Maternal and perinatal outcome of eclampsia in SDM Medical College Department of Obstetrics and Gynaecology- a 5 years retrospective study

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Abstract

Background: A 5 year retrospective study is carried out in the SDM College of Medical Science and Hospital from 2011 to 2015 to determine the factors influencing the fetal and maternal outcome. The purpose of the study is to analyses the role of eclampsia on maternal and neonatal health and the complications associated with eclampsia.

Method: The present study is a 5 year retrospective study from 2011 to 2015 in a 104 eclamptic patients above 28 week of gestational age. The data was collected from the medical records of the patients with eclampsia and the incidence of antepartum, intrapartum and postpartum eclampsia and its influence on maternal complications like anaemia, renal complications, CNS complications, ocular complications, disseminated intravascular coagulation, abruption, HELLP syndrome, pulmonary oedema, SICU admission, maternal deaths and perinatal morbidity and mortality were analysed. The benefits of medical management with Magnesium sulphate also studied.

Results: The study showed that the incidence of eclampsia in 5 year is 0.45%, out of which the percentage of antepartum eclampsia being maximum 71.15%. These mothers with eclampsia had life threatening complications like anaemia (32.6%), renal complications like renal failure (7.6%), CNS complications in the form of cerebral hemorrhage (6.7%), ocular complications (3.8%) which included retinal detachments, macular oedema, disseminated intravascular coagulation (4.8%), abruption (4.8%), HELLP syndrome (9.6%), pulmonary oedema (2.8%), SICU admission (14.4), maternal deaths (3.8%). The perinatal outcomes studied with the maximum preterm labours(45.1%), intrauterine deaths (17.6%) early neonatal deaths (12.3%) whereas the overall full term vaginal deliveries and LSCS were 20.1% and 33.65% respectively.

Conclusion: Eclampsia has a greater threat of the maternal and perinatal heath. The early referral to tertiary centre, transport facility, use of Magnesium sulphate has decreased the severity. . Early detection and intensive management is essential for improving the maternal and fetal outcome.

Keywords: Eclampsia, Maternal mortality, Perinatal outcome, Tertiary centre

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Introduction

Eclampsia is one of the life threatening condition and continues to be the major cause of maternal and perinatal mortality world wide. The term eclampsia mean "like a flash of lightening" in Greek. Its incidence varies from place to place. In India its incidence is 1.56%[(1)] and ranges from 0.18 to 4.6%, with maternal mortality being as high as 8-14%. The incidence in developed countries ranges from 0.29-0.75% due to adequate antenatal care.[(14,15)]

Over half of million maternal deaths due to eclampsia occur in developing countries like Nigeria.[(18)] Duley estimated globally that globally around 50000 women die of eclampsia annually.[(3)] The perinatal mortality ranges from 14.6%[(5)] to 47.4%,[(6)] and morbidity is as high as 56%[(7)] Hence there is a need of periodic review as it is becoming an issue of concern in obstetric care.

Eclampsia in addition to hemorrhage and embolism is a leading cause for maternal morbidity and mortality. With good antenatal care by the recognized hospitals and by treatment of severe pre eclampsia in early stage, the incidence of eclampsia can be decreased.[(4)]

In developing countries, the high incidence of maternal morbidity and mortality is due lack of early management of severe pre eclampsia, late referral, delay in hospitalization, lack of transport facility,[(17)] unbooked status of the patient and multiple episodes of convulsions prior to admission.[(8)] This can be prevented by providing a good antenatal care and aggressive timely management of eclampsia.[(2,4,11)]

Materials and Methods

Source of data: The data was collected from patients with eclampsia admitted for evaluation under obstetrics and gynaecology department, SDM College of Medical Sciences and Hospital, Sattur, Dharwad from 1st January 2011 to 31st December 2015

Study design: This study was a 5 year retrospective study of the patients with eclampsia admitted for evaluation under obstetrics and gynaecology department at SDM College of Medical Sciences and Hospital.

