MATERNAL AND PERINATAL OUTCOME IN ECLAMPSIA, A ONE YEAR STUDY

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ABSTRACT

Objective: To estimate the maternal and perinatal morbidity and mortality due to eclampsia.

Material and Methods: This study was conducted between 1st January 2001 to 31st December 2001, in Gynae 'B' unit Khyber teaching Hospital Peshawar. The data of a total of 25 patients presenting with eclampsia during the above period were analyzed. All emergency measures and treatment were taken into account and all surgical methods used, thoroughly reviewed. The presence of complications and maternal and perinatal morbidity and mortality were taken into account and results compiled.

Results: Maternal Outcome:Twenty one (84%) out of 25 survived without long term complication. Four (16%) out of 25 cases deteriorated despite all the care and finally succumbed. One had cardio vascular accident, one had acute pulmonary oedema and cardiac arrest and 2 developed DIC and irreversible shock. Two out of the 4 who died were post caesarean section. Maternal morbidity was higher in the form of chest infection and renal complication.

Perinatal out come:15 out of 25 babies were delivered alive, 10 survived healthily and 5 had neonatal deaths. 2 due to prematurity, 2 IRDS and 1 due to birth asphyxia. Ten out of 25 were intrauterine deaths and still births and these also included babies with anenceph and a meningocele. All patients were from low socioeconomic class and were not booked.

Conclusion: These figures show the seriousness of the problem and the question it poses to our existing state of maternal health care, thus guiding us to work harder and develop new approaches to achive the goal set up by safe mother hood concepts.

Key words: Eclampsia, Maternal and perinatal outcome.

INTRODUCTION

Eclampsia, as defined above, is a serious obstetrical and medical emergency and carries a high risk of maternal and perinatal mortality and accounts for 5000 maternal deaths per year internationally.[1] Today in the developing countries, already having a high maternal mortality there is a great need to take serious steps to decrease the incidence of eclampsia by good antenatal care, identification of high risk pregnancies, timely intervention and good control of the disease, thus decreasing the already existing high rates of maternal mortality. The maternal mortality ratio of Pakistan has been estimated to be 905 per 100,000 maternities.[2]

The perinatal mortality is defined as including all babies born dead from 24th weeks of pregnancy onward (stillbirth) and all live babies that die in the first week of life, regardless of gestational age at birth(neonatal deaths). The rate is now around 9 per 1000.As eclampsia seriously impairs maternal physiology, fetal circulation and oxygenation, fetal cardiac function is also affected, there are increased chances of fetal distress and death.

Gravid patients with eclampsia are admitted and given immediate intensive care for the control of hypertension, treatment and prevention of convulsions and termination of pregnancy, irrespective of the period of gestation. Vaginal delivery is the first option but ceaserean section is done if the state of the patient is worsening and delivery is not imminent in next 6—8 hours.

The aim of the study was to evaluate the cases of eclampsia presenting to Gynae /Obs unit in a Teaching hospital of an under developed province where everybody does not have an access to health care facilities thus leading to an increase in Maternal and Perinatal mortality. Also to study the factors associated with the disease, number of pregnancies, age group, the mode of delivery and maternal and Perinatal outcome in these patients, to apprise ourselves of the existing state and work towards a decrease in Maternal and Perinatal mortality by controlling a major contributor.

MATERIAL AND METHODS

This was a retrospective study of patients who were diagnosed and admitted as Eclampsia in Gynae "B" unit, Khyber teaching hospital in one year period, between 1st Jan'01 —31st Dec'01.

A total of 25 patients were admitted with convulsions and signs and symptoms of pre-eclampsia, i.e; hypertension, oedema, and proteinuria .All these were unbooked patients. On admission, convulsions were controlled with injection valium 10mg I/V stat. Airway was secured, 2 I/V lines secured and Foley's catheter passed to keep intake and output record in addition to providing bladder drainage. Further convulsions were controlled with Valium infusion 40mg in 1000cc dextrose water drip and rate adjusted according to the patient's condition. This was because $MgSO_4$ was not available for use in the year 2001.Blood pressure was controlled with Inj. aldomet (methyldopa) and Cap.nifidipine.

