

Management Of Eclampsia

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Abstract

Eclampsia is potentially fatal disorder of pregnancy with a significant maternal and fetal morbidity and mortality rate. The main objective of study was to evaluate, morbidity and mortality associated with eclampsia and its management. The retrospective study was carried out at ladywallingdon hospital Lahore consisting over a period of two months starting 5 July 2010 to 5 September 2010. The study comprises of 25 patients. Among 25 patients the 14(56%) were primigravida. Out of 25 patients, 11(44%) were between 21 to 25 years of age, 9(36%) were between 26 to 30 years and only 5(20%) between 31 to 35 years. Most of patients were without family history of eclampsia or hypertension. 16(64%) patients presented with antepartum, 5(20%) with intrapartum and only 4(16%) of the patients presented with postpartum eclampsia. Spontaneous vaginal delivery was the commonest mode of delivery carried out in 16(64%) patients and caesarean section was done in 9(36%) patients. Fits were controlled with diazepam infusion in 7(28%) of the patients. In rest of the 18(72%) cases MgSO₄ was used as anticonvulsant drug. Out of 25 deliveries, no maternal death was observed however 5 perinatal deaths were recorded. Magnesium sulfate is the drug of choice for reducing the rate of eclampsia developing intrapartum and immediately postpartum. However an improvement in antenatal care, upgrading the neonatal facilities and early delivery by caesarean section can improve the perinatal outcome.

Key words: Antepartum, Eclampsia, Intrapartum, Perinatal outcome, Primigravida

INTRODUCTION

In the fifth century, Hippocrates noted the headaches, convulsions and drowsiness were ominous signs associated with pregnancy. In 1619, Varandaeus coined the term eclampsia in a treatise on gynecology.[1] Eclampsia was first described in the 19th century, this oddly named illness refers to a set of life-threatening symptoms, including high blood pressure along with kidney and liver problems, that can suddenly appear late in pregnancy. In some women it can lead to seizures or eclampsia, a Greek word meaning “bolt from the blue” which can be fatal.

[<http://www.pregnancyxl.com/complications/eclampsia/>].

Eclampsia is a life threatening complication of pregnancy that typically is viewed as the end stage of pre-eclampsia. Pre-eclampsia in pregnancy describes a condition where women have excess levels of protein in urine, and where they have high blood pressure. [2,3]. Other symptoms like a lower platelet count and swelling (edema) can be present too. Though symptoms may be managed to a degree, the condition can't be cured by anything but childbirth, and in about 1% of women eclampsia develops, which can cause violent

seizures and coma, and which risks maternal and fetal death in some instances.

[<http://www.wisegeek.com/what-is-eclampsia.htm>] HELLP syndrome is the medical name given to a serious complication of Pre Eclampsia involving a combination of liver and blood disorders.

Eclampsia remains one of the major causes of maternal mortality. In developing countries, it is estimated that 10% of all maternal deaths are associated with eclampsia and approximately 50,000 women die each year having had an eclamptic convulsion. [4]

In addition, there may be severe maternal morbidity associated with eclampsia including cerebral hemorrhages, cortical blindness, renal failure, disseminated intravascular coagulopathy, pulmonary oedema and psychosis. In the United Kingdom, Europe and in the United States, eclampsia occurs in 1 in 2,000 deliveries. Rate is much higher in developing countries i.e. 1 in 100 to 1700 deliveries. In India, its incidence is reported to be 220/10,000 and in Pakistan it is 120/10,000 deliveries. [5]

Risk factors of eclampsia include the following, Nulliparity, family history of pre-eclampsia, prior pre-eclampsia and eclampsia, poor

outcome of previous pregnancy including intrauterine growth retardation, abruption placenta or fetal death, preexisting medical condition like obesity, chronic hypertension, renal disease, protein deficiency, antithrombin deficiency, vascular and connective tissue disorders, gestational diabetes and systemic lupus erythematosus, teen pregnancy, primigravida, patient older than 35 years, multifetal gestations, lower socioeconomic status. [6]

Features of eclampsia include the following, seizures or postictal state, headache usually frontal, generalized edema, vision disturbance such as blurred vision and photophobia, right upper quadrant (RUQ) abdominal pain with nausea, amnesia and other mental status changes. [7]

Currently there is no predictive test that is of sufficient specificity and sensitivity to act as method to screen the population for those at high risk of pre-eclampsia and eclampsia. [<http://smj.sma.org.sg/3605/3605sa1.pdf>].

