

ECLAMPSIA;

Trends in maternal morbidities and mortalities. "A review of neglected parameters in developing countries".

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ABSTRACT... Introduction: Hypertensive disorders during the pregnancy are seen in 5- 8% of cases. The worst form is eclampsia, associated with fits or convulsions. It is a rare event in developed countries. Eclampsia can not only lead to maternal mortalities but also cause maternal morbidities. Lot of studies have been done about different aspects of this disease. This study aims to see the maternal morbidities, mortalities but also to dig down the underlying parameters, which are responsible for them. They include Personal, Social, Educational, Medical and National problems. **Objectives:** (1) To compare the Fetomaternal outcome and complication in low risk and eclamptic patients. (2) To find out the underlying parameters or variables associated with this catastrophe. **Study design:** It is a Descriptive Study. **Settings:** Lady Aitchinson Hospital, Obstetrics/Gynecology Unit 1, Lahore, Pakistan. It is a teaching, tertiary care centre affiliated with King Edward Medical University which is a well known all over the Asia. **Duration:** 1st Jan 2008 to 31st Dec 2010. **Subjects and methods:** 10557 patients presented in emergency room for Obstetrical causes. 1200 patients had one or the other form of hypertensive disorders. 400 patients with Eclampsia presented with hypertension, fits and generalized body swelling. The patients who fulfilled the inclusion criteria were included in the study. **Results:** According to the results it is seen that maternal mortality is higher in Eclampsia as compared to low risk ($p=0.01$) The maternal morbidities are also higher than normal low risk population ($p=0.011$). Perinatal outcome is again better in low risk than high risk group ($p=0.099$). It was observed that illiteracy, poor socioeconomic status, lack of awareness about health facilities, poor arrangement at Basic Health units of villages, delayed decision making, delay in referral and management are the underlying variables and pitfalls which have to be addressed. **Conclusions:** It is concluded from this study that although Eclampsia is a major killer and an uphill battle, but the measures can be taken at missed & neglected parameters, responsible for the condition, to reduce the maternal morbidity and mortality.

Key words: Eclampsia, Maternal mortalities and morbidities, complication associated with Eclampsia.

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INTRODUCTION

Hypertensive disorders complicate 5-8% of all the pregnancies. It may range from mild pre-eclampsia to eclampsia, which is the severe form. Pregnancy induced hypertension occurs after 20 weeks of gestation. Chronic hypertension is present before 20 weeks of gestation with many underlying etiological factors.

Blood pressure normally falls during the first trimester of pregnancy which may mask the pre existing hypertension. Blood pressure rises again in the third trimester. Therefore if blood pressure is noted first time in 3rd trimester it may be due to unrecognized pregnancy induced hypertension, often a clear diagnosis is made only after the delivery.

Hypertensive disorders can lead to different maternal and fetal complications in pregnancy. Sometimes mother can even die due to complications. Globally it has been seen that eclampsia is a rare event in developed world, but it is still a major problem for the developing world like Pakistan.

Eclampsia, is a multi organ syndrome which involves almost all systems of the body. It can not only lead to fetomaternal deaths but can also cause certain morbidities like cerebrovascular accidents, myocardial infarction, blindness, pulmonary odema, liver hematoma, HELLP syndrome, coagulopathy and renal failure etc.

It is generally accepted that it is a high risk pregnancy and one of the major killer of the pregnant patients.

There are many variables and near miss which should be addressed in order to combat with this major enemy of the patients. These variables include illiteracy, ignorance, multiparity, low socio economic status, lack of education, poor health facilities, lack of trained health provider in the rural areas, delay in transfer of patients to teaching hospitals and lack of facilities at tertiary care centres, for example blood transfusion services, medicines and availability of operation theatre with lot of referrals from other areas are aggravating factors.

Objectives

The objectives of my study are:

1. To find out major morbidities and mortalities among eclamptic patients.
2. To find out parameters and variables which need attention to reduce incidence of eclampsia.

