

Original Article



Fetal Outcome In Early Termination of Pregnancy For Severe Pre Eclampsia

Mst. Atia Sultana¹, Ferdausi Sultana²,
Rahena Khatun³, Mst. Nasrin Nigger⁴.

Abstract

Background: Pre-eclampsia is one of the major causes of maternal and perinatal morbidity and mortality. Fetal and maternal outcomes are directly related to the duration of gestational age and severity of pre-eclampsia. **Objective:** To evaluate the fetal outcome in patients having severe pre-eclampsia following early delivery. **Materials and Methods:** In this observational study, a total of 100 pregnant women with severe pre-eclampsia were divided into two groups: Group A- delivery were done <48 hours after admission and Group B- delivery were done >48 hours after admission. Antenatal corticosteroid were given in both groups when gestational age >28 weeks and <37 weeks. Data were recorded in a pre-designed questionnaire and analyzed by computer based software SPSS windows version 25 and results were presented in tabulated form. Statistical significance was defined as p-value <0.05 and the chi-Square test were done. **Results:** Out of 100 severe pre-eclampsia women, 66 were in group-A and 34 were in group-B. Most of the study subjects were in 20-30 years age group, The mean gestational age were 36.00 ± 2.456 weeks and 33.44 ± 2.699 weeks respectively ($p < 0.001$). Antenatal Corticosteroid was more used in group-B (88.24%) than group-A (30.30%) which was statistically significant ($p < 0.001$). The neonatal outcome of the study subjects where all the parameters were non-significant except IUFD and Early neonatal death that were more in group-B than group-A. IUFD ($p < 0.001$) and Early neonatal death ($p = 0.011$). **Conclusion:** The neonatal complications were less with early termination of pregnancy in severe pre-eclampsia patients.

Key words: Severe pre-eclampsia, Termination of pregnancy, Fetal outcome.

Date of received: 15.05.2020.

Date of acceptance: 20.08.2020.

DOI: <https://doi.org/10.3329/kyamcj.v11i3.49871>

KYAMC Journal.2020;11(3):137-140.

Introduction

Hypertensive disorders are among the most common medical disorders during pregnancy which include pre-eclampsia, eclampsia, pregnancy induced hypertension and transient hypertension of pregnancy and continue to be the major cause of maternal and perinatal morbidity and mortality especially in developing countries.¹ Pre-eclampsia complicates 10% of all pregnancies.² Fetal complications in pre-eclampsia are directly related to gestational age and severity of maternal condition, which include increased incidence of preterm delivery, intrauterine growth restriction, intrauterine fetal death and placental abruption. Infants born to hypertensive mother have a 16% risk of perinatal death or severe morbidity and with 36% of them needing high level neonatal care.³ Pre-eclampsia is a

multisystem disorder so its management is a great challenge for obstetricians because there are no effective interventions to manage or prevent it, and in spite of good antenatal care it is difficult to balance between the risks for women to continue pregnancy and the hazards for baby's early birth.⁴ The management of severe pre-eclampsia entails the use of antihypertensive drugs to control the blood pressure, anticonvulsants for seizure prophylaxis and delivery of the fetus as soon as it is viable. Overall perinatal mortalities are increased fivefold in patients of pre-eclampsia with iatrogenic prematurity being the main culprit.⁵ The clinical course of severe pre-eclampsia, results in progressive deterioration of both maternal and fetal conditions. Traditional management of severe pre-eclampsia has focused on maternal safety,

1. Associate Professor & HOD of Obst & Gynae Department, Shah Mokhdum Medical College Hospital, Rajshahi, Bangladesh.
2. Professor of Obst & Gynae Department of Rangpur Medical College and Hospital, Rangpur, Bangladesh.
3. Associate Professor of Anesthesiology Department, Khwaja Yunus Ali Medical College and Hospital, Sirajganj, Bangladesh.
4. Assistant Professor of Obst & Gynae Department, Khwaja Yunus Ali Medical College and Hospital, Sirajganj, Bangladesh.

