Section: Obstetrics and Gynaecology

Original Research Article

COMPARATIVE EVALUATION OF VAGINAL DELIVERY AND CAESAREAN SECTION IN ANTEPARTUM ECLAMPSIA PATIENTS FROM 34 WEEKS GESTATION ONWARDS: AN INSTITUTIONAL BASED STUDY

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ABSTRACT

Background: Eclampsia represents a significant medical concern, posing serious risks and potential life-threatening conditions for pregnant women. Preeclampsia itself is a multifaceted disorder of unclear origin, marked by the onset of hypertension and proteinuria (exceeding 300 mg/24 hours) after the 20th week of gestation. Hence; the present study was conducted for comparative evaluation of vaginal delivery and caesarean section in antepartum eclampsia patients from 34 weeks gestation onwards.

Materials & Methods: The participants were randomly assigned to two distinct groups: Group 1 underwent vaginal delivery (n=85), while Group 2 received a caesarean section (n=65). The diagnostic criteria for eclampsia included elevated blood pressure (greater than 140/90 mmHg), significant proteinuria, and convulsions occurring after 20 weeks of gestation. Comprehensive demographic and clinical data were collected from all participants. Convulsions were managed with magnesium sulfate (MgSO4), provided there were no contraindications, and blood pressure was regulated using nifedipine and intravenous labetalol. The mode of delivery was predetermined as either vaginal or caesarean. Outcome was evaluated.

Results: Among group 1, IUGR, LBW, need for resuscitation, need for NICU stay and still birth was seen in 23, 8, 15, 21 and 10 subjects respectively. Among group 2, IUGR, LBW, need for resuscitation, need for NICU stay and still birth was seen in 6, 5, 3, 8 and 2 subjects respectively. Among group 1, PPH, renal failure, CVA, pulmonary oedema, fever and electrolyte imbalance was seen in 10, 2, 2, 2, 1, 9 and 2 patients respectively. Among group 2, PPH, and fever was seen in 2 and 1 patient respectively. Incidence of maternal complications was higher among patients of group 1. Also, perinatal outcome was more adverse among patients of group 1.

Conclusion: A timely caesarean section in cases of primigravida with eclampsia beyond 34 weeks of gestation and an unfavorable cervix upon admission results in a more favorable feto-maternal outcome compared to conservative obstetric management that involves expectant vaginal delivery.

Key words: Vaginal, Delivery, Antepartum eclampsia.

INTRODUCTION

Eclampsia represents a significant medical concern, posing serious risks and potential life-threatening conditions for pregnant women. Research indicates that 79% of eclampsia cases arise from preeclampsia. Preeclampsia itself is a multifaceted disorder of unclear origin, marked by the onset of

hypertension and proteinuria (exceeding 300 mg/24 hours) after the 20th week of gestation.[1,2] Eclampsia is characterized by the occurrence of generalized convulsions in patients with preeclampsia, typically manifesting as grand mal seizures either prior to, during, or within 48 hours following delivery, and may also include coma not attributable to other neurological disorders. This condition is among the primary contributors to maternal and perinatal morbidity and mortality on a global scale.[3] Recent investigations emphasize the importance of enhancing healthcare strategies to prevent and manage preeclampsia and eclampsia, which is crucial for mitigating maternal and infant mortality and morbidity rates.[4,5] According to a meta-analysis of the genome-wide association of mothers, there is a genetic predisposition to eclampsia. Sequence variants in the maternal genome previously known to be linked to blood pressure have been identified. Furthermore, the polygenic risk score for blood pressure (BP-PRS) appears to be associated with preeclampsia. The polygenic risk score indicates an individual's genetic susceptibility to a disease influenced by multiple genetic variants. It is calculated as a weighted sum of the risk alleles identified in genome-wide association studies that are associated with the disease.[6-8]

Hence; the present study was conducted for comparative evaluation of vaginal delivery and caesarean section in antepartum eclampsia patients from 34 weeks gestation onwards.

MATERIALS AND METHODS

A total of 150 primigravid women diagnosed with antepartum eclampsia and gestational periods exceeding 34 weeks were recruited for this study. The participants were randomly assigned to two distinct groups: Group 1 underwent vaginal delivery (n=85), while Group 2 received a caesarean section (n=65). The diagnostic criteria for eclampsia included elevated blood pressure (greater than 140/90 mmHg), significant proteinuria, and convulsions occurring after 20 weeks of gestation. Comprehensive demographic and clinical data were collected from all participants. Convulsions were managed with magnesium sulfate (MgSO4), provided there were no contraindications, and blood pressure was regulated using nifedipine and intravenous labetalol. The mode of delivery was predetermined as either vaginal or caesarean. Outcome was evaluated. All the results were recorded in Microsoft excel sheet and was subjected to statistical analysis using SPSS software. Univariate analysis was done for evaluating the level of significance.

RESULTS

A total of 150 subjects were evaluated. Mean age of the subjects was 29.8 years. 67.33 percent of the subjects were of rural residence. Group 1 and group 2 consisted of 56.67 percent and 43.33 percent of the subjects respectively. Among group 1, IUGR, LBW, need for resuscitation, need for NICU stay and still birth was seen in 23, 8, 15, 21 and 10 subjects respectively. Among group 2, IUGR, LBW, need for resuscitation, need for NICU stay and still birth was seen in 6, 5, 3, 8 and 2 subjects respectively. Among group 1, PPH, renal failure, CVA, pulmonary oedema, fever and electrolyte imbalance was seen in 10, 2, 2, 2, 1, 9 and 2 patients respectively. Among group 2, PPH, and fever was seen in 2 and 1 patient respectively. Incidence of maternal complications was higher among patients of group 1. Also, perinatal outcome was more adverse among patients of group 1.