Hypothesis

Eclampsia is a major life threatening condition with morbidities and mortality. Prevention is possible if we address the neglected variables.

MATERIAL AND METHODS

Setting

This study was conducted in Obstetrics/ Gynaecology unit I Lady Aitchinson Hospital, a Tertiary care, teaching hospital affiliated with King Edward Medical University Lahore, Pakistan.

Duration

Jan 1st 2008 to Dec 31, 2010

Sample size

Total 10557 patients were admitted during the period of study and 400 presented with eclampsia fulfilled the criteria for our study. All the patients were unbooked and age range between 19-42 years. One Hundred and Twenty patients were following the primary health care centres in the peripheral region. Only 125 patients

were having primary school education and 40 had secondary school Education.

Sample Selection

It was done according to following inclusion criteria:

1. The patients who developed hypertension with fits in pregnancy after 20 weeks of gestation.
2. The patients who develop hypertension and fits within 10 days after the delivery.

EXCLUSION CRITERIA

Patients with fits due to epilepsy, cerebral or other metabolic causes

Patients with fits after 10 days postpartum

DATA COLLECTION PROCEDURE

The patients who fulfilled the criteria for inclusion were taken into account. A detailed history was taken, examination done and the investigations required were sent to the laboratory. The examination included general physical examination, blood pressure, pulse, jaundice; anemia temperature, edema, lungs and heart were auscultated.

Obstetrical examination was done to evaluate the lie, fetal heart and vaginal examination for labour induction, or augmentation as needed was done. Twenty patients presented with post partum fits. Mode of delivery was decided for the patients according to the protocol and requirements. During labour patients were followed up by partogram and deliveries conducted by senior residents. The patients were kept for 10 days postpartum for observation and follow up. Only 20 patients were received with postpartum, eclampsia, already delivered at home or other hospitals. No admitted patient developed fits in hospital. 16 deaths occurred out of 400 patients. 2 were due to pulmonary odema (delivered at home, received postpartum) 9 died due to coagulopathy, 3 due to myocardial infarction and 2 due to Pulmonary odema in the hospital.

STATISTICAL ANALYSIS

Data analysis was performed by SPSS version -10. Frequencies and % ages were computed for complications and mortalities.

Chi square test was used to compare the complications with normal patients. Fischers exact test was applied to compare the fetomaternal outcome in eclampsia and normotensive patients. Statistical significance was taken at $p < 0.05$

RESULTS

No patient was found to be booked in our hospital. Only 120 patients were following the health care facilities in villages. One Twenty Five had primary Education and 40 had Secondary School Education. All other were totally illiterate. Majority of them were of poor socio economic status.

During the period of study, a total of 10577 patients came through emergency department for Obstetrical causes. Out of them 1200 patients presented with some kind of hypertensive disorder i.e. gestational hypertension, pre-eclampsia or eclampsia so the total incidence of hypertension in pregnancy was 11.3% ($p=0.01$) 1400 patients presented with full blown picture of eclampsia giving a % age of 33.33%. All were unbooked. Antepartum eclampsia was seen in 62%, Intrapartum 32% and postpartum in 6% of cases, Table I.

Eclampsia	No.	%age
Antepartum	250	62%
Intrapartum	130	32%
Postpartum	20	6%

Table-I. % age of antepartum, intrapartum and postpartum eclampsia (n = 400 Eclampsia)

184 patients out of total had no residual morbidities, 16 deaths occurred due to different causes. 200 patients had either one or more morbidities. The

Complications	Normal n=200	Eclampsia n=200	P-value
Disseminated intravascular coagulation	10	40	0.001
PPH	10	30	0.001
Abruptio Placenta	05	20	0.018
Acute renal failure	01	10	0.001
HELLP Syndrome	-	24	0.001
Cerebro vascular accidents	03	12	0.0760
Adult respiratory distress syndrome	05	10	0.0680
Infection	04	20	0.05
Pulmonary Oedema	02	20	0.001
Blindness	-	04	0.024
Myocardial Infarction	02	10	0.05

Table-II. Comparison of pregnancy related complications between 2 groups
Statistically significant difference $p = < 0.05$

results were compared in 200 low risk patients Table II.

