Available online at http://www.journalcra.com

International Journal of Current Research
Vol. 9, Issue, 04, pp.48941-48944, April, 2017

INTERNATIONAL JOURNAL OF CURRENT RESEARCH

ISSN: 0975-833X

RESEARCH ARTICLE

AN OVERVIEW OF FETO-MATERNAL OUTCOME IN ECLAMPSIA IN CENTRAL INDIA

***Dr. Samidha Malewar and Dr. Bhakti Gurjar**

Indira Gandhi Government Medical College, Nagpur, India

ARTICLE INFO

Article History:
Received 23rd January, 2017
Received in revised form
19th February, 2017
Accepted 06th March, 2017
Published online 20th April, 2017

Key words:

Eclampsia, Central India.

ABSTRACT

Aim: To study the fetal and maternal outcome in patients with eclampsia in central Indian population.
Background: Eclampsia is associated with devastating maternal and fetal complications, so we decided to study pregnancy outcome in eclampsia patients.
Methodology: A Retrospective study carried out in department of Obstetrics and Gynaecology in Indira Gandhi Government Medical College, Nagpur. Fifty Cases of eclampsia from January 2015 to July 2016 were included in our study. Study deals regarding the association of eclampsia to age of women, parity, gestational age, number of convulsions, mode of delivery, complications and fetal outcome.
Results: Study comprised of 50 pregnant women with eclampsia. We found that 1) Mean maternal age was 23.6 years. 70% were primigravidae. 16 patients (32%) had foetuses with intrauterine growth restriction 2) 50% patients had convulsions after 36 weeks of gestation and mean gestational age was 36.4 weeks 3) Significant association was present between the rising levels of liver enzymes (i.e. SGOT and SGPT) and the maternal complications like HELLP syndrome, DIC and postpartum haemorrhage with p value of <0.001 4) Rising levels of uric acid were not significantly associated with the risk of maternal complications.5)Four(8%) patients required ICU admission, out of which two (4%) had mortality.6) In our study 3 babies were stillborn and 7 died in early neonatal period. The perinatal mortality in our study was 20%.
Conclusion: As in our study all except one were unbooked for antenatal care, the high incidence of eclampsia can be reduced by proper antenatal care, diagnosing, admitting and treating mild and severe preeclampsia cases. Timeliness in the management of these cases can reduce the perinatal mortality.

Citation: Dr. Samidha Malewar and Dr. Bhakti Gurjar, 2017. "An overview of Feto-maternal outcome in Eclampsia in central India", *International Journal of Current Research*, 9, (04), 48941-48944.

INTRODUCTION

In today's era of modern medicine Eclampsia continues to be a major contributor to maternal morbidity and mortality. Owing to various demographic, dietary and ethnic factors Eclampsia is far from being uncommon in India. Eclampsia is defined as the development of seizures that cannot be attributed to other causes or unexplained coma during pregnancy or puerperium in a woman with pre-eclampsia. It's incidence in developing countries varies from 1 in 100 to 1 in 1700 (Duckitt and Harrington, 2005). In India it's incidence is reported to be 220/10000 deliveries. It is estimated that 7% of maternal mortality is associated with hypertensive disorders of pregnancy, particularly Eclampsia. Oxidative stress, angiogenic imbalance, placental ischemia and an inflammatory response have been proposed to play role in the pathogenesis of the disease. In spite of improvement in antenatal care, transportation facility to tertiary care, availability of High Dependency units and Obstetric Intensive Care over last decade, deaths due to Eclampsia continue to occur. Inspite of being one of the biggest threats to maternal life in central India, data regarding Eclampsia is scarce. The main aim of our study is to study the maternal and perinatal morbidity and mortality in patients with eclampsia in our tertiary care centre along with association of eclampsia with different variables like parity and various biochemical markers like SGOT, SGPT, uric acid, creatinine.

Corresponding author:* **Dr. Samidha Malewar,
Indira Gandhi Government Medical College, Nagpur, India

MATERIALS AND METHODS

This study was conducted at Indira Gandhi Government Medical College and Hospital, which is tertiary care hospital draining central India. It was a Hospital based cross-sectional study conducted over a period of one and half year i.e. from January 2015 to July 2016. Hospital database was utilized to obtain information regarding 50 consecutive women with Eclampsia.