However the blood examination and urine tests are conducted. A critical feature of the screening routine is the screening interval. Pre-eclampsia can begin and progress to a crisis, including eclampsia in less than 2 weeks. At present, only women who had pre-eclampsia in previous pregnancies or who have symptoms associated with an increased risk receive targeted care i.e. antenatal care. [8]

A number of studies are now been conducted to find out the tests which can better diagnose the eclamptic condition of a pregnant woman. A number of studies are looking to identify markers at molecular or genetic level that will predict pre-eclampsia. Investigators are planning to use a new technique proteomics, which identifies proteins that may not have been found previously by older methods. Kisspeptin is a peptide which has recently been identified in placenta. Its role in the formation and construction of placental blood vessels is now been investigating. Researches are continued to identify novel chemicals in urine of women with hypertension which may be used to identify which of them are likely to

have problems in their pregnancy. Scientists have developed a technique for detecting certain metabolites that predict pre-eclampsia. This discovery should bring a practical test to identify high-risk women much closer. [9]

In the united States, 99% of American obstetricians give magnesium sulphate during labour to women with pre-eclampsia. Recently questions have been raised about the use of prophylactic anticonvulsants. There is debate whether the benefits of such treatment outweigh the harm. Anticonvulsants used are phenytoin, phenothiazines, magnesium sulphate and benzodiazepines. Blood pressure lowering drugs are also used with them. It is also important to maintain fluid volume in the body. [10, 11, 12]

Eclampsia is often insidious in onset and is usually, although not always, preceded by severe pre-eclampsia. Prevention of eclampsia may be achieved by preventing severe pre.eclampsia and by active management of impending eclampsia. [13]

The only cure for eclampsia is delivery of the baby and with it the placenta, which is the seat of the problem. It is likely that eclampsia will prevail until the etiology and treatment directed to this etiology, is found. [14]

The identification of associated factors of pre.eclampsia and eclampsia, more intensive monitoring by relevant levels of staff, and standardized protocols for treatment instituted promptly will lead to better management of severe pre.eclampsia and eclampsia. To achieve improvement in prevention and management of the disease, all cases occurring in the country should be reviewed regularly to provide an analysis and overview of management.

The aim and objective of the study were to evaluate;

- The incidence of eclampsia
- Morbidity and mortality associated with eclampsia
- Management of eclampsia
- Provision of antenatal care during pregnancy

MATERIALS AND METHODS:

The retrospective study was conducted in ladywallingdon hospital Lahore over a period of two months from 5 July 2010 to 5 September 2010. Our sample size was 25 patients. Inclusion criteria of study were patients with antepartum, intrapartum and postpartum eclampsia. Patients of all gestational ages, eclamptic patients of both primigravida and multigravida were included in this study. Patients with pre.eclampsia were excluded from our study.

A specially designed Performa was used to record the relevant data of each patient. It contain the demographic variables such as age, socioeconomic status, gestational age at presentation, time of onset of eclampsia, duration and frequency of seizures, mode of delivery, use of drugs (especially anticonvulsant), maternal and perinatal outcome. All the patients taken in our study were admitted in the hospital (inpatients) both in wards and in emergency rooms. All the patients included in the study were evaluated by detailed history, through physical examination and relevant laboratory investigations like blood complete picture, platelet count, coagulation profile, renal function tests, serum electrolytes, uric acid, blood glucose level and urine protein examination.

RESULTS

25 patients with eclampsia were studied. Following parameters were studied. Figure1 explains women with age of 20-25 years show eclampsia 44%, 26-30 years 36%, 31-35 years show 20% eclampsia in our study. Figure 2 reveals 52% patients were observed with gestational age of 31-35 weeks while 48% with 36-40 weeks. Figure 3 indicates 52% patients were literate and 48% illiterate. Figure 4 shows 80% patients were without any disease history while 20% patients showing history of hypertension before pregnancy. Figure 5 reveals that 24 % patients had family history of hypertension while 76% patients did not have any family history of hypertension.

