REVIEW OF MATERNAL AND FETAL OUTCOME IN OBSTETRIC EMERGENCIES REPORTED TO TERTIARY CARE INSTITUTION IN WESTERN INDIA

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Abstract
Background- Obstetric emergencies can occur suddenly and unexpectedly. They are associated with adverse maternal and perinatal outcome. Early identification of high risk pregnancies can reduce the incidence of obstetric emergencies. Present study was carried out to find out the incidence, nature and outcome of obstetric emergencies.

Material and methods- Retrospective observational study of obstetric emergencies admitted at tertiary care center over a period of two years.

Results- Obstetric emergencies occurred more frequently during antenatal period (52%) than intrapartum (32%) or postnatal period (16%). Hemorrhage and severe hypertension were the commonest emergencies during pregnancy, where as prolonged labour, obstructed labour and rupture uterus was common during intrapartum period. Postpartum hemorrhage, retained placenta and inversion of uterus were common causes of emergencies during postpartum period. Maternal and perinatal mortality was significantly higher in obstetric emergency cases. Postpartum hemorrhage was the commonest direct cause and infective hepatitis was the commonest indirect cause for maternal deaths. Prematurity, low birth weight babies and birth asphyxia were responsible for 90 percent of perinatal mortality.

Conclusion- Early registration, regular antenatal visits, early identification and timely referral of high risk pregnancies can reduce the incidence of obstetric emergencies. Training of nurse midwives, village health workers and doctors at primary health centers, in early identification and treatment of common emergencies can reduce the maternal and perinatal morbidity and mortality.

Keywords: High risk pregnancy, Obstetric emergency, Maternal mortality, Perinatal mortality, Postpartum hemorrhage

1. Introduction
An emergency can be defined as a situation of serious and often dangerous nature, developing suddenly and unexpectedly and demanding immediate attention in order to save life. The maternal mortality ratio (MMR), expressed as maternal deaths per 100,000 live births over a given period, is a major measure of quality of obstetric care. According to World Health Organization (WHO) estimates, it varies up to 100-fold, from approximately 10 in developed countries to approximately 1,000 in least developed. Obstetric emergencies are the leading causes of maternal mortality worldwide and particularly in developing countries where literacy, poverty, lack of antenatal care, poor transport facilities and inadequate equipment/staffing combine to magnify the problem. Prevention where possible and prompt and effective treatment of obstetric emergencies will go a long way to reduce the magnitude of ever increasing maternal mortality which appears to have defied all proposed measures set to reduce it by WHO. Obstetric emergencies have direct relationship with the quality of antenatal care. Unregistered women especially in rural and tribal area suffer from obstetrical emergencies much more than their urban counterparts. Maternal and fetal outcome in obstetric emergencies is adversely affected by lack of transport facilities, financial constraints due to poverty, illiteracy, ignorance, inadequate health infrastructure and meager blood bank facilities. Delay at various levels, result in adverse outcome. Government of India, through National Rural Health Mission (NRHM) has launched an “EmOC” (Emergency Obstetric Care) programme with the aim to train the medical officers and upgrade the infrastructure at primary health centers, so that common emergencies are dealt at peripheral level and emergencies of serious nature get first aid before shifting to higher centers. In order to achieve the difficult target of Millennium
development goal-5 (MDG), it is very important to give due attention to the nature and magnitude of obstetrical emergencies, so that corrective measures can be taken to reach the desired goal. With this background, a retrospective study was carried out to understand the incidence and nature of obstetrical emergencies and their maternal and perinatal outcome at tertiary care teaching hospital located in rural area of Maharashtra.

