Research Article

Maternal and perinatal outcome in women with Eclampsia: A retrospective study

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Abstract

Introduction: Eclampsia continues to be a major problem particularly in developing countries, contributing significantly to high maternal & perinatal morbidity & mortality. **Methods:** A retrospective study was conducted between May 2010 and April 2015 among 542 patients who presented in emergency with eclampsia and initially admitted in department of Obstetrics and Gynecology and subsequently were managed at intensive care unit of teaching hospital in Bilaspur, Chhattisgarh**. Result:** Out of 14, 902 pregnancies in the 5 year period of study in our tertiary care hospital, the estimated incidence was 3.5%, 85.6% patients had not received any regular antenatal care & 70.6% were primigravida. Majority of the cases (81.8%) as antepartum/ intrapartum eclampsia in the age group of 20-24 years (66.2%).Mostly (62.4%) patients presented at term, 69.7% had vaginal delivery, while 30.3% underwent caesarean section. The main factors contributing to maternal deaths (8.4%) were puerperal sepsis (11%), oliguria (8.1%) and pulmonary edema (5.9%).**Conclusion**: Eclampsia is found to cause high incidence of maternal mortality & morbidity, which is also responsible for high rates of perinatal mortality. By creating an awareness and improvement in quality of basic antenatal care can reduce the incidence of eclampsia.

Keywords: Eclampsia, Maternal, Perinatal, Morbidity, Mortality.

Introduction

Hypertensive disorders of pregnancy (HDP) are the most common medical complication occuring in 12-22% of all pregnancy [1]. It is commonly used to describe a broad spectrum of hypertensive related disease during pregnancy. It may appear for the first time during pregnancy (Preclampsia, eclampsia, gestational hypertension, HELLP syndrome) or may be the result of already existing medical problem (chronic hypertensive renal disease, systemic disease) [2]. Pre-eclampsia refers to recent onset of hypertensive (Systolic blood pressure ≥ 140 mm Hg or diastolic blood pressure ≥ 90mm Hg) & proteinuria (≥ 0.3 gm protein in 24 hours urine specimen) after 20 weeks of gestation [3]. It is considered to be severe if SBP> 160 or ≥ 110mm Hg DBP or proteinuria ≥ 5gm in a 24 hours urine specimen or oliguria, cerebral or visual disturbances, pulmonary edema, impaired liver function or thrombocytopenia is present [4].

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Eclampsia is defined as the occurrence of new onset convulsion/coma, in a pre-eclampsia woman. Varadaeus coined the term eclampsia derived from the Greek word which means like a flash of lightening [5]. Alexander Hamilton described eclampsia as a disease which is always attended with the utmost hazards and frequently kills the woman like a fit of apoplexy. There is an appreciable variation in the proportion of maternal mortality due to these disordered between the low & high income group, maximally noted to occur in the low-middle income countries [3]. We conducted this study to determine the trend of eclampsia in our tertiary care institute, associated complications & effect on maternal & fetal outcome.

Methods

This five year retrospective observational study included 521 patients, who presented in emergency with eclampsia admitted between April 2010 and March 2015, in the department of obstetrics & Gynecology and

were managed at intensive care unit of Chhattisgarh Institute of Medical Sciences, Bilaspur a government medical college in the tribal dominated region of Chhattisgarh state. A thorough evaluation of each case was done and included detailed information regarding patient's age, residence, education, socio-economic status, previous antenatal care, gestational age at the time of presentation, parity. Following that a thorough general physical, abdominal and pelvic examination was carried out, and necessary investigations like hemogram, liver & renal function tests, absolute platelet count, coagulation profile, platelet count, fundoscopy were conducted. Appropriate medical or surgical management was done as per existing protocol. The details and data were compiled, included maternal morbidity, mortality and fetal outcome. The data were analysed and presented as frequencies and percentages.

Result

This retrospective study was carried out at intensive care unit with co-operation of Dept. of obstetrics and gynecology, CIMS a govt. medical college and tertiary referral unit in our area. A total of 14,876 patients delivered from 1st April 2010 to March 2015, out of which 521 (3.5%) patients presented as eclampsia in emergency. Total incidence of eclampsia in our study come out to be 3.5%. Analysis of demographic data showed 20-25 yrs. as most common age of presentation (65.4%) & illiteracy in majority of patients (85.1%). It also showed that majority of patients were of low socio-economic status (70.6%) & belonged to rural area (89.1%). Analysis of clinical history showed that out of 521 patients, 369 were nulliparous (70.8%) and 152 (29.2%) patients were multiparous. 325 patients presented at > 37wks of gestational age (62.4%), 450 patients (86.4%) were unbooked cases and only 71 cases were booked in antenatal period.

Table 1: Demographic Details N=521.

Age in years	**Frequency**	**Percentage**
15-19	53	10.2
20-24	341	65.4
25-29	89	17.2
30-34	28	5.3
>35	10	1.9
Educational Status		
Educated	78	14.9
Uneducated	443	85.1
Residence		
Urban	57	10.9
Rural	464	89.1
Socio-economic status		
Low	368	70.6
Lower-middle	106	20.4
Middle	47	9

Table 2: Parity, Gestational age, previous antenatal care (N=521).

