

GROUP V

DEATHS FROM ECLAMPSIA

Reviewed by

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MATERNAL MORTALITY IN ECLAMPSIA AND SHWARTZMAN REACTION

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A CRITICAL REVIEW OF 89 MATERNAL DEATHS FROM ECLAMPSIA DURING A NINE YEAR PERIOD (1960-68), IN MEDICAL COLLEGE, CALCUTTA

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Lahiri analyses 89 maternal deaths in 1071 cases (8.3%) of eclampsia in Eden Hospital, Medical College, Calcutta, during the period 1960-68, the incidence of eclampsia during the years being 0.92 per cent. The maternal mortality rate per thousand viable births (excluding abortions) during the same period was 3.8 and the main causes of death with their percentage of total deaths were eclampsia (20.6%), haemorrhage (14.5%), anaemia (8.8%), jaundice (28.4%), obstetric shock (7.2%) and caesarean section (2.1%).

The distributions of maternal mortality in eclampsia has been recorded according to age, parity, duration of pregnancy, number of fits before institution of therapy and convulsion-delivery interval. Primigravida formed 68% of the cases. Antepartum eclampsia in young primigravidae between the ages 15-20 years with more than 10 fits and a convulsion-delivery interval of more than 12 hours is more likely to be fatal.

The principal causes of maternal deaths from eclampsia were cardiac failure 22 cases, pulmonary oedema 20 cases, respiratory failure 13 cases,

cerebral haemorrhage 10 cases, shock 8 cases, renal failure 7 cases, hyperpyrexia 4 cases and jaundice 2 cases. Three cases were admitted moribund and died immediately after admission.

The treatment followed in the cases were modified Stroganoff regime during the year 1960-63 and "Lytic Cocktail" therapy during the period 1964-68. In both the regimes intravenous pentothal drips were used in status eclampticus and routine antibiotics, intratracheal suction and glucose infusions were resorted to in the vast majority of cases. Hypotensive drugs were rarely used. Labour was induced by low rupture of membranes when the fits were controlled and patient well sedated.

Spontaneous delivery occurred in 46.1%, forceps in 38.5% and destructive operations in 2.8%. Caesarean section was performed 24 times (2.2%) only in severe eclampsia with closed uneffaced cervix, rising hypertension or cephalopelvic disproportion with a mortality of 4.8%.

Recurrence of fits occurred in 48% after therapy. A satisfactory control of B.P. below 130/90, was obtained

in 56 per cent and good urinary output, over a pint, in 24 hours occurred in 66 per cent of cases. Correlation of deaths rate was obtained with recurrence of fits, convulsion-delivery interval and amount of diuresis, but no correlation was obtained with satisfactory control of blood pressure.

The author postulates that most deaths from eclampsia occurred from other complications than the eclamptic state per se and so aims should be directed to prevention of these complications by rapid control of convulsions, maintenance of adequate sedation, fluid restriction to 2 litres of 5% dextrose, use of antibiotics and intratracheal suction to drain the respiratory tract secretions and ensuring quick vaginal delivery by low rupture of membranes—all these would be of chief value in lowering the mortality in these cases.

Achari and Prasad review 56 cases of eclampsia and the presence of Shwartzman reaction characterised by fibrinous thrombi in the portal capillaries and congestion of the sinusoids particularly in fatal cases. The cases are divided into mild, moderate, severe and fatal groups depending on the number of fits, degree and depth of unconsciousness, level of blood pressure and presence of pulmonary oedema. Fatal cases are characterised by deep unconsciousness, unrecordable blood pressure, marked pulmonary oedema and oliguria.

Three grades of pathological changes were seen in the liver from liver biopsy material. Mild, and moderate cases of eclampsia showed stage I changes characterised by cloudy swelling of liver cells, slight dilatation of sinusoids around the

central vein, patchy focal necrosis and enlargement of portal fields from oedema. Severe cases revealed stage II changes characterised by scattered focal necrosis, dilated sinusoids congested with red cells and areas of haemorrhage, foamy hydropic hepatic cells, and dilated central veins with enlargement of portal tracts. Fatal cases showed stage III changes of typical Shwartzman reaction as described by McKay (1953, 1968) with hyperaemia of central vein and sinusoids, necrotic hepatic cells around the central vein, confluent areas of haemorrhage and fibrinous thrombi in the portal capillaries. Similar hepatic changes of stage III have been described in cases of fatal haemorrhagic shock (Schoemaker *et al*, 1964) and in endotoxic shock (Weil, 1957).

Release of histamine (Hinshaw, 1961) Serotonine and Catecholamines, vasodilator polypeptides (Kabold and Jhal 1963) etc. have been implicated in human endotoxin shock and the author postulates that the Shwartzman reaction in fatal cases of eclampsia is precipitated by histamine release stimulated by abruptio-placenta.