2. Material and Methods
This retrospective observational study was undertaken for a period of six months at Pravara Rural hospital, which is a tertiary care hospital attached to Rural Medical College located in rural area of Ahmednagar district in Maharashtra, India. Hospital receives high risk cases for delivery from the radius of 100 kilometers, which includes tribal area. Total of approximately 4000-5000 deliveries take place in the hospital per year. Hospital is well equipped and has round the clock availability of qualified team comprising of obstetricians, pediatricians and anesthesiologists. There is availability of laboratory and blood bank in the hospital. All pregnant women who reported to the hospital with the obstetric emergency during study period were enrolled in the study for analysis. Depending upon the nature and severity of the problem, cases were admitted to labour room, eclampsia room and critical care unit or in the antenatal ward. Team of doctors headed by senior consultant were involved in case management. After quick assessment of the nature of the problem, first aid management was done. Necessary investigations were done and specific treatment including surgical management was done. Data was collected from indoor case files, labour room registers and operation theatre records. Information regarding age, parity, duration of pregnancy, educational status, socio economic class, antenatal registration, number of antenatal visits, nature of emergency, treatment given, type of operative intervention, need for blood transfusion, postoperative maternal morbidity, mortality, perinatal outcome and duration of hospital stay was gathered. Above data was entered in case proforma, specially prepared for the study and thereafter keyed into the statistical package for social sciences (SPSS) computer software version 13.0 for windows. The results were analyzed using descriptive statistical methods.

3. Results
It was observed that 73% of emergencies occurred in unbooked cases. More than 90% were residents of rural area and were staying more than ten kilometers away from nearest health centers. Majority belonged to either lower middle or lower economy class. The parity wise distribution of cases did not reveal any significant difference. It was observed that 52% of emergencies occurred during antenatal period, 32% during intranatal period and remaining 16% during postnatal period. Abortions with severe anaemia, ruptured ectopic gestation with hemorrhagic shock, antepartum hemorrhage, severe pregnancy induced hypertension and Eclampsia were common obstetrical emergencies and severe anemia with cardiac failure, organic heart disease with failure and acute fulminant hepatitis with encephalopathy were medical emergencies during antenatal period. Common emergencies during labour were in the form of placental site bleeding, malpresentations, prolonged and obstructed labour, rupture uterus and Eclampsia. Postpartum hemorrhage, retained placenta, inversion of uterus, puerperal sepsis and hepatic encephalopathy were reported during postnatal period. 65% of obstetrical emergencies required some form of surgical interventions. Emergency caesarean section, dilatation and evacuation, manual removal of placenta, exploratory laparotomy, obstetric hysterectomy, internal iliac ligation, B lynch procedure, manual reposition of uterus and repair of soft tissue trauma were the commonest emergency surgical procedures done. Forty percent of obstetrical emergencies required blood replacement. Postpartum hemorrhage, antepartum hemorrhage, ruptured tubal ectopic pregnancy, retained placenta, severe nutritional anemia, coagulation failure, and abortion related hemorrhage were the commonest indication of blood transfusion. Haemorrhage was responsible for 21 percent of maternal deaths and was the commonest direct cause of maternal mortality. Infective hepatitis and its complications were responsible for 44 percent of maternal deaths and was the commonest indirect cause of maternal mortality. (Table.1) Overall perinatal mortality was 110 per thousand births, whereas it was significantly higher i.e.148 per thousand births, among women presenting with obstetric emergencies (p<.05). Incidence of low birth weight, prematurity and birth asphyxia was significantly higher in cases presenting as obstetric emergencies (p<.05). (Table.2)
4. Discussion
An emergency is a sudden unexpected event that threatens usual state of good health. Although women in the reproductive years is young and healthy, obstetric emergencies can occur suddenly and unexpectedly. High risk pregnancy identification and its timely referral to secondary or tertiary care facility holds key to success in reducing the incidence of obstetric emergencies. Early registration in first trimester and subsequent regular antenatal check up at primary health center can identify majority of high risk pregnancies. Medical officers are expected to examine these high risk cases. Timely referral to higher center for specialist opinion will help in specific management. Study revealed that emergencies do occur in all trimesters of pregnancy. Inevitable, incomplete abortions and rupture ectopic pregnancies can cause severe blood loss and result into hemorrhagic shock. Medical officers at primary health center are expected to carry out evacuation of uterus to complete the process of abortion. It is not happening at present for various reasons. Medical officers are either not confident enough to carry out this procedure or there is no availability of facilities at primary health centers. Non availability of doctor after outpatient duty hours has also been noted. Cases should at least be transferred after starting intravenous fluid through secured intravenous line. Hypertension during pregnancy must be diagnosed early to avoid maternal and fetal complications. Blood pressure monitoring and urine examination are mandatory for every pregnant woman. Nurses can very well be trained in performing these tests. Regular abdominal palpation can very well identify malpresentations like breech and transverse lie. These cases must be advised to go for institutional deliveries as these cases often need caesarean section. Anemia and its complications are largely preventable by administration of prophylactic iron and parenteral iron therapy, for those who do not tolerate oral form. Anemia if not treated can adversely affect maternal and fetal outcome. The incidence of complications like pretermaturity and low birth baby were higher in cases of preterm labour due to severe anemia. Maternal chronic hypoxia is mainly responsible for adverse outcome. Preterm onset of labour is usually secondary to maternal medical disorders like malaria, lower genital tract infections and urinary tract infections. Preventive measure like use of mosquito net is essential during pregnancy, to avoid the serious complications like cerebral malaria and fetal death. Urine examination to diagnose asymptomatic infections will help to prevent pre eclampsia and preterm labour with resultant low birth weight and premature babies. Quick transfer of patients to higher centers can save valuable time and will help to improve the outcome. In the present study, considerable delay was observed in shifting the patient to our hospital. There were various reasons for the delay. Cases with active per vaginal bleeding were referred without intravenous line. Many cases of postpartum hemorrhage were received and revived in casualty, who reported in pulse less and with un recordable blood pressure. It is always safe and ethical practice to accompany serious patient till higher center. Referring doctor must inform the doctor at higher center, before shifting the case. Medical college hospital must conduct regular continuation of medical education (CME) programmes for the practitioners of the area. It also helps in rapport building within professional colleagues. Team of doctors at tertiary care center, must always be ready to receive the emergency cases. Blood bank and operation theatre must be ready to play their important supportive role during emergency situation. Good co ordination among team members can yield best outcome. The observations regarding obstetrical emergencies and maternal deaths must be shared with local and district health authorities so that corrective steps can be taken at village or health center level. The leading causes of maternal and perinatal deaths in this study are not significantly different from those identified in the developing countries for several decades. This implies that our pregnant women are still dying from preventable causes of maternal and perinatal deaths and unlike suggested by some authors, no special technology or research is required to tackle the problem in this part of the world.