Parity	**Frequency**	**Percentage**
Nulliparous	369	70.8
Multiparous	152	29.2
Gestational age (wks)		
20-25	19	3.7
26-31	79	15.2
32-37	98	18.7
>37	325	62.4
Previous antenatal care		
Booked	71	13.6
Unbooked/Irregular		
ANC	450	86.4

Table 3: Fetal outcome.

	Frequency	Percentage
Live-born	372	72.5
Still born	96	18.7
Neonatal death	45	8.8

Table 4:- Major Complications* and mortality (N=521).

Complication	Frequency	Percentage	Mortality	Percentage
Puerperal sepsis	58	11.1	13	2.5
Oliguria	42	8.1	6	1.1
Pulmonary edema	31	5.9	8	1.5
HELLP	25	4.8	12	2.3
PPH	19	3.6	2	0.3
Post-partum psychosis	7	1.3	2	0.3
CVA	6	1.1	1	0.2

In our study, out of 521 patients with eclampsia, 428 (82.1%) presented as antepartum /intrapartum eclampsia & 93 (17.9%) as postpartum eclampsia. Mode of delivery in 69.7% patients was normal vaginal delivery and caesarean section in 30.3%. Major maternal complications observed were puerperal sepsis (11%), oliguria (8%), pulmonary edema (6%) HELLP syndrome (4.8%), postpartum hemorrhage (3.6%), postpartum psychosis (1.3%) and Cerebro vascular hemorrhage (1.1%). Maternal mortality rate due to eclampsia was (8.4%) 44 patients out of 8 patients died undelivered.

Fetal outcome in our study was live-births in 372 (72.5%), still birth in 96(18.7%) and early neonatal death 45 (8.8%).

Discussion

Pre-eclampsia/ eclampsia have remained a leading cause of maternal mortality throughout the world, incidence being higher in developing countries due to illiteracy, poor antenatal care and poverty. Incidence of eclampsia and associated maternal mortality and morbidity remain high in the developing countries [4].

According to National eclampsia registry (NER) incidence of hypertensive disorders in India is observed to be 10.08% (11,266 out of 1,11,725 deliveries) out of which 2.5% presented with eclampsia.[5]

In the present study, higher incidence (3.5%) of eclampsia could be due to lower compliance with antenatal clinic and limited access to specialist care. [7]

In our study, the demographic data analysis showed that 89.1% patients were from rural area, 85.1% were illiterate and 70.6% belonged to low socio-economic status having lack of resources and access to medical care. The above trend was observed mainly because in Chhattisgarh, where the study was conducted, out of 25.5 million population, 18% live in rural areas 37% account for trible population [6]. In present study, 70% patients were multiparous & 75.6% were of <25Years of age. Similar result were reported in a study conducted by Rasaly et al. & Warden et al, in 2002 [8,9] and in another study by Chaturvedi et al. [6]

67% patients in our study was primigravida, similar to the result of study by Sheraz's et al. 69.1%, Datta MR et al 66% and Shaheen B et al 69% .[10,11,12]. Chaudhary et al reported in a study that eclampsia was commonest at term pregnancy, (72.34%) supporting similar result in our study where 62.4% patients presented at term gestation. [13].

In a study by Tuffnell et al where 88.9% patients were unbooked suggested that adequate antenatal care facilitates early identification of risk factors and appropriate intervention to prevent progression to eclampsia similar to our study where 86.4% patients were not booked in antenatal period.[14]

In our study, 428 cases (82.1%) of eclampsia were ante-partum/intrapartum and 93 cases (17.9%) were postpartum, similar to result reported by Joshi et al [15], Douglas & Redman [16] and EL Nafaty [17]. Vaginal route was found to be the mode of delivery in majority of the patients in our study (69.7%). Perinatal mortality

rate in our study was found to be 27.5% comparable to a study by Yaliwal et al which reported it to be 35%. [18,19]. Puerperal sepsis (11%), oliguria (8%), pulmonary edema (6%), and HELLP (4.8%) were observed to be most common complications [20]. In our study, the maternal mortality rate due to eclampsia was ovserved to be 8.4% (44 patients) as compared to other studies like Somegowda (5.4%) and Nobis PN (11.54%) [21,22].

The case fatality rate (no. of death/ no. of cases) of eclampsia in developed contries ranges from 0-1.8% in constrast to 17.7% in India, highlighting the difference in quality of maternal death care [23,24].

Conclusion

Appropiate and timely preventive management can prevent eclampsia in almost all patients with gestational hypertension. Lack of antenatal care, limited access to medical facility and lack of resources are among the most common causes of eclampsia related maternal morbidity and mortality in our setup.

Antenatal care is found to be the most important intervention which can improve the outcome, Early diagnosis of hypertensive disorders in pregnancy and prompt prevention and treatment of pre-eclampsia/ eclampsia can prevent related dreadful obstetric emergencies and also improve long term outcome.

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