

MATERNAL MORTALITY

(A Survey of 7 years 1970 to 1976)

by

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In India over 80% of the female population lives in village and are delivered by 'dias'. Only rough estimate of maternal mortality for a particular part of the country is from the emergency admissions into nearby hospitals. It reflects the obstetric care available in that region.

The maternal mortality in the developing countries including India is about 10 times higher than in developed countries (Rao, 1975). In India the maternal death rate was 20 per 1,000 births in 1946 and had declined to 5.9 per 1,000 (Sen Gupta and Kapoor, 1972) 25 years later. This has been possible because of advent of antibiotics, blood transfusion, better antenatal and intranatal care. The accurate data are still not available except perhaps in the institutions from where it is reported, Konar *et al* (1973) 4.67, Heera and Das (1973) 13.3 per 1000 births. Motashaw *et al* (1975) reported mortality for Bombay city to be as low as 0.935 and Bhaskar Rao and Malika (1977) reported for Madras city to be 2.0 per 1,000 births.

A common feature that has been found in India and other countries is the large number of deaths in pregnancy attributed to medical causes. D'cruz and Fonseca (1969) have also emphasised the role of medical complications in the maternal deaths.

The present study deals with the study of maternal mortality during the period of 1970 to 1976 in Zenana Hospital, Jaipur, which deals with all abnormal cases from periphery and also from Maternity Child Welfare centers. In the present report it is proposed to high light the causes of maternal mortality and to discuss the preventable factors in the maternal deaths. During this period there were 426 maternal deaths including abortions also, giving an incidence of 6.4 per 1,000 births. Of these 334 (78.4%) were due to direct or obstetrical causes and 92 (21.6%) were due to indirect or associated causes.

Amongst these maternal deaths, only 26 (6.1%) cases were booked and rest were emergency admissions and 39 patients had home delivery. The maternal mortality was higher in primipara and grandmulti-para, maximum patients were between the age of 21 to 35 years.

Causes of Maternal Deaths

Table I shows the different obstetrical causes of the maternal mortality. The maximum number of deaths were due to haemorrhages in 95 (28.4%) of cases. There were 47 cases of antepartum haemorrhage, placenta previa was more frequent than accidental haemorrhage. Eighteen patients of antepartum haemorrhage died undelivered as they were admitted in a moribund condition and died within 1 hour after admission. Postpartum haemorrhage accounted for 46

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TABLE I
Direct or Obstetric Causes of Maternal Death
1970 to 1976

Causes	No. of cases	Percentage
1. Sepsis (abortion 27, puerperal 46)	73	21.8
2. Haemorrhage APH 47; PPH 46; Coag. failure 2)	95	28.4
3. Abortion haemorrhage	17	5.1
4. Toxaemia (Ecl. 56)	58	17.4
5. Prolonged labour (Rupture uterus 47)	60	17.9
6. Anaesthetic accidents	5	1.4
7. MTP cases	4	1.2
8. Others	22	6.8
Total	334	100.0

deaths, mostly in multiparas. Of these cases 23 had delivered at home and 5 came with inversion (acute) of the uterus and died within 2 hours after admission. Abortion haemorrhage accounted for 17 (5.1%) cases of the maternal deaths.

In spite of the liberal use of antibiotics for obstetric complications both in the hospital and outside, sepsis accounted for 73 deaths (21.8%). This includes both septic abortion and puerperal sepsis. It is regrettable to note that even after the availability of free MTP or abortion services in the city hospitals there were 27 deaths due to septic illegal abortion in this period. Both intrapartum and postpartum sepsis was present in these cases. Most of the cases of puerperal sepsis were either handled outside before admission or had home delivery.

There were 60 cases of prolonged or obstructed labour and 47 cases were of rupture uterus, 15 cases were in a moribund condition on admission and died within 1 to 2 hours after admission.

Toxemia accounted for 58 (17.4%) of the maternal deaths. Most of the cases were of eclampsia and died of either pulmonary complications or anuria. Though anaesthetic services are available for emergencies in all teaching hospitals, there were 5 deaths due to anaesthetic accidents.

Of the 92 "associated deaths" the leading cause was anaemia in 38 (40.2%) cases, cardiovascular disease in 14 (15.2%) and infective hepatitis and hepatic coma in 10 (10.1%) of cases (Table II). Severe anaemia due to parasitic in-

TABLE II
Indirect or Associated causes of Maternal Death
(1970 to 1976)

Causes	No. of cases	Percentage
1. Severe anaemia of pregnancy	38	41.3
2. Cardiovascular disease	14	15.2
3. Infective hepatitis and hepatic coma	10	10.1
4. Pulmonary tuberculosis and Pneumonia	8	8.7
5. Gastroenteritis	2	2.2
6. Meningitis and encephalitis	3	3.3
7. Cerebrovascular accidents	4	4.3
8. Others (Appendicitis, Epilepsy Head injury etc.)	13	14.9
Total	92	100.0

festation or nutritional origin is an important contributory cause of maternal deaths in our study. The other associated causes of the deaths are shown in Table II.

Mortality in Relation to the Period of Pregnancy and Duration of Hospitalisation

Out of 334 maternal deaths due to direct causes, in 117 (35%) of the cases the patients stay in the hospital was less than 24 hours. Even among those due to indirect causes about 21% cases died on the day of the admission as they were brought in as medical emergency. Of the deaths 40% occurred during or within 24 hours of delivery whereas most of the associated deaths took place during pregnancy or the puerperium. Of the maternal deaths in 60.7% of the cases avoidable factors were present and in 25% the delay in bringing the patients to the hospital was due to lack of prompt transport facilities.

