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Original Research Article

Evaluation of outcome of mode of delivery in severe preeclampsia

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ABSTRACT

Background: Preeclampsia is new onset hypertension of more than 140/90 mmHg on 2 occasions, 4 hours apart in pregnancy, which occurs after 20 weeks of gestation and frequently near term. If there are other symptoms like as headache, blurred vision from end organ damage, and thrombocytopenia, it is characterized as severe preeclampsia. Regardless of the foetal outcome, treatment for severe preeclampsia is immediate delivery. The goal of the current study is to assess how different delivery methods affect individuals with severe preeclampsia.
Methods: It is a retrospective study conducted in RL Jalappa hospital, Kolar from January 2021 to February 2022. Out of 2568 deliveries at our facility throughout the study period, 150 singleton pregnancies complicated by severe preeclampsia delivered at 24-34 weeks of gestation were chosen for the study. Women who had additional obstetric, foetal, or medical difficulties were not included in the study.
Results: 110 study participants had an LSCS form of delivery out of the total. Among them, non-reassuring fetal heart rate, obstructed labor, and malpresentation were the most typical indicators for LSCS. The difference between Bishop's score and the mode of delivery was statistically significant. There was no discernible difference between the newborn's APGAR score immediately following delivery and the method of delivery.
Conclusions: There are strong chances of a normal vaginal birth if the Bishop score at the time of admission and induction is more than 4.

Keywords: Pre-eclampsia, LSCS, Vaginal delivery, Mode of delivery, Severe preeclampsia

INTRODUCTION

Preeclampsia is a pregnancy-specific condition that affects the multi-organ system. The incidence of preeclampsia is 4-5% in all pregnancies.[1] Preeclampsia is new onset hypertension of blood pressure more than 140/90 mmHg on 2 occasions 4 hours apart in pregnancy, which occurs after 20 weeks of gestation and frequently near term. It is diagnosed as severe preeclampsia if the blood pressure is more than 140/90 mmHg and also associated severe features such as headache, blurring of vision due to end-organ damage, and thrombocytopenia. With 16% of maternal deaths attributable to it, hypertension and its consequences are the third most common cause of maternal mortality.[2-4] Regardless of the foetal outcome, treatment for severe preeclampsia delivered far from term has been delivery right away. The goal of the current study is to assess how different delivery methods affect individuals with severe preeclampsia.

METHODS

Between January 2021 and February 2022, retrospective research at the RL Jalappa hospital in Kolar was carried out. Out of 2568 deliveries made at the facility throughout the study period, 150 singleton pregnancies complicated by severe preeclampsia delivered at 24-34 weeks of gestation were chosen for the study. Before beginning the study, permission was sought from the institution's ethical committee. All study participants provided their written informed approval. The study included patients with

severe preeclampsia symptoms such persistent headache, upper abdomen pain, blurred vision, low platelets, and pulmonary edoema. Other criteria were proteinuria >5 gm in 24-hour urine collection and urine albumin >3+. Women with multiple pregnancies, eclampsia, labour onset or spontaneous rupture of membranes at admission, as well as pregnancies complicated by a foetal genetic disorder identified by the ultrasound were excluded from the study.

Data collection and analysis

Data were entered into MS excel and analyzed by using SPSS software, version .22. [5Every piece of quantitative data was examined using Mean and unpaired t test and the standard deviation. For nominal data frequency, percentage and chi-square test was applied. P value<0.05 was taken as a statistically significance of the given variables.

RESULTS

The mean age of patients was 25.76±3.51 years. Out of the total participants, in our study majority belongs to the 26-30 years of age group followed by the 21-25 years of age group. A sum of 6.8% of study participants were below 20 years of age group (Table 1). Out of a total, 110 participants had an LSCS mode of delivery also among them 70 patients had chosen Electively LSCS (Figure 1). The majority (54%) of participants were primi-gravida. At the time of admission at the hospital, 60.67% of study participants had a gestational age of > 30 weeks. Out of the total, 34% of patients had a Bishop score of 2 followed by 25.3% of patients who had a Bishop score of 1 at the time of admission at the hospital. After delivery immediately APGAR score from 7-10 was found among 98 (65.4%) babies of participants (Table 2). Among study participants, 56% had given an induction and 44% had not given induction for the labor (Figure 2). Out of the total, 110 study participants had an LSCS mode of delivery. Non-reassuring fetal heart rate was among them the most frequent LSCS indication, followed by obstructed labor and malpresentation (Figure 3). Out of the total, 81 participants were primi-gravida, and the remaining were multipara parity type and mode of delivery did not appear to be related (Table 3). There was no correlation between gestational age at admission and delivery method (Table 4 of the 110 study participants who had LSCS as their technique of delivery, 40 underwent LSCS following induction. While in 27% of patients who had given induction for labor and all of them normal vaginal delivery occurred (Figure 4). The difference between Bishop's score and the mode of delivery was statistically significant. There was no discernible difference between the new-born's APGAR score immediately following delivery as well as the method of delivery (Table 5). The mode of the delivery following induction as well as the Bishop's admission score were found to be significantly correlated (Table 6).