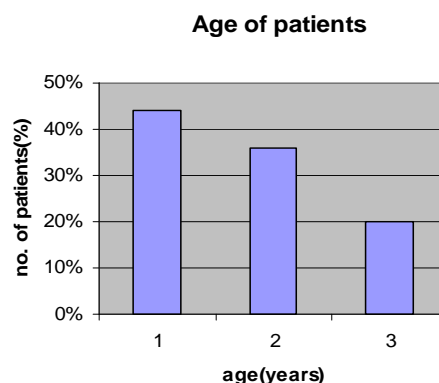


Figure 1: Effect of age of patient on occurrence of eclampsia

1. 20-25 years : 44%
2. 26-30 years : 36%
3. 31-35 years : 20%.

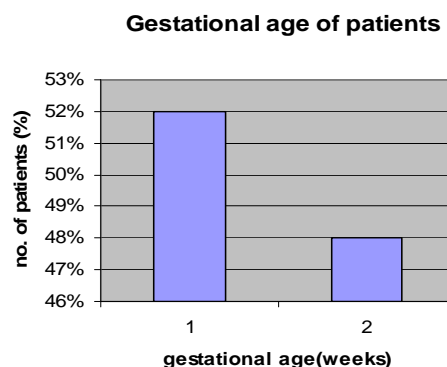


Figure 2: Effect of gestational age on occurrence of eclampsia

1. 31-35 weeks : 52%
2. 36-40 weeks : 48%

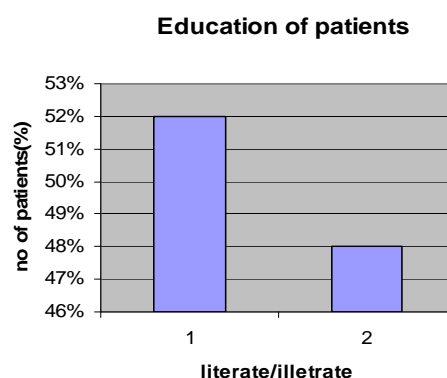


Figure 3: Literacy rate in patient studied

1. literate : 52%
2. Illiterate : 48%

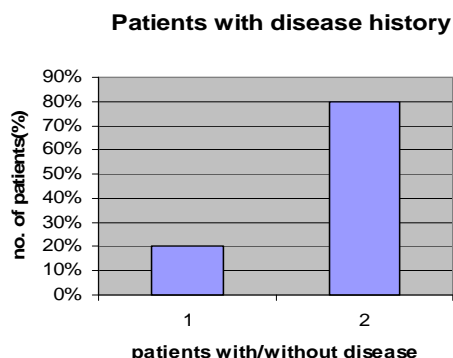


Figure 4: Effect of disease history on occurrence of eclampsia

1. With disease history : 20%
2. Without disease history : 80%

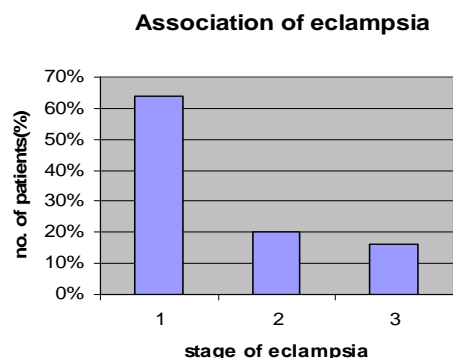


Figure 6: occurrence of various stages of eclampsia

1. Antepartum : 64%
2. Intrapartum : 20%
3. Postpartum : 16%

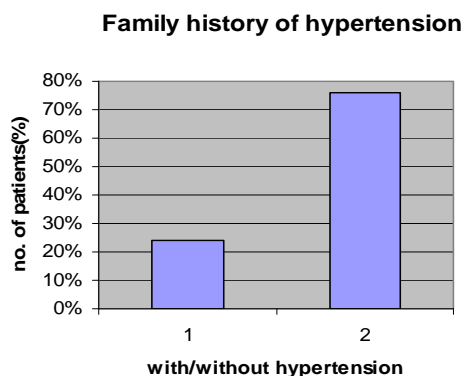


Figure 5: Effect of family history of hypertension on occurrence of eclampsia

1. With hypertension history : 24%
2. Without hypertension history : 76%

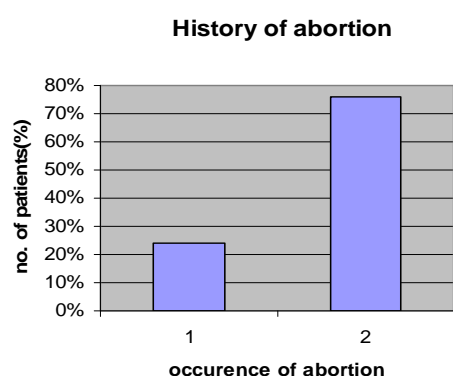


Figure 7: History of abortion in eclamptic patients

1. Previous history of abortion : 24%
2. No abortion: 76%

