antibiotics and adoption of aseptic measures during operation or delivery may also help in reduction of the deaths due to septicaemia.

Deaths were higher in grandmultis and more in women aged 30 or over. Many of the deaths in grandmultis could have been avoided if pregnancy had been postponed, avoided or aborted in these high risk cases. Good medical care alone cannot suffice unless the patients co-operate or utilise the services of family planning programme and liberalised abortion laws to protect themselves.

Summary

1. Ninety cases of maternal deaths occurred in Eden Hospital during 1975.
2. Jaundice followed by abortion was the principal cause of death.
3. Preventable factors have been discussed.

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