Correspondence: Dr. Mst. Atia Sultana, Associate Professor & Head of Obst & Gynae; Gynae Department of Shah Mokhdum Medical College Hospital, Rajshahi. e-mail: dr.atia77@gmail.com, Mobile: 01712-214412. □

with expedite delivery. Because of these pregnancies are associated with high rates of maternal morbidity and mortality and with potential risks for the fetus. The risk benefit ratio should be weighed in such cases, the sooner the deliveries better the prognosis. It is generally agreed that such patients should be delivered if the disease develops at 28-34 weeks of gestation.⁶ Delivery of the infant and placenta is the only effective treatment. Delivery at an earlier gestational age, however, is associated with an increased risk of adverse neonatal outcome.⁷

Materials and Methods

This Observational study was carried out in the Department of Obstetrics & Gynaecology of Rangpur Medical College Hospital, Rangpur. The Study period was from January 2018 to December 2018. Total 100 cases of pregnant women with >28 wks of gestation, who fulfill the inclusion was selected during the study period. Study subjects were selected by purposive sampling. The Inclusion criteria were the pregnancy >28 wks of gestation with severe pre-eclampsia (BP >160/110 mm of Hg). Data were collected by interview with the woman or attendant in a pre-designed questionnaire. Structured data collection sheet was used during the period of hospitalization. Data were compiled and observations were presented in the form of table. Appropriate statistical analysis of the data was done using computer based SPSS (Statistical Programmed for Social Science) package 25 versions. Statistical significance considered to be p-value<0.05 and the statistical chi-square test were done. The protocol of this study was approved by the Protocol review and Ethical committee of Rangpur Medical Collage, Rangpur.

Results

This study was carried out with an aim to observe the neonatal complications that occurred in early delivery <48 hours after admission in group-A compared to delayed delivery >48 hours after admission in group-B. A total of admitted 100 cases having pregnancy with severe pre-eclampsia were taken as study subjects and grouped into group-A (n=66) and group-B (n=34), in the department of Obstetrics and Gynaecology in Rangpur Medical College Hospital, Rangpur.

Table I: Obstetrical profile of the study subjects (n=100)

Parameter	Severe pre-eclamptic mothers		X ²	P value
	Group-A (n=66) (Delivery <48 hours after admission)	Group-B (n=34) (Delivery >48 hours after admission)		
Gestational age				
28 - <30 weeks	01 (1.52%)	02 (5.88%)		
30 - <32 weeks	03 (4.55%)	08 (23.53%)		
32 - <34 weeks	05 (7.58%)	09 (26.47%)	21.428	P<0.001 (S)
34 - <36 weeks	23 (34.85%)	09(26.47%)		
36 weeks	34 (51.52%)	06 (17.66%)		
Mean ±SD	36.00±2.456	33.44±2.699		
Antenatal booking status				
Regular	42 (63.64%)	16 (47.06%)	2.532	0.112 (NS)
Irregular/ Nil	24 (36.36%)	18 (52.94%)		
Use of antenatal corticosteroid				
Used	20 (30.30%)	30 (88.24%)	30.125	P<0.001 (S)
Not Used	46 (69.70%)	04 (11.76%)		

X²: Chi-square value, S: Significant, NS: Non-significant.

Table I Shows obstetrics profile of the study subject., On admission the mean gestational age in group-A 36.00±2.45 weeks and in group-B 33.44±2.69 weeks, (p<0.001) statistically significant. Most of the study subjects were on regular antenatal care 63.64% in group-A and 52.94% in group-B had none or irregular antenatal care which was statistically non-significant. Use of antenatal corticosteroid was more in group-B than group-A that was 30 (88.24%) in group-B and 20 (30.30%) in group-A. Both Gestational age (p<0.001) and Use of antenatal corticosteroid (p<0.001) were statistically significant.