The most important complications include disseminated intravascular coagulation, cerebro vascular accidents, myocardial infarction, postpartum haemorrhage, HELLP syndrome and blindness etc, while the low risk group showed very less complications. The deaths in low risk category were due to pulmonary embolism and pulmonary complication while there were 16 deaths in eclampsia patients due to different causes as shown in Table II.

Regarding the mode of delivery, Caesarean section rate was high in eclampsia as compared to the normal low risk categories Table III.

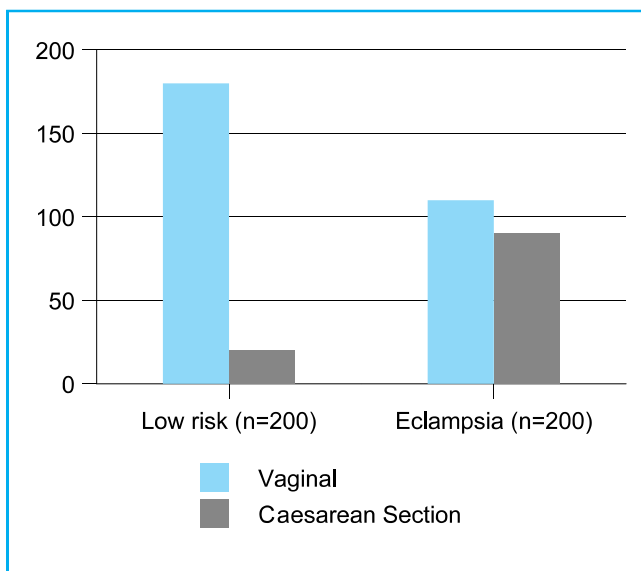
Regarding perinatal outcome again perinatal morbidity

Cause of death	Low risk (n=200)	Eclampsia (n=200)	P-value
Pulmonary oedema	01	02	0.018
DIC	-	09	0.01
Myocardial Infarction	-	03	0.001
Pulmonary Embelism	01	02	0.01

Table-III. Comparison of maternal mortality

Mode of delivery	Low risk n=200	Eclampsia n=400
Vaginal	180	110
Caesarean section	20	90

Table-IV. Mode of delivery



Graphical presentation mode of delivery

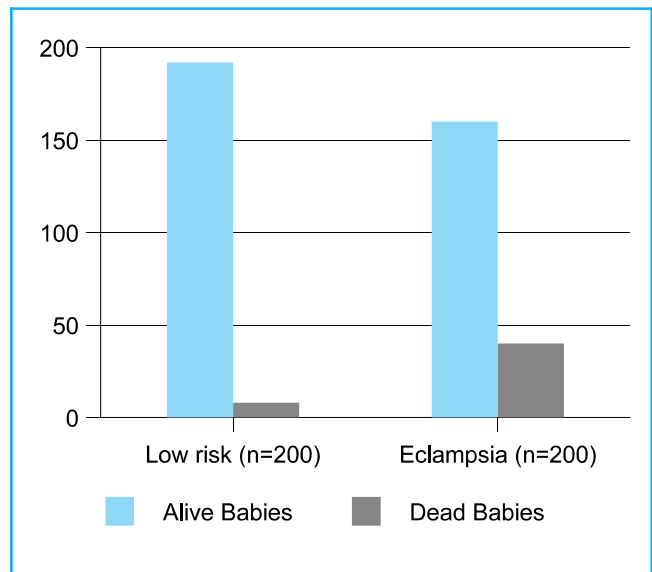
and morality was higher as compared to normal patients. The reason behind mostly the patient's present preterm in Eclampsia, and pregnancy has to be terminated in the favour of mother, Table IV.

