Original Research Article

Comparison of maternal and neonatal outcomes in severe preeclampsia cases with early intervention and late presentation in rural area

Sanjay Bansode[1*], Mitali S Golechha[2]

[1]Associate Professor, [2]Sr. Resident, Department of OBGY, SRTR Government Medical College Ambajogai, Dist Beed, Maharashtra, INDIA.
Email: dr.sanjaybansodeobgy@gmail.com

Abstract

Background: Preeclampsia is a multisystem, highly variable disorder unique to pregnancy and a leading cause of maternal and fetal morbidity and mortality. Early detection is very important in severe cases. **Aim:** To compare maternal and neonatal outcomes in severe preeclampsia cases with early intervention and late presentation in rural area. **Material and Methods:** In this observational study the comparison was done between 25 cases each of early intervention (Group A) and late presentation (Group B) in 50 cases of severe preeclampsia. All patients of severe preeclampsia presented in outpatient department were considered for early intervention and those in labor were selected as late presentation. Maternal and neonatal outcomes were recorded. **Results:** The results were maternal mortality in severe preeclampsia in early intervention was nil and in late presentation was 16%. Maternal complications were also significantly less in early intervention. Maternal morbidity studied as hospital stay <1 week and >1week in severe preeclampsia (Group A) was 16% and (Group B) was 40%. NICU admissions in severe preeclampsia in early intervention were 12% and late presentation 28%. Apgar score at 5 min of 8-10 in early intervention andlate presentation was 80%and 64% respectively. **Conclusion:** Early intervention in severe preeclampsia are associated with better maternal and neonatal outcomes than in late presentation.

Key Words: Severe preeclampsia, maternal morbidity, neonatal morbidity, early intervention, late presentation.

[*]**Address for Correspondence:**
Dr. Sanjay Bansode, Associate Professor, Department of OBGY, SRTR Government Medical College Ambajogai, Dist Beed, Maharashtra, INDIA.
Email: dr.sanjaybansodeobgy@gmail.com
Received Date: 07/04/2018 Revised Date: 10/05/2018 Accepted Date: 05/06/2018
DOI: https://doi.org/10.26611/1012634

Access this article online

Quick Response Code:

Website: www.medpulse.in

Accessed Date: 10 June 2018

INTRODUCTION

Preeclampsia is a multisystem, highly variable disorder unique to pregnancy and a leading cause of maternal and fetal/neonatal morbidity and mortality.[1-7] Pre-eclampsia is considered severe if the systolic blood pressure is >160 mmHg and diastolic>110 mmHg. It is characterized by the triad of hypertension, proteinuria and edema with serious ill effects on the mother and fetus. Preeclampsia can present with various conditions ranging from mild forms of hypertension, sometimes with no need for antihypertensive drugs, to severe forms with possible serious complications, which require intensive care.[8] Early detection is very important and its management includes antihypertensive treatment, seizure prophylaxis, and rapid delivery in severe cases.[9] Adverse maternal and perinatal outcomes can be improved by regular antenatal checkups, early identification of the disease, timely referral to a tertiary care center, timely decision on the mode of delivery, and the availability of specialist care during labor and after delivery. But the definitive management is termination of pregnancy. So, interventions are aimed towards rapid delivery of fetus wherein medical or surgical intervention can be tried. The present study was undertaken to compare maternal and neonatal outcomes in severe preeclampsia cases with early intervention and late presentation in rural area.

How to cite this article: Sanjay Bansode, Mitali S. Golechha. Comparison of maternal and neonatal outcomes in severe preeclampsia cases with early intervention and late presentation in rural area. *MedPulse – International Journal of Gynaecology.* June 2018; 6(3): 62-65. http://medpulse.in/Gynacology/index.php

MATERIAL AND METHODS

The present study included 50 cases of severe preeclampsia selected amongst women presenting in outpatient department and labor room over a period of one year. In this observational study the comparison was done between 25 cases each of early intervention (Group A) and late presentation (Group B) in 50 cases of severe preeclampsia. All woman from rural area of severe preeclampsia coming to outpatient department or labor room were selected as patients for early intervention. All patients of severe preeclampsia in labor were selected as late presentation.