Table 1: Demographic data

Variable	Number	Percentage
Mean age (years)	29.8	
Rural residence	101	67.33
Urban residence	49	32.67
Group 1	85	56.67
Group 2	65	43.33

Table 2: Perinatal outcome

Perinatal outcome	Group 1 (n=85)	Group 2 (n=65)
IUGR	23	6
LBW	8	5
Need for resuscitation	15	3
Need for NICU stay	21	8
Still birth	10	2
Others	4	3

Table 3: Maternal complications

Maternal complications	Group 1 (n=85)	Group 2 (n=65)
PPH	10	3
Renal failure	2	0
CVA	2	0
Pulmonary oedema	1	0
Fever	9	1
Electrolyte imbalance	2	0

DISCUSSION

In regions such as Asia and Africa, hypertensive disorders during pregnancy are responsible for nearly 10% of all maternal fatalities. Eclampsia, a serious condition marked by elevated blood pressure, severe headaches, visual disturbances, and seizures, is a critical factor in both maternal and neonatal mortality and morbidity when considering the various complications that can arise during pregnancy. Among direct obstetric causes, eclampsia ranks as the third leading contributor to maternal deaths.[7-9] The fatalities associated with eclampsia are often linked to preventable conditions, including postpartum hemorrhage (PPH), antepartum hemorrhage (APH), pulmonary edema, aspiration pneumonia, coagulation disorders, acute renal failure (ARF), and cerebrovascular hemorrhage. In contrast to wealthier nations, where perinatal mortality rates fluctuate between 5% and 11%, poorer countries experience significantly higher rates, with approximately 40% of recorded perinatal deaths. The maternal mortality rate in cases of eclampsia is reported to be 31.8%, while the perinatal loss rate stands at 38.6%.[10-12]

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CONCLUSION

A timely caesarean section in cases of primigravida with eclampsia beyond 34 weeks of gestation and an unfavorable cervix upon admission results in a more favorable feto-maternal outcome compared to conservative obstetric management that involves expectant vaginal delivery.

REFERENCES

1. Turner JA. Diagnosis and management of pre-eclampsia: an update. Int J Women Health 2010; 2:327–7.
2. Anziska BJ, Dardis C, Levine SR. Reversible cerebral vasoconstriction syndrome: a rose by any other name? Arch Neurol 2011; 68:976–7.
3. Corton MM, Kenneth L, Steven B, et al. Williams Obstetrics 24/E (EBOOK). New York: McGraw-Hill Professional; 2014.
4. WHO. WHO recommendations for prevention and treatment of pre-eclampsia and eclampsia, Geneva; 2011.
5. Pal B, Geeta N, Vivek P. A study of eclampsia. J Obstet Gynecol. 1996 Feb; 46(1): 34-39. Henriques AC, Carvalho FH, Feitosa HN, et al. Endothelial dysfunction after pregnancy-induced hypertension. Int J Gynaecol Obstet 2014; 124:230–4.
6. Hart LA, Sibai BM. Seizures in pregnancy: epilepsy, eclampsia, and stroke. Semin Perinatol 2013; 37:207–24.
7. Low JJ, Yeo GS. Eclampsia- are we doing enough? Singapore MedJ. 1995 Oct; 36(5): 505-9.
8. Steinthorsdottir V., McGinnis R., Williams N.O., Stefansdottir L., Thorleifsson G., Shooter S., Fadista J., Sigurdsson J.K., Auro K.M., Berezina G., et al. Genetic Predisposition to Hypertension Is Associated with Preeclampsia in European and Central Asian Women. Nat. Commun. 2020; 11:5976.
9. Bhattacharya PK, Purkayastha S, Basu M, Robinsanath M. Caesarean section in eclampsia Still a dilemma. J ObstetGynecol of India 1992 Feb; 42(1): 51-55
10. Zwart JJ, Richters A, Ory F, de Vries JI, Bloemenkamp KW, van Roosmalen J. Eclampsia in the Netherlands. Obstet Gynecol. 2008; 112:820–827.
11. Lal AK, Gao W, Hibbard JU. Eclampsia: maternal and neonatal outcomes. Pregnancy Hypertens. 2013; 3:186–190.
12. Onuh SO, Aisien AO. Maternal and fetal outcome in eclamptic patients in Benin City, Nigeria. J Obstet Gynaecol. 2004; 24:765–768.
13. Irene K, Amubuomombe PP, Mogeni R, Andrew C, Mwangi A, Omenge OE. Maternal and perinatal outcomes in women with eclampsia by mode of delivery at Riley mother baby hospital: a longitudinal case-series study. BMC Pregnancy Childbirth. 2021 Jun 24;21(1):439
14. Chaudhuri S, Giri DK, Mondal A, Rani R, Janani V, Mundle M. Comparison of Fetomaternal Outcome Between Planned Vaginal Delivery and Planned Caesarean Section in Women with Eclampsia: Observational Study. J Obstet Gynaecol India. 2021 Aug;71(4):369-378.