DISCUSSION

Inspite of good care during pregnancy the

	Low risk (n=200)	Eclampsia (n=200)
Alive babies	192	160
Dead babies	08	40

Table-V. Perinatal outcome



Graphical presentation perinatal outcome

hypertensive disorders still carry a greater risk to mother's life along with the fetus. Eclampsia is the worst scenario in the spectrum of disorders. In developed countries like United Kingdom, the eclampsia is a rare event occurring only in 1:2000 but it is still 20 times much higher in developing world^{3,4}.

It has been estimated by worldwide analysis that 600,000 women die per year due to pregnancy related complications and more than 500,000 women die of pre eclampsia or eclampsia. Mostly (99%) these deaths are occurring in developing world, which is contributed by social, domestic and financial problems. The women during pregnancy hardly receive any obstetrical care so the condition remains undiagnosed for a longer period of time^{5,6}.

In this study a total of 400 patients presented with full

blown picture of eclampsia .Mean blood pressure ranged from systolic 180- 200mmHg and diastolic 95-130 mmHg. The mean gestational age range was 27 to 36 weeks. The antepartum eclampsia was observed in 62%, Intrapartum 32% and postpartum 6%, Table I.

16 patients died due to some complications as shown in table 3 which shows a very high incidence of eclampsia in our setup^{7,8}. The results are also favoured by another study at Lady Willingdon Hospital Lahore during 2002 indicating that eclampsia is a major cause of maternal death⁹.

Regarding the complications it was observed that disseminated intravascular coagulation, post partum haemorrhage , renal failure, HELLP syndrome, adult respiratory distress syndrome, cerebrovascular accidents, pulmonary odema, myocardial infarction and blindness can lead to different maternal morbidities. A study was carried out in Colombia which showed that 24 % of patients with eclampsia had at least one complication but majority had multiple complications^{10,11}.

Regarding the caesarean section rate and vaginal birth, it was seen that in order to hasten the speed of delivery, sometimes early resort to caesarean section is done, so the incidence of caesarean section is higher in eclampsia as compared to low risk patients.

In view of above findings it is suggested that pregnant patients at risk of pre eclampsia should be identified and high quality antenatal care should be given to reduce maternal mortality. We request the health authorities to strengthen the infrastructure of maternal health care programme focusing on prevention and control of risk factors during pre pregnancy period .Corrective therapeutic interventions are advised to reduce maternal mortality.

The aim of this study was to see underlying areas responsible for such catastrophies. It was found, after

digging deep into the history and health care centres, that most of the patients are illiterate, of poor socio economic status and ignorant. Lack of antenatal care was the major problem seen in this study. People don't know about the complications and problems which can happen during the pregnancy. The attitude of the patients is to seek advice in the 7th month of gestation, without any reason. The second most important factor is the presence of trained personnel at basic health units in villages. Non availability of staff and emergency medication is another issues in this situation.

3rd delay is in treatment at tertiary centre hospitals where the lack of medicines, beds and operation table's availability for emergency situation is again a big problem. So it was concluded from this study that 3delays play a significant role in such problem which are

1. Delay in decision making and seeking antenatal care.
2. Delay in recognition and referral to the tertiary centres.
3. Delay in management in tertiary centre hospitals.

In order to avoid such mishaps here are few suggestions

1. All the National sources must be utilized with full zeal and zest to increase literacy and health status in developing countries.
2. Introduction of public health care seminars.
3. Epidemiological studies must be carried out focusing the health problem among pregnant patients.
4. Trained medical staff must be appointed with emergency treatment availability at basic health units.
5. Availability of day care centres at tertiary hospitals to screen low risk from high risk categories.
6. Effective contraceptive measure programmes

must be influxed.

7. Mass media communication in order to create awareness among the public.

CONCLUSIONS

In order to achieve millennium development goals, we all have to work together to have a “safe motherhood initiative”.

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