5. Conclusion
High risk pregnancy identification and proper antenatal, intranatal and postnatal care will reduce the incidence of obstetrical emergencies. Nursing personnel and community health workers must be trained in identification of high risk pregnancies with the help of classification forms and checklists prepared by world health organization. Training of medical officers of primary health centers in the management of common obstetric emergencies, availability of specialist at rural health centers and up gradation of medical officers at primary health centers in the management of common obstetric emergencies, availability of specialist at rural health centers and
of facilities at tertiary care center will reduce the maternal morbidity and mortality. Reduction in poverty, female illiteracy and improvement in health awareness and status of women in the society will help in making pregnancy safe.

References


Table.1 Causes of maternal mortality

<table>
<thead>
<tr>
<th>Sr. No</th>
<th>Cause of death</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>1</td>
<td>Hemorrhage</td>
<td>21</td>
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<tr>
<td>2</td>
<td>Hypertension/ Eclampsia</td>
<td>12</td>
</tr>
<tr>
<td>3</td>
<td>Puerperal sepsis</td>
<td>4</td>
</tr>
<tr>
<td>4</td>
<td>Hepatitis</td>
<td>44</td>
</tr>
<tr>
<td>5</td>
<td>Heart disease</td>
<td>4</td>
</tr>
<tr>
<td>6</td>
<td>Anemia</td>
<td>4</td>
</tr>
<tr>
<td>7</td>
<td>others</td>
<td>11</td>
</tr>
</tbody>
</table>

Table.2 Causes of perinatal morbidity

<table>
<thead>
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<th>Sr. No</th>
<th>Cause</th>
<th>General population</th>
<th>Study group</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Prematurity</td>
<td>30</td>
<td>46</td>
</tr>
<tr>
<td>2</td>
<td>Low birth weight baby</td>
<td>42</td>
<td>60</td>
</tr>
<tr>
<td>3</td>
<td>Birth asphyxia</td>
<td>4</td>
<td>12</td>
</tr>
</tbody>
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