EDITORIAL COMMENTS

The problems of maternal mortality are similar in all underprivileged countries and reflect, besides obstetric care, other socio-economic aspects. The papers presented at the XVth All India Obstetric and Gynaecological Congress at Goa reveal that the mortality rate varies from as high as 15.2 (Varanasi) to as low as 3 in Bombay and Calcutta with an average range of round about 7 in the South and in Delhi. This varying

maternal death rate, as the authors themselves point out, depends on the obstetric facilities available in the areas served by the institutions and to some extent also on the availability of blood transfusions and other emergency services in the institution itself.

Anaemia claims the largest number of maternal deaths, about 20-25 per cent of total maternal deaths, either primarily or secondarily. In some centres the death rate from anaemia is low and that is perhaps due to inclusion of anaemia cases in deaths from haemorrhages, rupture uterus toxemia etc. Though packed cell exchange transfusions have to some extent improved the prognosis in desperate cases of anaemia its usefulness is limited to large centres only. Parenteral iron is the main therapeutic measure in the treatment of anaemia but only when cases come under prenatal supervision early in pregnancy. In spite of all these recent therapeutic measures anaemia will remain as a major cause of maternal deaths as long as nutritional standards of population remain low. This is a national problem.

It is noteworthy that there were an appreciable number of deaths from eclampsia and none from pre-eclampsia. This is most unfortunate, because toxemias of pregnancy are almost entirely preventable. It is a direct reflection of the unsatisfactory obstetric services practically all over the country.

Maternal deaths from haemorrhage is alarming, as shown in table 2 (Dhurandhar). That post-partum haemorrhage claimed the largest number of deaths from haemorrhages is disturbing. Delivery at home by

untrained women or in small maternity homes without adequate facilities, and irreversible shock as a result of transfer of exsanguinated patients from long distances are mainly responsible for these deaths. Even slight post-partum bleeding in anaemic women results in death.

From table 4 (Dhurandhar) it is observed that, among associated diseases, infective hepatitis and heart disease were responsible for a number of deaths. Infective hepatitis, particularly during an epidemic, is a very grave complication. The death rate from heart disease is related to a liaison between the obstetrician and the physician. Institutions where such team work is available, the death rate is lower than where only the obstetrician is in charge of cases of heart disease. Diabetes, as shown in table 4, does not appear to be an important cause of maternal deaths but it is likely that cases of diabetes remain undetected and are therefore not reported.

The incidence of rupture uterus is very high in India as in other developing countries. Paranjothy reviews 82 cases during the 15 years period from 1953-67 and gives an incidence of one in 314. Spontaneous rupture accounts for nearly 2/3rd of the cases of rupture and that is a direct reflection of poor maternity services in the country, particularly the rural areas from where the majority of cases are admitted into the hospitals. The four main causes of rupture uterus are (1) spontaneous rupture in obstructed labour, (2) previous caesarean scar, (3) traumatic rupture in difficult deliveries and (4) rupture due to pitocin drip. Prolonged labour, haemorrhage and shock are the main

causes of death.

Abortion as a cause of maternal death is disproportionately high. (Vaish) correctly stresses that "one is struck by the fact, not without some alarm, that though the overall maternal mortality is decreasing, the mortality due to abortion is on the increase". This is mainly due to increasing incidence of criminally induced abortions and is in support of legalisation of abortions.

The above observations are common knowledge to obstetricians in India and have been repeatedly discussed in seminars and conferences but the maternal death rate still remains high. The standard of obstetrics in India is comparable to that in developed countries but there are several factors over which the obstetrician has no control. The skill and clinical judgment of Indian obstetricians is commendable and where blood is freely available and there are good facilities for treating desperate emergencies, the results are satisfactory. But, unfortunately, such facilities are limited to some of the institutions in big cities and towns and in the rest of the places the obstetrician has to work against tremendous odds.

Obstetric facilities in the rural areas, and 90% of India is rural, are deplorable. There are hardly any antenatal and intranatal facilities, and the majority of women are delivered by untrained women. These neglected, exsanguinated women in shock are then sent to a maternity hospital several miles away after many hours of a long, tiring journey. The maternal death rate tabulated is from 15.2 to 3 per thousand live births and tell their own story of obstetrics avail-

able in the area drained by the institution.

It is most regrettable that Government and local bodies do not give the attention that this problem deserves. Obstetric problems, not being political problems, are nobody's concern and young women, in the process of performing the noblest, duty, die silently. Today, every short distance there is a poster advising limiting the family, and perhaps limitation of births will help to lower maternal death rate in future but, it is urgent that similar publicity should be given to enlighten women of the dangers of neglecting themselves during pregnancy and childbirth.

It is a fervant hope that in the next two five-year plans the nutritional standards of the population will improve and villages will be connected by good roads and transports to small towns where there will be well equipped maternity hospitals. The Federation of Obstetrics and Gynaecology of India should consider this as its responsibility and constantly prevail upon the government to move rapidly in this direction.

"Flying Squads" have proved so valuable in England and elsewhere, but in India there are no "Flying Squads". The only one in Bombay has shown its usefulness. "Flying Squads" in a country like India are invaluable, but there have been no attempts both on the part of the obstetricians and the Administration to establish them in each of the large cities and their surrounding areas. This matter should receive urgent attention and the Federation should prevail on the authorities to establish "Flying Squads" all over the country.