Inclusion Criteria

1. Gestational Age >28 weeks
2. Blood pressure - systolic >160mm of Hg anddiastolic>110 mm of Hg. Recorded on two occasions 6 hours apart.
3. Presence of albuminuria 2 + or more on dipstick examination.
4. Presence of systemic complication or warning signs of eclampsia in patients of severe preeclampsia.
5. Singleton pregnancy.

Exclusion Criteria

- Mild preeclampsia (BP<160/110 mm of Hg)
- Gestational hypertension (BP > 140/90 mm of Hg without albuminuria)
- Chronic hypertension (BP> 140/90 mm of Hg in <20 weeksgestation)
- Patients with other causes of convulsion like cerebral malaria, epilepsy, etc.
- Superimposed preeclampsia (new onset proteinuria in hypertensive women but noproteinuria before 20 weeks gestation)
- Multifetal / molar pregnancy
- Patients with preexisting cardiac / renal / hepatic disorders

After admission of these patients to hospital, a detailed history regarding age, period of amenorrhea, chief complaints, any premonitory symptoms of eclampsia, essential antenatal care availed, socioeconomic status and related significant history was obtained from relatives and entered in a proforma specially prepared for the study. An assessment of general condition of patient was done by recording temperature, pulse, respiratory rate and blood pressure. Pallor, edema, icterus and cyanosis were looked for. Complete systemic examination was carried out. Lungs were auscultated and also cardiac status was assessed. Neurological examination was done. Obstetrical evaluation was done to know the gestational age, presentation, position and condition of the fetus. After this, per vaginal examination was done to know whether the patient is in labor or not. Necessary hematological and biochemical investigations were carried out. Blood was sent for grouping and cross matching. Investigations included were complete blood count with platelet count; liver function test; renal function test; coagulation profile as prothrombin time and international normalized ratio (INR). Whether patient was in labor and progress of labor, was decided by clinical examination i.e., uterine contractions, cervical dilatation, effacement, station of presenting part, presence of show bag of membranes, etc. Based on clinical findings and laboratory tests, medical management were given. Obstetric management - (A) Patients with group A in both severe preeclampsia were selected for –i) Induction of labor and ii) Cesarean section Depending upon obstetric grounds. Outcomes of labor were recorded and studied as- Maternal outcomes in terms of maternal mortality and morbidity as number of blood transfusions, platelet transfusions, fresh frozen plasmas received; Hospital stay (in no. of days); condition on discharge – well, shifted to ICU, referral to higher center or death and maternal death and cause for it (if any). Neonatal outcomes were recorded in terms ofApgar score at five minutes, NICU admission required or not. Analysis was done with help of percentage according to the type of data. The tests of statistical significance were not applied as the sample size was less.

RESULTS

Total 50 cases of severe preeclampsia were selected out of all patients coming to OPD and labor room according to inclusion criteria. Of these 50 cases, 25 were cases of early intervention and 25 of late presentation in both groups. The results were maternal mortality in severe preeclampsia in early intervention was nil and in late presentation was 16%. Maternal complications were also significantly less in early intervention. Maternal morbidity studied as hospital stay <1 week and >1week in severe preeclampsia (Group A) was 16% and (Group B) was 40%. In patients of severe preeclampsia 100% patients were well on discharge in early intervention and in late presentation 76% were well 8% referred to higher center or ICU. So, early intervention in severe preeclampsia, that is, early termination of pregnancy, was associated with less maternal mortality and morbidity and less NICU admissions. Distribution of cases of severe preeclampsia according maternal age group 15-19 years, 21- 24years, and 25-29years is 12%, 56%, 20%, 12% respectively. Most common maternal age group being 20-24 years and average maternal age was 21 years. Distribution of severe preeclampsia according to maternal parity nulliparous, para 1, 2, 3 and 4 is 64%, 22%, 6%, 4% and 4% respectively. Most commonly it is seen in nulliparous women.