Study Design: Retrospective study

All women admitted either with eclamptic seizures or women with gestational hypertension, Pre-eclampsia who developed eclampsia later were included. Women with convulsions attributable to any other cause were excluded from the study. Guidelines suggested by American College of Obstetricians and Gynecologists (2013) were used for diagnosis. We noted the admission details of all women including age, parity, gestation, Blood pressure on admission and presence or absence of Albuminuria. Their Laboratory parameters were studied. A note of further clinical course in terms complications like Abruptio placentae, Renal failure (RF), HEELP Syndrome, Disseminated Intravascular Coagulation (DIC), Cerebrovascular episodes, Need of admission to Intensive Care Unit (ICU) or maternal death was made. HEELP syndrome was further classified as partial or complete as per classification by University of Tennessee (Sibai, 1990). Fetal outcome was measured in terms of maturity at birth, Apgar Score at birth, need of Neonatal Intensive Care Unit (NICU) admission and perinatal deaths. Treatment details, including choice of antihypertensive, anticonvulsant and hospital stay were taken into account. Distribution of women according to presenting features, gestation, parity etc. was studied. Abnormalities in various Laboratory parameters were correlated with further complications like DIC, HEELP Syndrome, PPH, need of ICU admission and subsequent death. Statistical significance was derived using Chi-square test.

RESULTS

The study was conducted at our tertiary care hospital with an average yearly confinement of 5000 deliveries per year. All except one woman were unbooked for antenatal care at our hospital. The mean maternal age was 23.6 years. Most of our patients i.e. 35 out of 50 were primigravidae. Table 1 shows distribution of women according to the number of convulsions at the time of presentation to the hospital. Only one of the women had a prior history of chronic hypertension.

Five out of 50 women had a poor general condition at the time of admission. The mean gestational age at the time of admission was 36.4 weeks. Table 1 also shows distribution of women according to gestational age. Although 25 women were more than 36 weeks of gestation, most women i.e. 16 women (32%) had fetuses with Intrauterine growth Retardation (IUGR). Forty four women had systolic BP between 140 to 160 mm of Hg while most women had a Diastolic BP between 90 to 100 mm of Hg (Table 2), which meant that very high Blood Pressure was not a pre-requisite for occurrence of convulsions. Distribution of women according to Laboratory investigations is depicted in Table 3 and 4.The mean Hemoglobin level was 11.06 gm%. Average levels of Serum creatinine, SGOT, SGPT and Serum Uric Acid were 1.4 mg %,51 IU/ml, 44.4 IU/ml and 6.38 mg % respectively and were higher than the normal. Although the average Platelet count was found to be normal (162,894/cu mm), HEELP syndrome was common in this group. Twenty three (46%) out of 50 women fulfilled laboratory criteria for either Partial or Complete HEELP syndrome. Out of these 5 (10%) had complete HEELP syndrome.

Five patients had Postpartum hemorrhage requiring blood transfusion. Four of the patients required ICU admission for management of complications. Two of these, who met the WHO criteria for 'near miss' could be saved, while two patients died of complications. Thus mortality for ICU admitted patients was 50%. Overall Caesarean section rate was very high with 28 out 50 (56%) babies delivered by Caesarean section. Common indications were Fetal distress, Abruptio placentae and Failed induction of Labor. Out of a total of 50 births, 34 were males and 16 were females. The mean Apgar score at birth was low (5.82). Three babies were still born, while a majority i.e. 35 had a low Apgar score between 3 to 7 at birth. Out of these 7 died in the early neonatal period. Only 12 babies had an Apgar score more than 7 at birth. The average birth weight was also low (2.075 Kgm)

Table 1. Distribution of women according to the number of convulsions and gestational age

No. of convulsions	No of women	Gestational age (weeks)	No. of women
1	23	<28	0
2	6	28-32	4
3	4	32-36	21
>4	17	36-40	25

Table 2. Distribution of women according to Blood Pressure

Systolic BP	No of women	Diastolic BP	No of women
<140	0	<90	0
140-160	44	90-100	32
160-180	5	100-110	16
180-200	0	110-120	1
>200	1	>120	1

Table 3. Distribution of women according to Blood investigations

Platelet count		Serum Creatinine		Blood urea nitrogen		SGOT		SGPT	
In thousand	n	In mg%	n	In mg%	n	IU/ml	n	IU/ml	n
<50	0	<0.8	4	20-40	34	<30	7	<30	20
50-100	10	0.8-1.2	27	40-60	15	30-60	37	30-60	26
100-150	15	1.2-1.4	8	60-80	1	60-100	2	60-100	2
>150	25	>1.4	11	>80	0	>100	4	>100	2