Figure 6 shows during study 64% patients had antepartum, 20% patients had Intrapartum and 16% patients had postpartum eclampsia. Figure 7 shows that 24% patients were with history of abortion while 76% cases don't have any history of abortion. Figure 8 shows Caesarean section was done in 36% patients and spontaneous vaginal delivery (SVD) was done in 64% patients. Figure 9 reveals that 56% cases of eclampsia observed with women who conceived first time i.e. primigravida while 44% were multigravida. Figure 10 shows 20% babies died. Figure 11 shows that in 72% cases MgSO₄ was used as anticonvulsant and in 28% cases diazepam used.

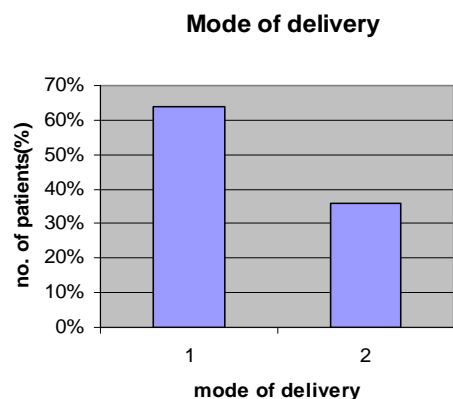


Figure 8: Mode of delivery in eclamptic patients

1. Spontaneous vaginal delivery : 64%
2. Caesarean section : 36%

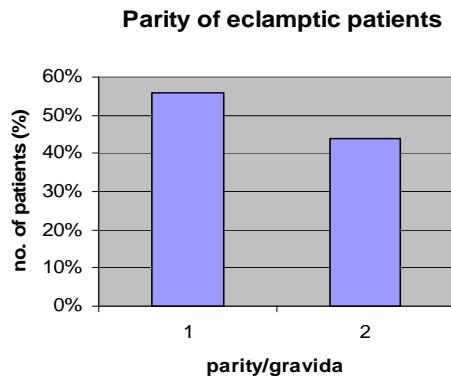


Figure 9: Association of gravida with eclampsia
 1. Primigravida : 56%
 2. Multigravida : 44%

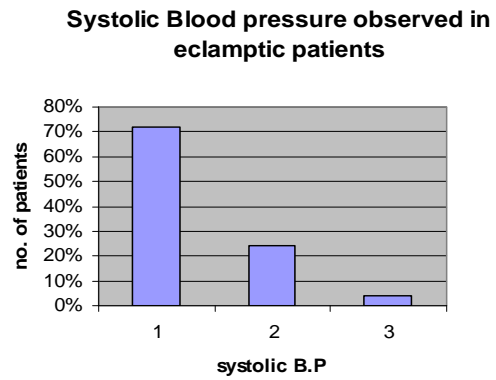


Figure 12: Systolic blood pressure observed in eclamptic patients
 1. 140-160 mmHg : 72%
 2. 170-190 mmHg : 24%
 3. 200-230 mmHg : 4%