Data collection: The present study is a retrospective study in a 5 year of duration from 2011 to 2015 in a 104 eclamptic patients above 28 week of gestational age.

Out of these cases 33 patients were booked in SDM medical college and 71 cases included unbooked, referred cases. These cases were medically managed with Magnesium sulphate with Zuspans regimen. The incidence of antepartum, intrapartum and postpartum eclampsia and its influence on maternal complications like anaemia, renal complications, CNS complications, ocular complications, disseminated intravascular coagulation, abruption, HELLP syndrome, pulmonary oedema, SICU admission, maternal deaths and perinatal morbidity and mortality were analysed.

Inclusion criteria

- Pregnancy with eclampsia
- Gestational age >28weeks
- Antepartum, Intrapartum and postpartum eclampsia

Exclusion criteria

- Patients with pre-existing diabetes mellitus
- vascular, renal, connective tissue disorders
- cardiac diseases
- polyhydramnios
- previous h/o epilepsy

Investigation: All cases underwent routine investigations like Hemoglobin, blood group and Rh typing, urine albumin, blood urea, serum creatinine, uric acid, liver function test, coagulation profile and fundoscopy. BP monitoring was done, where the mean BP was recorded to be >160/100mmHg.

Medical management: The cases with eclampsia (antepartum, intrapartum, postpartum) managed with the Magnesium sulphate[20] by Zuspans regimen by giving loading dose 4gm of 20% MgSO4 slow IV over 20 minutes followed by maintainance dose of MgSO4 1gm per hour for next 24 hours or 24 hours after the delivery whichever is earlier. MgSO4 toxicity monitored carefully by patellar reflex, respiratory rate and urinary output (<30ml/hr).

Results

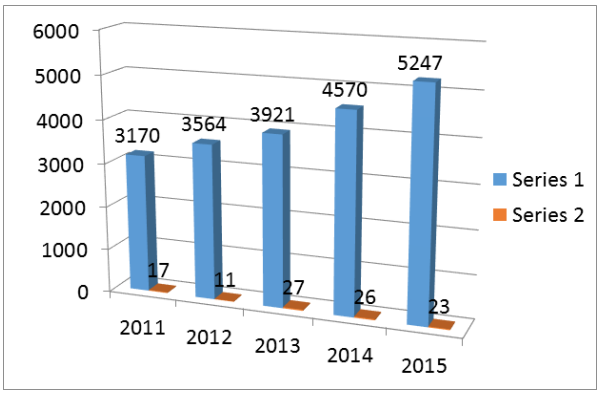

Fig. 1: Shows the total number of deliveries per year in first series and total number of eclampsia in second series

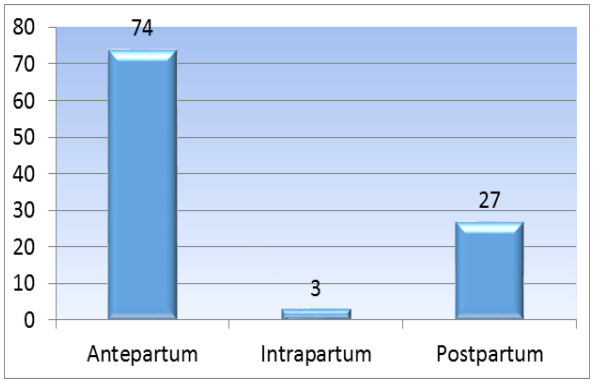

Fig. 2: Shows the total number of antepartum, intrapartum, postpartum eclampsia in 104 patients

Fig. 1 shows the incidence of eclampsia over a period of 5 years from 2011 to 2015 in SDM Medical College, Dharwad. The first series denotes total number of deliveries and second series denotes the number of eclamptic patients.

The study concluded that the overall incidence of eclampsia in 5 year is 0.45%, out of which the percentage of antepartum eclampsia being maximum 71.15% followed by postpartum 25.96% and intrapartum which was 2.8% (Fig. 2).