Table II: Mode of delivery in the study subjects (n=100)

Parameter	Severe pre-eclamptic mothers		x ²	P value
	Group-A (n=66) (Delivery <48 hours after admission)	Group-B (n=34) (Delivery >48 hours after admission)		
LUCS	37 (56.06%)	21 (61.76%)	0.300	0.584 (NS)
VD	29 (43.94%)	13 (38.24%)		

X²: Chi-square test was done, NS: Non-significant. LUCS: Lower uterine caesarian section, VD: Vaginal Delivery

Table II Shows the mode of delivery in the study subjects, though there were more number of caesarean section done in group-A than group-B but not significant. LUCS was 56.06% (37) in group-A and 61.76% (21) in group-B. It was statistically proved that the mode of delivery was non-significant (p=0.584).

Table III: Neonatal outcome of the study subjects (n=100)

Parameter	Severe pre-eclamptic mothers		X ²	P value
	Group-A (n=66) (Delivery <48 hours after admission)	Group-B (n=34) (Delivery >48 hours after admission)		
Prematurity	25 (37.88%)	17 (50%)	1.35	0.245 (NS)
IUGR	13 (19.6%)	04 (8.35%)	1.00	0.317 (NS)
IUFD/ Still birth	02 (3.03%)	09 (26.47%)	1259	0001 (S)
Mean APGAR score at 1 minute	6.76±1.21	5.06±3.10	12.16	0.001(S)
Mean APGAR score at 5 minutes	7.73±1.38	5.82±3.55	53.23	0.001(S)
NICU admission	32 (48.48%)	20 (58.82%)	0.96	0.327 (NS)
Early neonatal death	03 (4.55%)	07 (20.59%)	6.41	0.011 (S)

X²: Chi-square test was done, S: Significant, NS: Non-significant, IUGR: Intra uterine growth retardation, IUFD: Intra uterine fetal death.

Table III Shows the neonatal outcome of the study subjects where all the parameters were non-significant except IUFD and Early neonatal death that were more in group-B than group-A. IUFD ($p<0.001$) and Early neonatal death ($p=0.011$). The mean APGAR score at 1 minute and at 5 minutes ($p<0.001$). This result was statistically significant.

Discussion

Severe Pre-eclampsia remains a serious problem in obstetrics, still its management is challenging. Up to now the only causative treatment is termination of pregnancy by "immediate delivery" and thereby removal of the placenta.⁸ In the present study the gestational age of the most of the cases were more than 34 week and on admission the mean gestational age was of group-A 36.00±2.456 weeks and group-B 33.44±2.699 weeks, statistically significant. (Table-I). The incidence of pre-eclampsia increases as pregnancy advanced. This result correlate with the other studies. Who found the mean gestational age of the mother was 38.26±1.26 weeks, The pregnancies complicated by severe pre-eclampsia are also associated with an increased risk for perinatal morbidity and mortality.⁹ The current study has shown the increased risk of prematurity, intrauterine growth retardation (IUGR), intrauterine fetal death (IUFD), neonatal intensive care unit (NICU) admission and early neonatal death, all these complications were found in both groups and non-significant except IUFD and neonatal death which were more in group-B than group-A and statistically significant (Table-III). Prematurity is commonly associated with severe pre-eclampsia and eclampsia. The high incidence of prematurity was due to early intervention and induction of labor or caesarean section due to avoid further maternal and fetal complications. All most similar findings were reported by Singh A. et, al. showed 67.9% ,Singhal SR. et, al. showed 57.14%, prematurity.¹⁰⁻¹¹ The fetal issues were more unfavorable when IUGR was associated with preeclampsia. In the present study IUGR was more in group-A whose gestational age were near term. Other studies by Gasparovic VE. et, al.¹² reported 31.7% IUGR. In present study, most of the intrauterine fetal deaths were occurred due to abruption placentae in group-B than group-A, statistically significant. Other studies by Shaikh S. et, al.,¹³⁻¹⁴ showed 16.8% IUFD and Poonyane T. showed 20% IUFD. NICU admission were usually associated with prematurity that observed in both groups and non-significant in the present study. Studies by Sultana A. et, al. reported 20%, Shaikh S. et al. showed 21.7% newborn needed admission in NICU.¹⁵

Conclusion

Early delivery is expedited for good prognosis. So proper antenatal care for all pregnant women and screening for pre-eclampsia should be ensured which will help in prevention as well as early diagnosis and treatment of pre-eclampsia that ultimately reduce the perinatal mortality and morbidity.