Table 1: Age group wise distribution of study participants, (n=150).

Age group (Years)	Frequency (%)
< 20	10 (6.8)
21-25	58 (38.6)
26-30	64 (42.6)
>30	18 (12)

Table 2: Dissemination of various variables related to delivery and outcome among patients, (n=150).

Variables		Frequency (%)
Parity	Primi-gravida	81 (54)
	Multi para	69 (46)
Gestational age at time of admission (weeks)	< 30	59 (39.33)
	>30	91 (60.67)
Bishop score at time of admission	1	38 (25.3)
	2	51 (34)
	3	29 (19.3)
	4	25 (16.7)
	6	7 (4.7)
APGAR score	0-3	6 (4)
	4-6	46 (30.6)
	7-10	98 (65.4)

Table 3: Association between parity type and mode of delivery among study participants, (n=150).

Mode of delivery	Parity (%)		Chi-square value (p)
	Primi gravida	Multipara	
LSCS	62 (41.34)	48 (32)	0.927 (0.335)
Normal vaginal delivery	19 (12.66)	21 (14)	

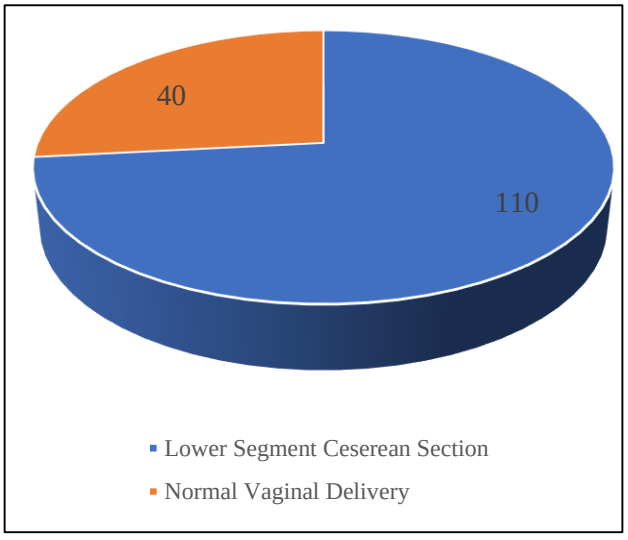

Figure 1: Mode of delivery among study participants, (n=150).

Table 4: Association between gestational age and mode of delivery among the study participants, (n=150).

Mode of delivery	Gestational age, (Weeks) (%)		Chi-square value (p value)
	<30	>30	
LSCS	39 (26)	71 (47.32)	2.6008 (0.106)
Normal vaginal delivery	20 (13.34)	20 (13.34)	

Table 5: Mean score difference between various variable and mode of delivery among study participants, (n=150).

Variables	Mode of delivery		T test value (p value)
	LSCS	Normal vaginal delivery	
Bishop score	2.04±1.03	3.63±1.21	7.97 (0.000)
APGAR score	6.73±1.51	6.43±1.82	1.01 (0.30)

Table 6: Comparison between induction of labour and mode of delivery among the study participants, (n=150).

Bishop score at time of admission	Mode of delivery after induction, n (%)		Chi-square value (p value)
	LSCS	Normal vaginal delivery	
<4	34 (22.67)	18 (12)	9.254 (0.002)
>4	10 (6.66)	22 (14.66)	

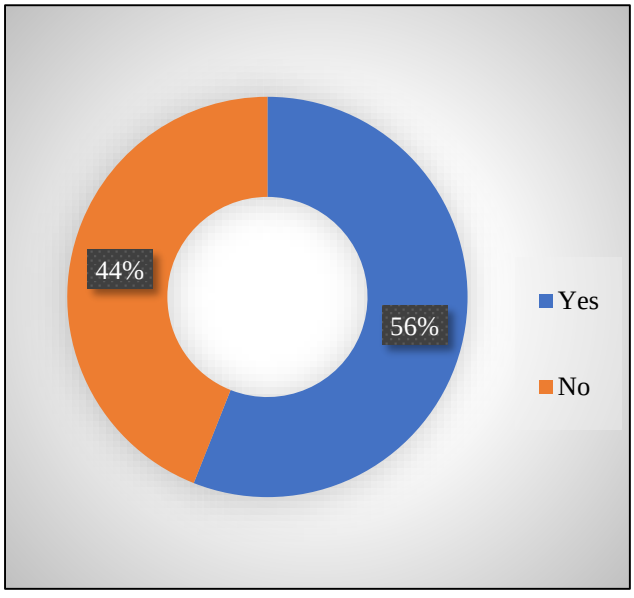

Figure 2: Labour induction distribution among study participants, (n=150).