Table 1: Shows the total number of cases of antepartum, intrapartum and postpartum eclampsia and maternal complications

	Antepartum	Intrapartum	Postpartum	Total (n=104)
No	74	3	27	
Anaemia	22	1	11	34 (32.69%)
Renal complications	3		5	8 (7.69%)
CNS complications	4		3	7 (6.7%)
Abruption	5			5 (4.8%)
Visual complications	4			4 (3.8%)
HELLP	8		2	10 (9.61%)
DIC	3		2	5 (4.8%)
Pulmonary edema	2		1	3 (2.8%)
ICU admission	9	1	5	15 (14.42%)

Table 2: Shows the mode of delivery and maternal outcome in the study

Maternal outcome	No (n=104)	Percentage (%)
FTVD	21	20.1
PTVD	47	45.1
LSCS	35	33.65
Subtotal hysterectomy	1	0.96
Maternal deaths	4	3.84

Table 3: Shows the perinatal outcome of the new born of eclamptic mothers

Neontal outcome	No	Percentage (%)
NICU admissions	34	30
Mother side	45	39.8
Intrauterine deaths	14	17.6
Early neonatal deaths	20	12.3

Table 1 shows the maternal complications like anaemia, renal complications, CNS complications, ocular complications, disseminated intravascular coagulation, abruption, HELLP syndrome, pulmonary oedema, SICU admission, maternal deaths in antepartum, intrapartum and post partum eclampsia.

Antepartum eclampsia had maximum preterm labours(45.1%), intrauterine deaths (17.6%) early neonatal deaths (12.3%) whereas the overall full term vaginal deliveries and LSCS were 20.1% and 33.65% respectively. Table 2 shows the chart explaining maternal outcome and mode of delivery. The maternal morbidity is significantly high with unbooked cases with lower socioeconomic status. The study also showed that the most common cause of perinatal mortality is prematurity[12,13] with NICU admissions of 30%. But around 39.8% of babies were shifted to motherside as shown in Table 3. 1 patient with post partumeclampsia underwent subtotal hysterectomy for uncontrolled post partum hemorrhage. There were 7 cases of twin pregnancies, out of which 2 cases had one live birth and one fresh still born neonate.

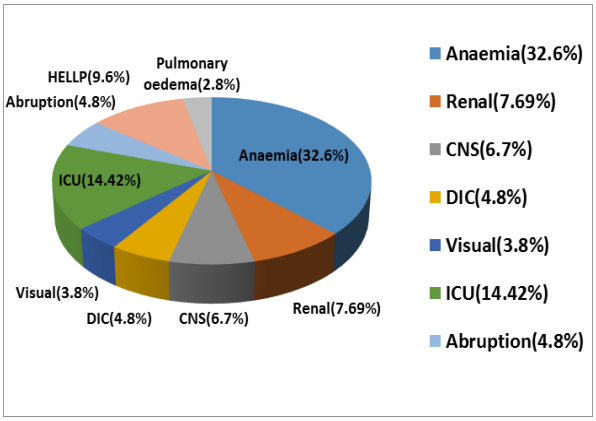

Fig. 3: Pie chart showing the maternal complications in eclamptic patients

Fig. 3 Pie chart showing the maternal complications like anaemia (32.6%), renal complications like renal failure (7.6%), CNS complications in the form of cerebral hemorrhage (6.7%), ocular complications (3.8%) which included retinal detachments, macular oedema, disseminated intravascular coagulation (4.8%), abruption (4.8%), HELLP syndrome (9.6%), pulmonary oedema (2.8%), SICU admission (14.4), maternal deaths (3.8%) were also analysed, which were higher as compared to non eclamptic patients.[21]

Statistic analysis: The collected demographic information, maternal and neonatal outcome measures were entered in Microsoft excel sheet and the variables were summarised using number and percentages.