Full baseline investigations including blood complete examination, blood grouping, blood urea, sugar, L.F.T's, platelet count, clotting profile, serum creatinine and serum Uric acid, done in routine for eclampsia cases.

Patients are routinely nursed on sides with suction cleaning of passages as and when required. As soon as general condition of the patient was stable, labour was induced according to Bishop's scoring either with PGE_2 pessary or prepidil gel, oxytocin infusion or amniotomy. If delivery was not imminent in 6—8 hours, caesarean section

under general anesthesia was done. Once delivered, patient was kept under observation for 24hours, during which period infusion Valium was continued. Foley's catheter was removed later when patient was fully recovered and ambulant. Routine investigations were repeated as indicated. For all patients with eclampsia renal ultrasound scan on 7th postnatal day ,was done as routine, fundoscopy done prior to discharge around 7th to 10th postnatal day.

All babies born alive were under regular care of neonatalogists and proper guidance about the care of these babies and lactation was given to the mothers.

All patients were kept on close follow up till B.P was controlled and family planning advice given A thorough search was done in all 4 cases who died inspite of all the care and sequel reviewed thoroughly to exclude any causative factors other than eclampsia responsible for the death. All complications, like infections, renal failure etc. were documented and record kept of the outcome.

RESULTS

During the study period 1. 1.01.—31.12.01 a total of 25 patients were admitted with eclampsia. The total number of admissions in Gynae "B" ward, Khyber teaching hospital, in the above mentioned period was 7514, and total obstetrical admissions were 3,363. So the incidence comes to 7.4/1000 obstetrics admission.

The ages of patients covered a wide range between 17—30-years. However majority of the patients 15 out of 25 (60%) were between 17—20 years. 6(24%) between 21—24 years and 4 (16%) 25—34 years age group.

The number of pregnancy related to the occurrence of eclampsia was as follows:18 (72%) were primigravidae, 4 (16%) were second gravida and 3 (12%) were G_3—G_5.

Grvida	Number n = 25	Percentage
G_1	18	72%
G_2	4	16%
G_3—G_4	3	12%

TABLE-I

The mode of delivery in these patients was : 10(40%) had outlet forceps delivery with episiotomy. 5(20%) had vaccum delivery, 3(12%) had spontaneous vaginal delivery, 5(20%) had emergency caeserean section and 2(8%) had assisted breech delivery and breech extraction.

Mortality: Inspite of all the care provided 4(16%) out of 25 patients died as a consequence of the condition and 19 (84%) survived.

Morbidity: 2 out of these had acute renal shut down and were dialysed and discharged on 15th and 18th day. The rest minor complication like chest infection, U.T.I, headache etc. were dealt without trouble or long term consequences. None of these patients had any antenatal care. Fits occurred predominantly in third trimester of pregnancy with 18 out of 25 (72%) patients presenting after 34weeks of pregnancy. 14 out of 25 (56%) patients were admitted with intrapartum eclampsia as labour was associated with a rise in Blood pressure which

MODE OF DELIVERY IN PATIENTS WITH ECLAMPSIA

Mode of delivery	Number n=25	Percentage
Outlet forceps delivery	10	40%
Vaccum delivery	5	20%
N.V.D	3	12%
Assisted Breech delivery	2	8%
Emergency L.S.C.section	5	20%

TABLE-2

AGE DISTRIBUTION IN PATIENTS WITH ECLAMPSIA

Age (in years)	Number n=25	Percentage
17—20	15	60%
21—24	6	24%
25—35	4	16%

TABLE-3

predisposes to fits, 7 out of 25 (28%) had antepartum eclampsia and 4(16%) had postnatal eclampsia.

Gynae "B" unit had a total mortality of 14 out of 7,514 admissions(Obstetrics and Gynaecology). 4(28.57%) of these deaths were related to eclampsia, 2 out of these 4, who succumbed had developed DIC and irreversible shock they were referred from periphery in a serious state. One had cerebrovascular accident before death and one died of cardiopulmonary arrest secondary to acute pulmonary oedema .

