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A Study on Neonates in Mothers with Preeclampsia

Dr Babu Francis[1], Dr Manju Mahendran[2]

[1]Associate Professor, Department of Paediatrics, Department of Paediatrics, Travancore Medical College, Kollam

[2]Senior resident, Department of Paediatrics. Department of Paediatrics, Travancore Medical College, Kollam

Abstract: ***Hypertension seen in pregnancy is problematic to both the expectant mother and also the foetus. There can be a wide range of foetal and maternal complications which can occur as a direct effect of pregnancy related hypertension. Complications that can occur in the babies are IUGR, haematological abnormalities, respiratory problems, still birth and neurological problems. The study done was a retrospective study, 30 cases were selected and the complications in newborns born to mothers with pre eclampsia were studied. 53.3% of mothers belonged to age group 26-30 years. 56.6% of mothers were primipara. 23.3% of infants were small for gestational age.***

Keywords: Hypertension, Pregnancy, Neonates, IUGR, Haematological abnormalities

1. Introduction

Hypertension uniquely seen in pregnancy is called – Preeclampsia. It is a multisystem disorder, seen in pregnancy leading to morbidity and mortality in the mother, foetus and neonate. So optimal strategies have to be decided in the management of eclampsia.The increased morbidity and mortality seen in preeclampsia often calls for premature delivery in majority of the cases.

Preeclampsia is defined only after 20 weeks of gestation is believed to arise due uteroplacental insufficiency which compromises the blood flow to the developing foetus. Evidence show abnormalities in placentation, where the blood vessels show reduced invasion. [1] Severe preeclampsia is when blood pressure (BP)> 160/110 mm Hg and is associated with proteinuria ≥ 5 gm/day, thrombocytopenia, pulmonary oedema or oliguria. Mild preeclampsia is present when systolic BP is < 160 mm Hg or diastolic BP is < 120 mm Hg with proteinuria ranging from 300 mg - 5 g/day. [1]

Infant outcome in premature delivery: Any infant born before term is not mature physiologically and will carry risk of a wide range of complications. [2] Infant mortality rate [IMR] is always higher in preterm babies. [3] Studiesdone show that such preterm infants are at greater risk for the development of respiratory distress syndrome, transient tachypnea of newborn (TTN) and respiratory failure as compared with term infants. [4]
Infants born due to preeclampsia in mothersare susceptible to:

- Growth restriction in utero – IUGR
- Haematological abnormalities
- Respiratory problems.
- Neurological problems
- Still birth
- Adult diseases of foetal origin

Growth Restriction – intrauterine growth restriction (IUGR) is a well-known complication in preeclampsia. The babies born are grossly underweight and can also lead to perinatal mortality.
In IUGR, the birth weight of the baby is below the 10th percentile of the average for the gestational age. The basic pathology is due to reduced availability/ transfer of nutrients from mother to foetus.

Hematologic abnormalities: Thrombocytopenia (reduced platelet count)is seen in infants at birth or within couple of days following delivery. Severity of thrombocytopenia varies with the severity of preeclampsia. The mechanism is not known but believed to be due to suppression of megakaryocyte proliferation due to foetal hypoxia. Neutropenia is another complication seen which occurs probably due to bone marrow suppression due to hypoxia of the foetus. [5]

Respiratory Abnormalities: Respiratory distress syndrome, transient tachypnea of the newborn (TTN), respiratory failure are seen due to immature respiratory system due to preterm delivery. Bronchopulmonary dysplasia happens due to failure in vascular growth where the alveoli fail to develop as in a mature lung. [6]

Neurological problems: It can be responsible for cerebral palsy or other problems associated with brain development depending upon the severity and the extent of IUGR. [7]

Still birth: This is the most unwanted outcome depends entirely on the severity of the preeclampsia.

Adult diseases that originate in the foetal life: Many of the diseases/ disorders/ syndromes seen in adult life have genetic or other predisposing factors. Due to the changes seen in foetal environment in utero in preeclampsia certain modifications can happen with the expression of the diseases/ disorders in adult life. Metabolic syndrome, hypertension etc. have been traced to their foetal origin. [8]

This study is undertaken to see the outcome of preeclampsia in infants in our institution.

2. Material and Methods

The study was conducted in the Department of Paediatrics, Travancore Medical College, Kollam. The study was done from April 2015 to April 2016. It is a retrospective study. 30 cases were identified and were chosen for the study. The cases which crossed 37 weeks of gestational age were used.

Only cases where haematological investigation records were available were chosen. Cord blood was utilised for haematological evaluation.

3. Results

Table 1: Showing age group of mothers

Age group	*Frequency*
< 20 years	2
20-25 years	9
26-30 years	16
>30 years	3

Table 2: Showing the para status

	Frequency
Primi para	17
Multipara	13

Table 3: Showing complications

Complications	*Frequency*
Small for gestational age	7
Thrombocytopenia	5
Neutropenia	1
Respiratory problems	3

4. Discussion

In the present study, based on age group of mother, 2 mothers belonged to age group <20 years, 9 mothers belonged to age group 20- 25 years, 16 cases belonged to age group 26-30 years and 3 cases belonged to age group >30 years.

Out of the 30 cases, 17 were primipara and 13 were multipara.

7 neonates born were small for gestational age, 5 showed thrombocytopenia, 1 showed neutropenia and 3 showed respiratory problems.

The findings in this study with regards to para status and foetal development is similar to study conducted by Sandhya Sivakumar, B. Vishnu Bhat and Bhawana Ashok Badhe. [9]

5. Conclusion

The following conclusions were drawn from this study

- 53.3% of mothers belonged to age group 26-30 years.
- 56.6% of mothers were primipara.
- 23.3% of nonates were small for gestational age.

A further study with a larger study population and wider study parameters is being planned in our center.

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