Discussion

The incidence of eclampsia and the total deaths due to eclampsia is 0.45%. This is comparable to other Indian studies[1,8] and also studies of other region.[9] This incidence is also much less than the incidence calculated in the study conducted in Shri B M Patil medical institute Bijapur which was 1.82%[4] and Sunita Mor in a study from Jan-Dec 2013 was 1.08%[22] in Haryana (Table 4). But this incidence is still higher as compared to developed countries like United Kingdom where eclampsia is seen in only 0.05% of total deliveries.[23]

Table 4: Shows the similar comparable results with present study

Institute	Author	Duration	Study type	Incidence
Shri BM Patil Medical College Hospital and Research Center, Bijapur, Karnataka, India	Rajasri G. Yaliwal, P.B. Jaju, M. Vanishree	1/1/2001 – 31/12/2010	Retrospective	1.82%
Pt. B.D. Sharma PGIMS, Rohtak, Haryana, India	Sunita Mor, Daya Sirohiwal, Reetu Hooda	January to December 2013	Prospective	1.08%
SDM institute of medical science and hospital, Sattur, Dharwad, Karnataka, India	Rita D, Dhanalaxmi L	1/1/2011 to 31/12/2015	Retrospective	0.45%

The increase of maternal and perinatal morbidity is due to lack of antenatal care and referral to the tertiary centre in the complicated stage.[2] Most of these cases are unsupervised in their antenatal period. The incidence of eclampsia are more seen in lower socioeconomic class population. The patients were managed for hypertension with antihypertensive, where the mean BP was recorded to be >160/100mmHg.[22] Medical management with MgSO4 by intravenous Zuspan regimen was given.[20] 5 patients needed Phenytoin for the management of convulsions. The pregnancy was then either terminated timely with T Misoprostol (PGE1) 25-50 mcg per vaginally, Dinoprostone gel (PGE2) 0.5mg and augmented with oxytocin or amniotomy or by LSCS for obstetric indication or salvageable babies.[4,10,11] There were 3 intrapartum eclampsia cases, in which the patient had convulsions in their active labour. 34 anaemic cases were seen where the cause of anaemia were nutritional deficiency due to low socioeconomic state, antepartum or post partum hemorrhage. 8 patients had renal failure where creatinine was >1.5U,[16] 7 patients had CNS involvement in the form of cerebral hemorrhage, DIC in 5 patients i.e. 4.8% which was higher than 2% in other reports,[19] visual involvement in the form of retinal hemorrhage and macular edema. The study included 7 cases of twins in which 2 cases had one living newborn and one early neonatal death. One referred case with post partum eclampsia underwent subtotal hysterectomy for post partum hemorrhage. Maternal mortality was 3.84% which was comparable to other Indian studies[22] where the cause of death was pulmonary edema with DIC. One patient with antepartum eclampsia had previous history of eclampsia in first pregnancy.[8]

About 15 patients were admitted in ICU with 3 patients going into pulmonary oedema. Majority of intrauterine deaths were seen with unbooked referred cases (17.6%). Even though 45 babies were given mother side, about 34 babies needed neonatal ICU care in view of prematurity. 35 cases underwent LSCS for salvageable babies and other obstetric complications.[10,11] About 14 newborn had early neonatal deaths for prematurity and respiratory distress.[12,13]

Conclusion

Eclampsia is still remaining the major problem in developing countries and is one of the cause of maternal and perinatal mortality due to lack of antenatal care and lower socioeconomic status. Incidence is higher in cases referred to hospitals as compared to supervised patients. One maternal death occurs in every 25 eclamptic patients. Early detection and intensive management is essential for improving the maternal and fetal outcome. Moderate reduction of maternal morbidity and increase perinatal survival in our institute was possible due to wider use of magnesium sulphate, timed delivery, and proper implementation of emergency obstetric care facility to mother with eclampsia.

Ethical approval

The study was approved by the Institutional Ethical committee.

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