PERINATAL OUTCOME

	Number n=25	Percentage
Born Alive	15	60%
Alive, Survived	10	40%
Neonatal Deaths	5	20%
a) Premature	2	
b) Respiratory distressc)	2	
c) Birth Asphyxia	1	
Still Births Including those with congenital abnormalities:	10	40%
a) meningocele + telepe	1	
b) Rt.hand, Rt.radius and Rt.ulna absent	1	
c) Anencephalus	2	

TABLE-4

15 out of 25 babies were born alive. 10 out of live borns were full term, alive and had apgar score (A/S)6/10 and above. 5 out of 15 had neonatal deaths in first week of life, 2 out of 5 were premature and developed septicaemia and jaundice and died. One died of birth asphyxia and 2 had respiratory distress syndrome. 10 (40%) out of 25 were still born and I.U.D.4 of them had congenital abnormalities as well. Meningocele and Telepes 1, Anencephalus 2, and 1 had absent right hand, right radius and ulna. 2 out of the remaining 6 were dead and macerated, 4 were fresh still born. So 15(60%) babies were lost.

DISCUSSION

The maternal mortality ratio of Pakistan is 585 per 100,000 maternities Dewherst's Text book (6th edition) of Obstetrics and Gynaecology has given estimated MMR of Pakistan equal to 900/100,000 maternities.

The most common cause of maternal death in a country wide study was found to be haemorrhage (24.69%)[3].This proportion is same as in other developing countries.[4,5] The other important cause is sepsis(20.18%), hypertensive disorders (18.63%) and ruptured uterus (8.7%). This study is representative of deprived class of population with very low literacy rate. Moreover the center is a tertiary referral centre which receives complicated cases from the remote areas of N.W.F.P and most patients usually come in moribund state. Socioeconomic deprivation, the place of delivery and the care and the skill of the birth attendant and availability of transport facilities influence detection of pregnancy induced hypertension and incidence of eclampsia in developing countries. The incidence of eclampsia is higher in primigravidae, with 72% patients in our study being primigravidae. The risk is further aggravated if a primigravida is at extremes of her reproductive age. In one study of

primigravidae under 15 years of age, 17% had eclampsia and 12% had pregnancy induced hypertension P.I.H.[6]

Advancing pregnancy increases the risk of eclampsia. Therefore the risk of eclampsia is particularly high in third trimester of pregnancy. In current study 72% patients were beyond 34 weeks of pregnancy. This is in accordance with a study from Nigeria where 90% of patients had eclampsia after 28 weeks of pregnancy.[7]

The neonatal deaths out of total cases, in this study is 16%which is considerably less than 31.8% as reported from a neighbouring country.[8] The maternal mortality reported from Nigeria is 10.8%.[7]

Improving standards of life decreases maternal mortality in any society. Hence maternal mortality has reduced 12 folds in England over the last 70 years.[9] In developing countries, hypertensive disorders of pregnancy ranks third as a cause of maternal death accounting for 11% of all maternal deaths. 68% of these deaths occur in South Asia. Community based studies in Bangladesh Columbia, Cuba, Ethiopia and Jamaica show between 15—34% of direct obstetrical deaths resulting from hypertensive disorders of pregnancy. In our study eclampsia was the cause of 28.57% of maternal deaths.

Regular antenatal care for recognition and treatment of pregnancy induced hypertension and for prevention of eclampsia, standardized regime of treatment and improved facilities for intensive care appear helpful to reduced maternal mortality. In Zaire, maternal mortality of women who had antenatal care was 0.4/1000 births compared to 5.5/1000 births who did not receive antenatal care.[6] The route of delivery has it's implications on maternal mortality. If delivery is not imminent within 6—8 hours of admission, caesarean section is the better option.