Table 4. Distribution of women according to Serum Uric Acid level

Uric acid level	No. of women
<3	0
3-5	8
5-6	15
6-7	14
7-8	5
>8	8

Table 5. Distribution of babies according to Birth weight

Birth weight in Kgm	No. of babies
<1	2
1-1.5	4
1.5-2	11
2-2.5	22
>2.5	11

DISCUSSION

In this study of 50 patients of eclampsia,70% were primigravidae. This incidence is similar to the results obtained from study conducted by Yaliwal *et al.,* 2011 with 74.48% of primigravida. Study by Gawandi *et al.,* 2014. Got result as 75.27% of cases to be primigravida. In our study, mean gestational age at the time of convulsions was 36.4 weeks and 50% of patients had crossed 36 weeks of gestation in our study. This is similar to study conducted by Gawandi *et al.,* 2014, i.e. 51.12% had convulsions at term. A study conducted by Marinakhanum *et al.,* 2004 showed that 53% of patients had convulsions at term. This is almost similar to results obtained in our study. The term HELLP syndrome was coined by Weinstein in 1982. Numerous studies have been published on its incidence and prognosis since then. Weinstein, 1982 considered abnormal liver function as a part of unique variant of preeclampsia called HELLP syndrome, while Goodlin *et al.,* 1978 considered it an early form of severe preeclampsia. On the other hand, sometimes it is considered as a differential diagnosis of other hepatic conditions like acute fatty liver of pregnancy (Nelson *et al.,* 2013). In addition there are considerable differences regarding the degree of laboratory abnormalities needed to make the diagnosis.

HELLP Syndrome complicated 46% of pregnancy associated with eclampsia in our study which is near to significant association 42.5% observed by Vigil – De – Gracia *et al.,* 2009 in low income countries. Our study gives evidence that there is significant association between SGOT and SGPT levels and HEELP syndrome. As the level of SGOT and SGPT increase, the risk of HELLP Syndrome increases and this association was statistically significant with p value of 0.008. We also found a positive correlation between serum creatinine levels of more than 1.4 mg% and subsequent risk of HELLP syndrome with p value of 0.008 which was statistically significant. Kozic *et al.,* 2011 in a prospective multi centre cohort study found that the odds of having an adverse maternal outcome were higher in women with any abnormal liver function test. Neither change of liver function test result, within 48 hours of admission or from admission to delivery or outcome, nor rate of change were predictive. Maged *et al.,* 2017 also concluded that levels of alanine transaminase, and the platelet count were linked with the presence and severity of pre-eclampsia. Taweesuk, 2014 in their study concluded that some of the risk factors for the development of eclampsia compared to mild preeclampsia were, elevated levels of serum uric acid, serum creatinine and serum SGOT. Higher serum levels of uric acid have been often associated with preeclampsia. Hyperuricemia is a key biochemical feature in preeclampsia with elevated levels of uric acid being diagnosed as early as the 10(th) week of gestation. Traditionally, elevated uric acid levels were considered a result of renal dysfunction known to exist in preeclampsia (Masoura *et al.,* 2015).

However there is upcoming evidence to question a meaningful association between uric acid and the development of preeclampsia. Study by Chen *et al.,* 2016 suggests that that the serum levels of uric acid were only increased after the presentation of clinical symptoms of preeclampsia. Therefore, it is likely that uric acid is not involved in the development of preeclampsia and cannot be an early prediction biomarker of this disease. In our study we did not find a significant association between serum uric acid levels and HELLP Syndrome and other maternal complication as p value is in range of 0.44 to 0.79 for its association with various biochemical parameters. Three of our patients i.e. 6% had placental abruption. This is 3% higher than the Reports published by African Health Sciences (Tukur *et al.,* 2016).
DIC complicated 16% of our patients. The risk of DIC increased significantly as the levels of SGOT and SGPT increased with p value of <0.001.We also found that 10% of patients had PPH in our study. PPH is strongly associated with eclampsia with p value of <0.001. 8% of patients needed ICU admission in our study. The risk of ICU admission increased as the levels of SGOT, SGPT increased (p value of <0.001). While the study conducted by Gawandi *et al.,* 2014 got the results as 19.78% of patients required ICU admissions. Out of these 4 patients, two met the WHO criteria for near miss. There were 2 maternal death in our study. Lima *et al.,* 2017 conducted a secondary analysis of data prospectively collected in a Brazilian multicenter cross-sectional study on women who had potentially life-threatening conditions. Among WHO's criteria for severe maternal morbidity and near miss, eclampsia, was one of the commonly associated factor with maternal death. Use of magnesium sulfate was a protective factor as per their study. In our study 56% of babies were delivered by Caesarean section. The presence of eclampsia alone was not an indication for caesarean delivery. The decision to perform caesarean delivery was based upon multiple factors like foetal gestational age, foetal status, stage of labour and cervical bishops score. The perinatal mortality in our study was 20% as compared to 29.5% in the study conducted by Gawandi *et al.,* 2014

Conclusion

In our study on 50 eclamptic patients we found that

- 35 patients (70%) were primigravidas.
- 50% patients had convulsions after 36 weeks of gestation and mean gestational age at the time of convulsion was 36.4 weeks.
- Significant association was present between the rising levels of liver enzymes (i.e. SGOT and SGPT) and the maternal complications like HELLP syndrome, DIC and postpartum hemorrhage with p value of <0.001.
- The rising levels of uric acid are not significantly associated with the risk of maternal complications.