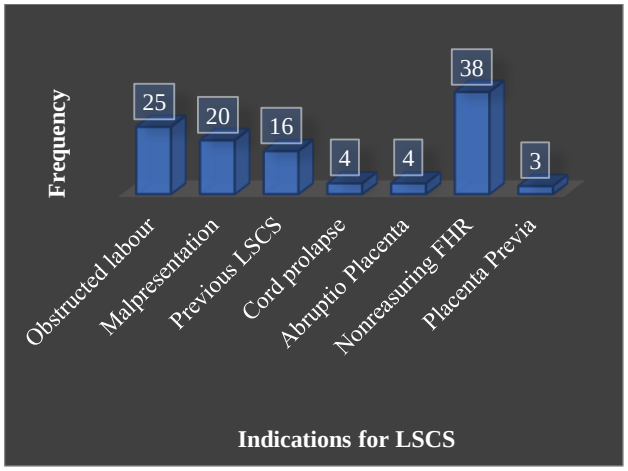

Figure 3: Distribution of various indication for LSCS, (n=110).

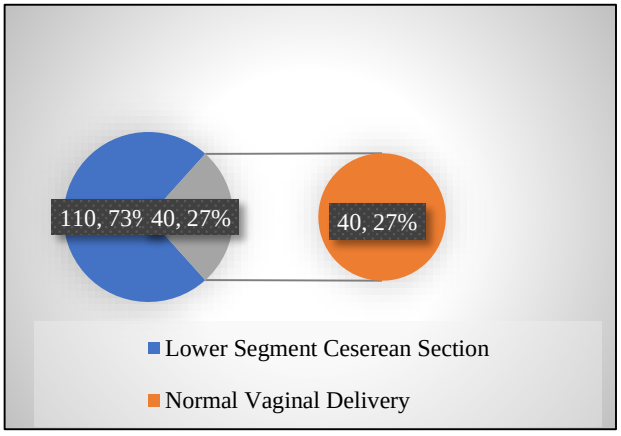

Figure 4: Distribution of mode of delivery after given induction for labour, (n=150).

DISCUSSION

In the current study, the mean age of patients was 25.76±3.51 years. Out of the total participants, in present study majority belongs to the 26-30 years of age group followed by the 21-25 years of age group. A sum of 10 (6.8%) study participants were below 20 years of age group. A similar age group pattern of study participants majority from 21-30 years was found in the study conducted by Irene et al.[6] Out of the total, majority study participants had LSCS mode of delivery, only 60% of them were given induction for the labor in our study. While in the study done by Xu et al from total who had induced, 337 (61%) delivered vaginally and the other 216 (39%) had to undergo a transfer-cesarean section to deliver.[7] In the present study, 110 study participants had an LSCS mode of delivery. Among them, the most common indication for LSCS was non-reassuring fetal heart rate, followed by obstructed labor and malpresentation. Similar causes for LSCS were found in the study carried out by Xu et al.[7] There was no association found between parity type as well as gestational age at the time of admission and mode of delivery. Similar findings were found in the study

accompanied by Kumari et al.[8] Bishop score and mode of delivery showed a statistically significant difference in the current study. There was no discernible difference between the newborn's APGAR score immediately following delivery and the method of delivery. While the study carried out by Wu et al.[9] there was a significant difference between the APGAR Score and mode of delivery was found. A strong association was found between the Bishop score at the time of admission and the mode of delivery after induction. Similar results were found in the study of Anwar et al.[10]

CONCLUSION

The literature suggests that preeclampsia is not only caused for long-term adverse effects on the mother but also includes increased risks of developing hypertension and other cardiovascular and metabolic diseases, in the later stage of life as well as affects the child's health instantly after delivery. The perinatal outcome is strongly prejudiced by gestational age and mode of delivery. According to the results of our study, there is a substantial difference between the Bishop score and the mode of birth. So, if the Bishop score is more than 4 at the time of admission and induction provided then high chance of normal vaginal delivery.

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Conflict of interest: None declared
Ethical approval: The study was approved by the Institutional Ethics Committee

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