Acknowledgment

First of all I am grateful to the Almighty Allah, most merciful and graceful for giving me the opportunity, strength and patience to perform this research work successfully. I am greatly thankful to my honorable Principal, Rangpur Medical College and the Hospital authority for their academic and administrative support. I am very grateful to Prof. Dr. Ferdousi Sultana, Obs. & Gynae Department of Rangpur Medical College Hospital, Rangpur, for her constant supervision and valuable guidance. I am also grateful to my respected teachers, beloved colleagues in the Department for their Support.

References

1. Lindheimer MD, Roberts JM, Cunningham FG. Chesley's Hypertensive disorders in pregnancy 3rd ed. Amsterdam: Elsevier Inc; 2009.
2. Cunningham FG, Leveno KJ, Bloom SL, Hauth JC, Rouse DJ, Catherine YS. Williams Obstetrics 24th ed. New York, NY: McGraw Hill Companies. 2014.
3. Sultana, Aparna J. Risk factors for pre-eclampsia and its perinatal outcome. *Annals of biological research.* 2013; 4(10):1-5.
4. De souza, Rugolo LM, Bentlin MR, Trindade CE. Pre-eclampsia: Effect on the fetus and newborn. *Neo reviews.* 2011; 12:198.
5. Farag K, Hassan I, Ledger WL. Prediction of pre-eclampsia. *Obstet Gynaecol Surv.* 2004; 59:464-482.
6. Odendaal HJ, Pattinson RC, Bam R, Grove D, Kotze TJ. Aggressive or expectant management for patients with severe pre-eclampsia between 28-34 weeks of gestation: A randomized control trail. *Obstet Gynecol.* 1990; 76:1070-1075.
7. Polley LS, Chestnut DH, Tsen LC, Wong CA. Hypertensive disorders. In: Chestnut's Obstetric Anesthesia: Principles and Practice 4th ed. Philadelphia, Pa, USA: Mosby Elsevier. 2009, 975-1008.
10. Singh A, Chawla S , Pandey D , Jahan N , Anwar A. Fetomaternal Outcome in Cases of Pre-eclampsia in a Tertiary Care Referral Hospital in Delhi, India: A Retrospective Analysis. *International Journal of Science Study* 2016; 4(2):100-103.
11. Singhal SR, Deepika, Anshu, Nanda S. Maternal and Perinatal Outcome in Severe Pre-eclampsia and Eclampsia. *South Asian Federation of Obstetrics and Gynaecology.* 2009; 1(3):25-28.

12. Gašparovi VE, Beljan P, Ahmetaševi SG, Schuster S, Skrablin S. What affects the outcome of severe preeclampsia? SIGNA-VITAE 2015;10 (1):6-12.
13. Shaikh S. Outcome of Pregnancy in Women with Severe Pre-Eclampsia. Mc. 2012; 19(3):41-45.
14. Poonyane T. Impact of Severe Pre-eclampsia on Maternal and Fetal Outcomes in Preterm Deliveries. Dissertation for MMed and FCOG Part II, The University of the Witwatersrand in Johannesburg. 2015.
15. Sultana A, Koli LNB, Sayeeda S. Clinical Study on Risk Factors and Fetomaternal Outcome of Severe Preeclampsia in Bangabandhu Sheikh Mujib Medical University. Chattagram Maa-O-Shishu Hospital Medical College Journal. 2018; 17(1):23-28 .