- Maternal mortality was 4% and perinatal mortality in our study was 20%.

As in our study all except one were unbooked for antenatal care, we can propose that the high incidence of eclampsia can be reduced by proper antenatal care, diagnosing, admitting and treating mild and severe preeclampsia cases. The medical officers and nurses working at periphery should be trained properly regarding proper and early management of pre-eclampsia and eclampsia. Early decision for mode of delivery has a potential for reducing maternal as well as perinatal mortality.

REFERENCES

American College of Obstetricians and Gynecologists: Hypertension in Pregnancy. Report of the American College of Obstetricians and Gynecologists Task Force on Hypertension in Pregnancy. Obstet Gynecol 122: 1122, 2013b.

Chen, Q., *et al*. 2016. Serum uric acid may not be involved in the development of preeclampsia. *J Hum Hypertens.*

Dr. Prabhaka Gawandi, Dr. Mrs. M. A. Shinde, Dr. Jadhav, 2014. Clinical study of eclampsia patients at DR.V.M.Government medical college Solapur, India. IOSS *Journal of Dental and Medical Sciences*, Volume13,Issue 7, July, pp 10-16.

Duckitt, K., Harrington, D. 2005. Risk factors for preeclampsia at antenatal booking: systematic review of controlled studies. BMJ, Mar12; 330(7491); 565.

Goodlin, R.C., Cotton, D.B., Haesslein, H.C. 1978. Severe edema-protienuria-hypertension gestosis. *Am J Obstet Gynecol.,* 132:595

Kozic, J.R., Benton, S.J., Hutcheon, J.A., Payne, B.A., Magee, L.A., Von Dadelszen, P. *et al*, 2011. Abnormal liver function tests as predictors of adverse maternal outcomes in women with preeclampsia. *J Obstet Gynaecol Can.,* Oct;33(10):995-1004

Lima, H.M., *et al*. 2017. Factors associated with maternal mortality among patients meeting criteria of severe maternal morbidity and near miss. *Int J Gynaecol Obstet.*

Maged, A.M., *et al*. 2017. Association of biochemical markers with the severity of pre-eclampsia, *Int J Gynaecol Obstet.*

Marinakhanum *et al*., 2004. Fatema Ashraf,Humaira Sahrin.A Clinical study of 100 cases of Eclampsia in Rajshahi Medical College Hospital. TAJ, December, Vol 17 (2);80-83

Masoura, S., *et al*. 2015. The involvement of uric acid in the pathogenesis of preeclampsia.Review article. *Curr Hypertens Rev.*

Nelson, D.B., Yost, N.P., Cunningham, F.G. 2013. Acute Fatty Liver of Pregnancy:clinical outcomes and expected duration of recovery. *Am J Obstet Gynecol.,* 209(5):456.el.

Rajashri Yaliwal, P.B.. Jaju, M. Vanishree, 2011. Eclampsia and Perinatal outcome: A Retrospective Study in a Teaching Hospital. *Journal of Clinical and Diagnostic Research,* October, Vol-5(5);1056-1059

Sibai, B. 1990. Tenesse Classification. Hemolysis,elevated liver enzymes,low platelets (The HELLP Syndrome):much ado about nothing? *Am J Obstetrics and Gynecology,* 162 (2) : 1000-6

Taweesuk, P., Tannirandorn, Y. *J. 2014.* Clinical and laboratory parameters associated with eclampsia in Thai pregnant women. *Med Assoc Thai.,* Feb; 97(2):139-46.

Tukur A. Jido, 2012. Eclampsia: Maternal and Fetal Outcome. African Health Sciences, 12(2);148-152

Vigil De Gracia, P. 2009. Maternal Death due to Eclampsia and HELLP Syndrome. *International Journal of Gynaecology and Obstetrics,* 97(4)

Weinstein, L. 1982. Syndrome of hemolysis, elevated liver enzymes, and low platelet count; a severe consequence of hypertension in pregnancy. *Am J ObstetGynecol.,* 142:159

****