Serious morbidity may greatly influence mortality than convulsions do. Cerebral lesions as a result of eclampsia leave neurological sequel among the patients less often and prove lethal more often. Renal impairment, an important morbidity in cases of eclampsia was recorded in 2 (8%) cases in our study. So the liberal use of intravenous fluids should be discouraged, as there is a greater risk of mortality from pulmonary oedema rather than renal failure. In a maternal mortality report from U.K, 50% of maternal deaths associated with hypertensive diseases of pregnancy were due to pulmonary causes.[11]

The management of eclampsia should be targeted towards the prevention and treatment of pregnancy induced hypertension. This is because risks associated with eclampsia, depends on severity of pregnancy induced hypertension. Thus the aim of treatment is to lower the Blood pressure and to control fluid balance with restriction of I/V fluids rather than prophylactic administration of anticonvulsants in pregnancy induced hypertension (PIH). Vigilance should be maintained in antenatal care, selecting out patients at risk at earlier stage, reducing the rise in Blood pressure and controlling fluid balance. Once the patient has developed the state of eclampsia aim of management is to control convulsions, to lower Blood pressure, stabilize her condition and deliver the baby. In our study, Valium infusion was used to prevent and control convulsions in almost all patients. However it is associated with respiratory depression in neonates .Now $MgSO_4$ is freely available and is a better option for prevention of further convulsions without inhibiting the conscious level of the patient. $MgSO_4$controls convulsions and prevents recurrence of convulsions with minimum adverse effects on the fetus. It is the drug of choice in eclampsia, but in case of it's non availability valium is a good alternative [12]. For control of hypertension methyldopa has been used

since long time. We use it in oral as well as infusion form. nifidipine, hydrallazine and labetolol, are also used by obstetricians. In our unit mainly methlydopa and nifidipine is used. Where available hydrallazine produces a quick response and should be preferred. It does not cause fetal bradycardia viz a potential hazard of labetolol. The aim of treatment is to maintain diastolic B.P less than 90mmHg.

Delivery of the baby is a corner stone in the management of eclampsia. Increasing ceaserean section rate is associated with a fall in maternal mortality. Unless vaginal delivery is imminent, ceasarean section should be the route of delivery after the patient is stabilized. By taking extra care post ceasarean morbidity can be reduced to minimal. An early delivery by ceasarean section rather than waiting for a long time for vaginal delivery reduces convulsion delivery interval and therefore appears to give good fetal outcome as well.

Postnatally careful monitoring is mandatory to prevent postpartum eclampsia. Conscious level should be checked and volume overload avoided, to avoid pulmonary oedema and renal function looked after carefully. Minimum stay after delivery in our unit for all cases of eclampsia has been one week, which was prolonged with complications.

The perinatal mortality in this study was 60%. 10(40%) out of 25 were stillborn and these included those with congenital abnormalities as well. 5(20%) were lost during the neonatal period. So a total of 10(40%) survived.

The perinatal mortality associated with eclampsia is upto 30% even in industrialized countries.[13] The perinatal mortality is particularly higher in the antepartum eclampsia as compared to intrapartum and postpartum eclampsia. Cerebral anoxia and metabolic insult as occurred in eclampsia, along with prematurity and retardation of growth due to pre-existing pregnancy induced hypertension (P.I.H) contribute to the high perinatal mortality associated with eclampsia. Although increasing facilities of neonatal care have reduced the perinatal mortality, Eclampsia is still associated with a fetal loss of 177/1000 births in England.[9] Since perinatal mortality is related more to the duration of pregnancy at delivery, prompt therapy of pregnancy induced hypertension (P.I.H) with prolongation of pregnancy and advances in neonatal care, appear important in decreasing perinatal mortality.

Our hospital has the best neonatal care in the province, but disease control and a decrease in the incidence of eclampsia will eventually bring down the related perinatal mortality.

CONCLUSION

Incidence of eclampsia is alarming in economically deprived population. The maternal and perinatal mortality and morbidity associated with eclampsia is many fold. We should not forget the cost of treatment of such patients and burden on the staff and the hospital. It is therefore important that we should adopt the global initiative provided by the Safe Motherhood concepts. The community should be educated regarding importance of antenatal care, especially during last trimester immediate referral to a tertiary center is necessary in all patients with morbid symptoms of pregnancy induced hypertension (P.I.H).

Vigilant antenatal, intranatal and postnatal management of all such patients will improve the maternal and perinatal outcome related to eclampsia.

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