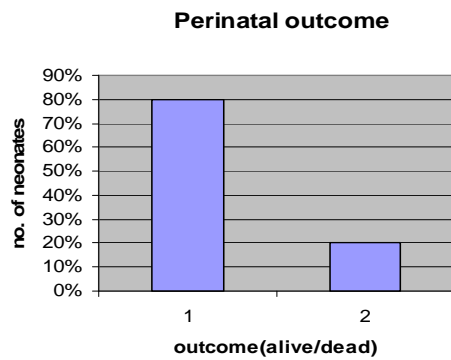


Figure 10: Death rate of newborns in eclampsia cases
 1. Alive babies : 80%
 2. Dead babies : 20%

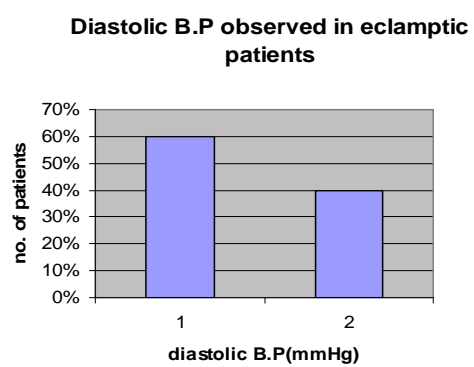


Figure 13: Diastolic blood pressure observed in eclamptic patients
 1. 80-110 mmHg : 60%
 2. 120-150 mmHg : 40%

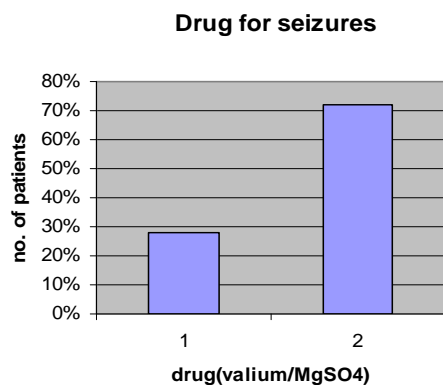


Figure 11: Drugs used most commonly in eclamptic patients
 1. Valium (Diazepam) : 28%
 2. Magnesium sulphate : 72%

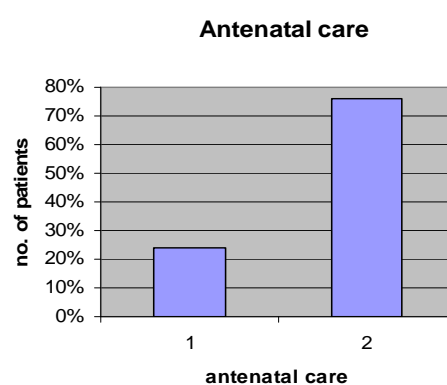


Figure 14: Provision of antenatal care
 1. Recipients of care: 24%
 2. Non-recipients: 76%

Figure 12 and 13 shows the ranges of systolic and diastolic blood pressures observed during study. Figure 14 reveals only 24% patients received antenatal care while 76% did not receive the antenatal care.

DISCUSSION

Eclampsia remains one of the leading causes of maternal and perinatal morbidity and mortality. [http://jpma.org.pk/full_article_text.php?article_id=242] During our study we observed 25 patients. All these patients were managed by following guidelines:

First immediately convulsions are treated with suitable anticonvulsants then blood pressure is controlled and delivery of the fetus is made possible as soon as the mother is stable irrespective of the gestational age. The only cure of eclampsia that we observe was the delivery.

During treatment the eclamptic patients were monitored for respiratory rate, urine output, temperature, pulse, blood pressure and presence of patellar reflex.

The age distribution of patient in our study shows that eclampsia is probably a disease of young women. Maximum gestational age observed was 39 weeks showing the incidence of prematurity in patients associated with eclampsia.

Mode of delivery is very important because delivery is the only cure for eclampsia and it must take as soon as possible after treatment begins. Delivery is always the ultimate goal of treatment and will be attempted regardless of how far along the pregnancy has progressed. In our study spontaneous vaginal delivery is the common mode of delivery. In cases where the baby is less than 32 weeks old, the baby faces all the risks associated premature birth. After delivery, both mother and baby are monitored for any signs of complication or difficulty. Antepartum eclampsia is strongly related to preterm eclampsia, and hence, is also associated with increased risk of perinatal complications and smaller gestational age with worse prognosis.