Table 1: Maternal outcome in severe eclampsia after early intervention and late presentation

Intervention	Severe preeclampsia	
	Early intervention	Late presentation
Blood transfusion	4 (16%)	6 (24%)
Platelet transfusion	4 (16%)	6 (24%)
FFP transfusion	4 (16%)	6 (24%)
Uncontrolled BP post delivery	0	6 (24%)
HELLP syndrome	2 (8%)	5 (20%)
Pulmonary edema/cyanosis	0	2 (8%)
ARDS/Aspiration pneumonia	0	2 (8%)
DIC	3 (12%)	6 (24%)
Cerebral disturbances	0	1 (4%)
Acute Kidney Injury	0	2 (8%)
Eclampsia/Recurrent eclampsia	1 (4%)	6 (24%)
Hospital stay >1 wk	4 (16%)	10 (40%)
Maternal death	0	4 (16%)

Thus, most common complication was DIC (18%) in severe preeclampsia and least common complication was cerebral disturbances (2%) in present study. Blindness or hepatic failure was not seen in any of the case. DIC and ARDS were found to be ultimate causes of death in severe preeclampsia. In cases of severe preeclampsia 50% cases died each due to DIC and ARDS as where in eclampsia DIC (66.66%) was more common that ARDS (33.33%).

Table 2: Neonatal outcome in severe eclampsia after early intervention and late presentation

Intervention	Severe preeclampsia	
	Early intervention	Late presentation
NICU admission	3(12%)	7(28%)
Apgar score at 5 min		
8 to 10	20 (80%)	16 (64%)
5 to 7	2 (8%)	3 (12%)
3 to 4	1 (4%)	2 (8%)
0 to 2	2 (8%)	4 (16%)

NICU admissions in severe preeclampsia in early intervention were 12% and late presentation 28%. Apgar score at 5 min of 8-10 in early intervention andlate presentation was 80% and 64% respectively. Thus, more number of cases were associated with lower Apgar score in case of late presentation in both severe preeclampsia.

DISCUSSION

Severe preeclampsia is a leading cause of maternal mortality andmorbidity throughout the world and also of perinatal mortality, early detection and prompt treatment could reduce the complication. Majority of patients in this study were below 24 years. This distribution can be well explained by the fact of prevalent practice of marriage soon after menarche and absence of family planning concept resulting in pregnancy at an early age. Average age was 21 years in the present study as majority of patient of this study were nulliparas. Hypertensive disorder of pregnancy is responsible for significant maternal/perinatal morbidity and mortality. Yucesoy *et al*. have reported that IUGR, low APGAR scores, and fetal death during labor were significantly more frequent in patients with severe preeclampsia.[10] Maternal mortality in cases of early intervention was compared with those in late presentation in present study and other expectant management study. Singhal *et al* and Abdullah *et al* had 8% and 20% maternal mortality in their study respectively.[11,12] In our study maternal mortality was 16% in cases presented late, however, there was no mortality in cases where early intervention was done. So, maternal mortality is reduced in case of early intervention i.e., rapid termination of pregnancy. Appropriate comparable studies could not be found for this. In present study maternal morbidity was studied in early intervention and late presentation groups as: number of blood, platelet and fresh frozen plasma transfusion required in early intervention (16%) was less than late presentation (24%) i.e. less morbidity in early intervention. Most of patients in early intervention need less hospital stay> 1 week stay (16%) in severe preeclampsia than in late presentation 40%. Blood pressure was well controlled in early intervention group than late presentation (24% uncontrolled in late presentation of severe preeclampsia and nil in uncontrolled in early intervention in severe preeclampsia). In severe preeclampsia all patients from early intervention group were discharged in well condition and that in late presentation were 76% while 4% each needed ICU admission or higher center referral.

