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Perinatal Outcome in Pre-Eclampsia: A Prospective Study

KEYWORDS: Preeclampsia, Perinatal outcome, LBW, APGAR score

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ABSTRACT *Preeclampsia is one of the common conditions of unknown etiology which increases the risk of maternal and perinatal morbidity and mortality. The aim of the study was to determine the neonatal outcome in babies born to preeclamptic patients. A prospective study was carried out in the department of OBs & gynaec, b j medical college, civil hospital, ahmedabad from July 2014 to December 2014. The study included all patients of preeclampsia -BP≥140/90 mm Hg and proteinuria after 20 weeks of gestation. Necessary information was collected such has detailed history, clinical examination, investigation performed, mode of delivery and neonatal outcome. In our study overall incidence of preeclampsia is 8.3%. Prematurity was the common complication seen in 46.6% of cases. 17.4% of babies born to these women died, for a perinatal mortality rate (PMR)of 174/1000births.PMR increased as the BP increased. It was 6.3% for BP 140/90 to 149/94, to 23.4% at BP >160/110 and above. Low birth weight (LBW) was common in preeclampsia. APGAR score at 5min was <7 in 38.6% of cases. Preeclampsia has adverse perinatal outcome. The various complications are low APGAR score, IUD, LBW and high NICU admissions. Based on these findings neonatal morbidity and mortality can be reduced by early recognition and institutional management of preeclampsia.*

INTRODUCTION

Hypertensive disorders are among the commonest medical disorders during pregnancy and continue to be a major cause of maternal and perinatal morbidity and mortality. In developing countries they rank second only to anaemia with approximately 7-10% of all pregnancies complicated by some form of hypertensive disorder [1]. In India incidence of preeclampsia as recorded from hospital statistics vary widely from 5-15% [2].

Preeclampsia is defined as hypertension (blood pressure 140/90mmHg on two occasions 4-6 hrs apart or single reading of diastolic blood pressure of >110mmHg) and proteinuria developing after 20 weeks of pregnancy up to 6 weeks postpartum in previously normotensive non proteinuric women [3].

The exact etiology of preeclampsia remains unknown, factors that are currently more accepted include abnormal trophoblast invasion of uterine blood vessels, increased vasopressor response and vasospasm, immunological intolerance to the foetus and genetic abnormalities [4]. More maternal and neonatal complications were encountered in women in whom preeclampsia was severe and pregnancy had to be terminated earlier [5].

The risks posed by the preeclampsia to the foetus include severe IUGR, hypoxaemia, acidosis, premature birth, IUD and birth asphyxia. Risk factors for preeclampsia include multiparity, multifetal gestation, black race, young age, obesity, family history of preeclampsia, preeclampsia on a previous pregnancy [6].

Preeclampsia is frequently seen in Indian population. The study was conducted to assess neonatal outcome of preeclampsia in OBG department of B J Medical college, civil hospital ahmedabad.

MATERIALS AND METHODS:

This is a prospective study was carried out in department of OBG of B J medical college ahmedabad from July 2014 to December 2014.

A total of 150 cases confirmed of preeclampsia were included during the study period. Informed and written consent was obtained. The data was collected through a proforma. The salient features included name, age, obstetric history, h/o present illness, the findings of general physical examination and systemic examination specially abdominal and vaginal examination. Patients were assessed on the basis of history, clinical examination, ultrasound and laboratory investigations.

Diagnosis of preeclampsia was based on history, examination and laboratory investigations including urine albumin, serum uric acid, liver function tests and renal function tests.

Details of labour and mode of delivery were noted. APGAR score recorded at 1 and 5 minutes. Resuscitative measures if employed were recorded. Birth weight of the baby was noted. Any indication for admission to NICU was recorded.

RESULTS:

A total of 1800 patients were admitted for delivery during the period July 2014 to December 2014. 150 patients were diagnosed as having preeclampsia. Thus the incidence of preeclampsia is 8.3% in our institution.

All cases of preeclampsia admitted in Dept. of OBG were included in the study. Basic demographic data and obstetric data of the patients are given the Table 1. Majority of preeclampsia patients were young and primiparous. The incidence of preterm deliveries was seen in 46.6% of cases. Severe PIH (>110 mmHg DBP) was seen in 40% of cases.

The results regarding the perinatal conditions showed a prevalence of 82.6% of live births. Low birth weight (<2.5 kg) was seen in 60% of cases. According to the APGAR

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score most presented a value of ≥7 at 5 minute of life. There were 17.4% of stillbirths (Table 2). Perinatal mortality rate increased as severity of preeclampsia increased (Table3). Neonatal intensive care unit admissions were seen in 26.6% of cases.

Table 1: maternal variables

	variables	No. of cases	Percentage
Age	<20	46	30.6
	20-35	98	65.3
	>35	6	4
Parity	Primi	100	66.6
	Multi	50	33.33
Gestational age	Preterm	70	46.6
	Term	80	53.33
Severity of PIH	Mild	90	60
	Sever	60	40
Mode of dilivery	LSCS	70	46.6
	Vaginal	68	45.3
	Forceop	12	8

Table 2: Neonatal variables

	Variables	No. of cases	Percentage
Viability	Live birth	124	82.6
	Still birth	26	17.4
Birth weight	<1.5 kg	18	12
	1.5-2.5	72	48
	>2.5	60	40
APGAR	≥7	92	61.4
	<7	58	38.6

Table3: Perinatal Mortality according to BP

	140/90 to149/94	150/95 to 159/109	>160/110
Number of cases	30	52	68
No. of perinatal mortality	2	8	16
PMR	6.3	15.3	23.5

DISCUSSION:

The prevalence of preeclampsia observed in this study is in agreement with the data found in United States, were approximately 10% of deliveries were diagnosed with preeclampsia [7]. whereas the incidence of preeclampsia is 7.2% in Pakistan [8].

The frequency of preeclampsia which is 8% is significantly higher than expected value of 2.10% quoted in global literature [9].

Regarding the clinical conditions in hospital admissions, it was observed that approximately 40% of patients had severe preeclampsia. The rise in pressure values is an important marker of the intense vasospasm in different organs probably due to the endothelial damage resulting in deficient nutrition and hypoxia [10].

Regarding the delivery no association was found between the type of delivery and diastolic pressure, though caesarean deliveries prevailed with 46.6% of cases. Although the global occurrence was 73.3%, reaching 82% in preeclampsia [10].

As to the perinatal data 82.6% of women with preeclampsia had live birth and 17.4% had still births. Lower rates were seen in other study [12], perinatal mortality increases as the severity of preeclampsia increases [13]. The cause for perinatal mortality in preeclampsia is due to prematurity and low birth weight.Sibai & Bartonalso reported that severe preeclampsia is associated with high perinatal mortality and morbidity [14]. The association of low birth weight was particularly evident with severe preeclampsia as compared to mild preeclampsia [15]. NICU admission and duration of stay was higher in the study group. Similar results were seen in other studies [16].

CONCLUSION:

Preeclampsia is largely a preventable condition and is responsible for high morbidity and mortality. Perinatal mortality rate increases as the severity of preeclampsia increases. The causes for high perinatal mortality are mainly prematurity and low birth weight. Proper antenatal care must be given to all pregnant women to prevent and screen for preeclampsia. Public health awareness, education of primary health care workers and improvement of socio-economic circumstances can help to improve maternal and neonatal prognosis.

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