Eclampsia may or may not be associated with family history of hypertension [www.biomedcentral.com] as our study shows that the patients that had no family history of hypertension and eclampsia also suffering with eclampsia. Eclampsia is preceded by alarming symptoms and sign of pregnancy induced hypertension (PIH). Early detection of signs and symptoms by good antenatal care and initiation therapy will prevent occurrence of eclampsia. Perinatal mortality was 20% with prematurity as the major risk factor. Magnesium sulfate commonly use drug for treatment of convulsion in eclamptic patient. [www.cfids-cab.org/cfs-inform/Magnesium/magnesium00.html]. First the patient was given bolus dose of 4 g IV over a period of 15-20 min then maintenance dose is given. During this period the urine output is continually monitored and patient also monitor for any sign of worsening condition and magnesium toxicity. Magnesium therapy is usually continued for 12-24 hr following delivery and may be stopped depending upon the clinical situation. During our study no significant side effects were observed with MgSO₄ and the results proved superior to diazepam in terms of recurrence of seizures so maintenance therapy was provided with MgSO₄. Though the specific mechanism of action of magnesium sulfate is remain unclear. Hydralazine was most commonly used for initial and maintenance therapy of hypertension. In our study 100% patients received hydralazine.

Gravidity also influences the incidence of eclampsia.

[www.patient.co.uk/doctor/Gravidity-and-Parity] Primigravida (56%) more likely to develop eclampsia compared with the multigravida (44%).

Maximum blood pressure observed that we observed in our study was 220/120 mm of Hg. This high blood pressure is due to the spasms of blood vessels in mother. [www.childbirthsolutions.com/articles/pregnancy/preeclampsia/index.php] The blood flow to the placenta is impaired. This high blood

pressure can damage the placenta and cause the death of the unborn child. This high blood pressure can affect the brain, kidney, liver, and lungs. So, Antihypertensive medications are used to maintain diastolic blood pressure <110 mm Hg. Only 24% patients were recipient of antenatal care. we believe that with advance in antenatal and neonatal care, electronic monitoring and appropriate timing of delivery, the perinatal outcome can be improved.

CONCLUSION

Prevention of eclampsia may be achieved by preventing severe pre eclampsia and by active management of impending eclampsia.

It can be difficult to identify accurately which patient is likely to have seizures. Sometimes a woman will have an eclamptic fit with no prior warning. Eclampsia usually occurs in women who have severe pre eclampsia. The exact cause of eclampsia is unknown. It is likely that eclampsia will prevail until the etiology and treatment directed to this etiology is found. Until such time treatment will be based on symptom and signs of disease. The identification of associated factors of pre-eclampsia and eclampsia, more intensive monitoring by relevant levels of staff, and standardized protocols for treatment instituted promptly will lead to better management of sever pre-eclampsia and eclampsia. However there is required an

- Improvement in the antenatal care,
- Early management of pregnancy induced hypertension thus preventing premature labour,
- Early delivery by caesarean section and
- Upgrading neonatal facilities can improve the maternal as well as perinatal outcome.

To achieve improvement in prevention and management of the disease, all cases of eclampsia occurring in country should be reviewed regularly to provide an analysis and overview of management.

This calls for coordinated efforts and close involvement of the community, governmental/non-Governmental

organizations, doctors, nurses' and the paramedical staff.

Being pharmacist we can play important role in management of severe conditions like eclampsia. Pharmacists in acute or community settings can help recognize and facilitate the prompt management of serious conditions in their patients.

Pharmacists in direct contact with patients can play an integral role in identifying signs and symptoms that require immediate care.

In management of patients with hypertension during pregnancy, this might include a treatment protocol where a pharmacist may be given authority to adjust therapeutic regimens based on guidelines and protocols and pre-established treatment plans intended to optimize patient care.

The ambulatory care pharmacist should be aware of the clinical scenarios of hypertensive urgency and emergency. These two clinical situations may necessitate immediate referral to health care providers thus increasing patient quality of life.

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