Caesarean Section and Maternal Deaths

There were 45 deaths following caesarean section, of these only 6 were booked cases. The causes of deaths were: sepsis 23, haemorrhagic shock 13, anaesthetic accidents 2, pulmonary embolism 2, hyperpyrexia 2, myocardial infarction 1, status epilepticus 1, and paralytic ileus 1 case. Amongst those who had haemorrhagic shock 9 cases were of placenta previa, 2 cases of accidental haemorrhage, and 2 cases had postpartum haemorrhage. Of the 9 cases of placenta previa, 6 were collapsed on admission, and 2 also had postpartum haemorrhage. Of the 2 cases of accidental haemorrhage, 1 ended in caesarean hysterectomy for atonic postpartum haemorrhage. Of the 2 cases of postpartum haemorrhage in 1 case there was placenta increta for which hysterectomy was done. The major factors in these cases of haemorrhagic shock were delay in bringing the patient and inadequate blood transfusion and delay in getting the blood also. Of the cases of sepsis 18 patients were in prolonged labour and were

handled by dials before admission to the hospital.

Discussion

The maternal mortality at Zenana Hospital Jaipur is 6.4/1000 births as compared to national figures of (Sen Gupta and Kapoor, 1972) 5.9/1000 births. Most of the cases in the present series were emergency admissions and hardly 6.1% death occurred in booked cases suggesting that there is an urgent need for health education. The public should realise that prenatal care and early booking is a must for the safe outcome of pregnancy.

Septic abortions were responsible for 27 (8.0%) deaths and were no doubt preventable. Provision of well staffed abortion services which ensure confidentiality or anonymity to the patient outside the crowded teaching hospitals, liberal attitude of physicians to abortion in single women or the grandmultipara and wider publicity about the availability of the free abortion care under the new Act would help a long way to reduce this important cause of maternal mortality.

Some of our institutions in the city co-ordinate with the MCW centres and regularly screen high risk cases from the peripheral obstetric services. There is a scope for further development in this important field of social obstetrics. All grand and elderly mults (besides elderly primis) need greater care than what an MCW centre can give them. A constant interchange of information and refresher courses for these officers help considerably to improve the standard of the obstetric care and the referral service. Flying squads, particularly for management of third stage complications can be organised in the city with a small extra cost but with far reaching benefits.

Though the skilled staff and experienc-

ed staff in the obstetric wards and delivery rooms of our hospital are mostly vigilant in preventing or detecting early obstetric complications and treating them promptly, still there is room for improvement. A constant supervision by the senior staff and their availability for consultation and if necessary to personally assess and decide on the line of treatment in bad risk cases and occasionally to perform the operations themselves would help considerably in reducing the physician factors in the causation of maternal deaths. In abruptio placentae, a decision to do caesarean section should not be taken late. The abruption delivery interval is more important than that between admission and delivery. The delay may also result in coagulation failure. Blood transfusion services should be better organised, enlisting more donors (from amongst the relatives) during emergencies, and the amount transfused should depend upon the volume lost so as to adequately combat shock. In hypotonic inertia or in trial labour one should not wait too long for sepsis to set in before deciding for caesarean section.

Periodic maternal mortality meetings involving the staff of the teaching hospitals and the surrounding peripheral maternity centres help considerably in identification and elimination of the avoidable factors of maternal deaths in the city or at least in our major teaching institutions. We hope that the problem of the grandmultipara and of septic abortion will disappear in the near future as a result of concerted efforts of our family welfare and abortion services.

Deaths from abortion haemorrhage have also been high. A competent domiciliary treatment, transport and blood transfusion services will go a long way in lowering deaths from haemorrhages.

Ignorance plays an important role in great many of the procured abortion. Only a wide campaign on the immediate and remote dangers of such abortions can reduce interference and deaths from abortions.

Summary

A 7 years study of 426 maternal deaths in Zenana Hospital, Jaipur gives the incidence of maternal mortality to be 6.4 per 1000 births. The booked cases were 6.1%.

Of the 334 deaths due to direct causes, haemorrhages of pregnancy (28.4%), sepsis (21.8%), toxæmia (17.4%) and prolonged labour (17.9%) were important. Septic abortion accounted for 27 deaths. Of the associated causes anaemia accounted for 41.3% and cardiovascular disease in 15.2% and were the main causes.

The avoidable factors were present in 60.7% of the cases and in 25% the delay in bringing the patients to the hospital was due to lack of prompt transport facilities. The suggestions for reducing maternal mortality has been discussed.

References

1. Bhasker Rao, K. and Malika, P. E.: *J. Obstet. Gynec. India.* 27: 876, 1977.
2. D'Cruz, I. A. and Fonseca, J. H.: *Proceedings of International Seminar on maternal mortality. Family Planning and Biology of Reproduction (1969)* page 270.
3. Heera, P. and Das, S. K.: *J. Obstet. Gynec. India.* 23: 455, 1973.
4. Konar, M., Lahiri, D. and Saha, K.: *J. Obstet. Gynec. India.* 23: 437, 1973.
5. Motashaw, N. D., Kothari, M. and Mehta, P.: *Proceedings of Second International Seminar on Maternal and Perinatal Mortality, Pregnancy Termination and Sterilisation. (Bombay) 1975, Page 94.*
6. Rao, K. B.: *Obstet. Gynec.* 46: 397, 1975.
7. Sen Gupta, S. K. and Kapoor, P. N.: *Maternal mortality in India, New Delhi, Central Bureau of Health Intelligence, Tech. Studies Series, 1, No. 15, 1972, pp. 5.*