Table 3: Comparison of neonatal outcome in terms of NICU admission and Apgar score in different studies

Sr. No.	Author	Severe preeclampsia
1	Sibai *et al*[13]	13.30%
2	SmitiN *et al*[14]	10.61%
3	Swain S *et al*[15]	14.60%
4	MajhiAK *et al*[16]	28%
5	DhananjayBS *et al*[17]	20%
6	Late presentation in present study	28%
7	Early intervention in present study	12%

NICU admission required in severe preeclampsia early intervention group was low and it was related to Apgar score at five minutes being better in early intervention group compared to other expectant management groups. To conclude, early intervention in severe preeclampsia are associated with better maternal and neonatal outcomes than in late presentation.

REFERENCES

1. Caritis S, Sibai B, Hauth J, et al. Predictors of pre-eclampsia in women at high risk. National Institute of Child Health and Human Development Network of

Maternal-Fetal Medicine Units. American Journal of Obstetrics and Gynecology. 1998; 179(4):946–951.
2. Douglas KA, Redman CWG. Eclampsia in the United Kingdom. British Medical Journal. 1994; 309(6966):1395–1400.
3. Ness RB, Roberts JM. Heterogeneous causes constituting the single syndrome of preeclampsia: a hypothesis and its implications. American Journal of Obstetrics and Gynecology. 1996; 175(5):1365–1370.
4. Redman CW, Roberts JM. Management of pre-eclampsia. The Lancet. 1993; 341(8858):1451–1454.
5. Roberts JM. Preventing pre-eclampsia. The Lancet. 1996; 348(9023):281–282.
6. Roberts JM, Cooper DW. Pathogenesis and genetics of pre-eclampsia. The Lancet. 2001; 357(9249):53–56.
7. Roberts JM, Redman CWG. Pre-eclampsia: more than pregnancy-induced hypertension. The Lancet. 1993; 341(8858):1447–1451.
8. Tranquilli AL, Dekker G, Magee L, et al. The classification, diagnosis and management of the hypertensive disorders of pregnancy: A revised statement from the ISSHP. Pregnancy Hypertens 2014; 4 (02):97–104.
9. Brown MA, Lindheimer MD, de Swier M, Van Assche A, Moutquin JM. The classification and diagnosis of the hypertensive disorders of pregnancy: Statement from the International Society for Study of Hypertension in Pregnancy (ISSHP). Hypertens Pregnancy 2001; 20:9-14.
10. Yucesoy G, Ozkan S, Bodur H, et al. Maternal and perinatal outcome in pregnancies complicated with hypertensive disorder of pregnancy: a seven year experience of a tertiary care center. Arch GynecolObstet 2005; 273:43-9.
11. Singhal S, Nymphaea, Nanda S. Maternal And Perinatal Outcome In Antepartum Hemorrhage: A Study At A Tertiary Care Referral Institute. The Internet Journal of Gynecology and Obstetrics 2007; 9(2).
12. Abdullah A, Shaikh AA, Jamro B. Maternal and perinatal outcome associated with eclampsia in a teaching hospital, Sukkur. RMJ 2010; 35() 1:23-26.
13. Sibai BM. Hypertensive disease. In: Principle and practice of medical therapy in pregnancy. 3rd ed., Ed. Gleicher et al. New York: Appleton and Lange: 1998; 997-1041.
14. Siti N, Sharma JB, Gulati N.Perinatal mortality in eclampsia. J ObstetGynaecollnd 1989; 39:792-94.
15. Swain S, et al. Maternal and perinatal mortality due to eclampsia. Ind J Paediatr 1993; 30(6):771-3.
16. Majhi AK, Chakraborty PS, Mukhopadhyay A. Eclampsia- Present scenario in a referral medical college hospital. J ObsterGynaecol India 2001; 51(3):143-47.
17. Dhananjay BS, G. Dayananda et al. A study of factors affecting perinatal mortality in eclampsia. JPBS 2009; 22(2):2-5.

Source of Support: None Declared
Conflict of Interest: None Declared