



Neonatal Outcomes in Pre-eclampsia: An Institutional Study

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Abstract

Background: *Pregnancy induced hypertension is the most common medical problem encountered in pregnancy. It complicates up to 15% of pregnancies and accounts for approximately a quarter of all antenatal admissions. It remains an important cause of maternal, and fetal, morbidity and mortality.*

Objectives: *The study was conducted with aim of evaluating the neonatal outcomes in pregnant ladies with pre-eclampsia treated at our institute.*

Materials and Methods: *Study is a retrospective analysis conducted at our institute from 2014 to 2015. All patients with pre-eclampsia were assessed for neonatal outcomes.*

Results: *There were total 50 patients. The mean age was 23.4 years. There were 32 cases of mild pre-eclampsia as compared to 18 cases of severe pre-eclampsia. There was no maternal mortality. There were two still births (4 percent) and 48 live births (96 percent). Average birth weight was 2.3 kgs and their mean APGAR score was 7 and 8 at one and five minutes respectively.*

Conclusion: *Low birth weight and prematurity are the main consequences of preeclampsia. An early diagnosis of the pre-eclampsia in addition to a suitable intervention is desirable for favorable outcome.*

Keywords: *Pre-Eclampsia, Pregnancy Induced Hypertension, Gestational Hypertension, Protein urea.*

Introduction

Pregnancy-induced hypertension is one of the maternal diseases that causes the most detrimental effects to the maternal, fetal, and neonatal organs⁽¹⁾. Pregnancy-induced hypertension is the general classification for hypertension diseases during pregnancy, which include gestational hypertension (without proteinuria), pre-eclampsia (with proteinuria), and eclampsia (pre-eclampsia with convulsions). This disease is responsible for high maternal and perinatal morbidity and mortality

rates, and is one of the main public health problems^(2,3).

Perinatal complications include preterm delivery, low birth weight, prematurity, intrauterine foetal death (IUFD), intrauterine growth restriction (IUGR), foetal asphyxia, acidosis, stillbirths and neonatal deaths. Maternal risks associated with gestational hypertension include development of uncontrolled hypertension, superimposed preeclampsia, eclampsia, HELLP syndrome (hemolysis, elevated liver enzymes and low platelets), acute

renal and hepatic failure, acute pulmonary edema, cerebrovascular accidents, congestive heart failure, intracranial hemorrhages, proteinuria more than 4-5 grams/day, microangiopathic hemolytic anemia, abruptio placentae, deep vein thrombosis (DVT), occipital lobe blindness, post partum hemorrhages, disseminated intravascular coagulation (DIC) and /or consumptive coagulopathy^(4,5).

For the conceptus, the most common consequences associated with hypertension diseases are the restriction of intra-uterine growth, low birth weight, and prematurity^(3,6).

We conducted a retrospective analysis of neonatal outcome in pregnant ladies with PIH.

Aims and Objectives

The study was conducted with aim of evaluating the neonatal outcomes in pregnant ladies with pre-eclampsia treated at our institute.

Materials and Methods

The study was a retrospective analysis conducted at our institute from 2014 to 2015. All patients with pre-eclampsia were assessed for neonatal outcomes. Antenatal mothers having regular antenatal care (3 or more antenatal visits to the obstetric department) were included in the study. Only those mothers with age group between 18 to 36 years were enrolled for the study. All pregnant women coming to antenatal outpatient department were screened for pre-eclampsia by measuring blood pressure and testing for proteinuria. If blood pressure is 140/90mm Hg or high, second reading was taken after 6 hrs. And if blood pressure persisted to be more than 140/90 mm Hg, with significant proteinuria (1+ or more with dipstick) they were included in study as PRE-ECLAMPSIA GROUP which is also referred as STUDY GROUP. All the mothers are given regular antenatal care and followed till delivery. They were given drugs and any complications were treated.

Results

There were total 50 patients. The mean age was 23.4 years. Ratio of Primi parous to multi parous was 16:9. Ratio of of preterm to term deliveries was 3:7. There were 32 cases of mild pre-eclampsia as compared to 18 cases of severe pre-eclampsia. Normal deliveries constituted 13 cases (26 percent) while casarean section was done in 34 cases (68 percent) and instrument assisted delivery were conducted in 3 cases (6 percent).

There was no maternal mortality. There were two still births (4 percent) and 48 live births (96 percent) and one neonatal death(2 percent). Average birth weight was 2.3 kgs and their mean APGAR score was 7 and 8 at one and five minutes respectively.

Discussion

Preeclampsia is the most common medical problem encountered in pregnancy and remains an important cause of maternal, and fetal, morbidity and mortality. It complicates up to 15% of pregnancies and accounts for approximately a quarter of all antenatal admissions. The hypertensive disorders of pregnancy cover a spectrum of conditions, of which pre-eclampsia poses the greatest potential risk and remains one of the most common causes of maternal death⁽⁷⁾.

During normal pregnancy systolic blood pressure changes little; however, diastolic blood pressure decreases by 10 mm of hg early in gestation (12 to 13 weeks) and rises again to pre pregnancy levels in the third trimester⁽⁸⁾.

Pregnancy induced hypertension can be further classified as a direct result of gravid state. They are further classified as

- i. gestation hypertension (without proteinuria)
- ii. Preeclampsia and eclampsia (with proteinuria)⁽⁹⁾.

Regarding the delivery, caesarean section was performed in 68 percent of patients. Similar data was found in São Paulo Hospital when the global occurrence of cesarean was 73.3%, reaching 82% in hypertension women with high proteinuria⁽¹⁰⁾.

On the other hand, in Umtata General Hospital, the prevalence of cesareans among hypertensive women was 30.2%⁽¹¹⁾.

As to the perinatal data, 96% of women had live births. The frequency of stillbirths was 4%. Rates were rates (11.2%) were found in the study mentioned previously⁽¹¹⁾.

The average weight of New borns was 2392 g. The mean birth weight in the mild PIH group was 2.51 kilograms while in severe PIH it was 2.1 kilograms. Only 25 percent of new borns were low birth weight in the mild PIH group while 77.78 percent of severe PIH were low birth weight babies.

As to prematurity, it was verified that 15 (30 %) NBs were preterm. A prevalence (11.3% to 78.3%) was observed in a previously mentioned study, performed with 334 hypertensive pregnant women⁽¹⁰⁾. NB prematurity is a common complication of hypertensive disease, either due to the spontaneous labor or to the obstetric conduct of interrupting the pregnancy due to the compromised maternal-fetal health. Prematurity increases perinatal morbidity and mortality rates with possible immediate or late sequels, requiring public policies that offer support to these neonates⁽¹⁰⁾.

Prematurity, restricted intrauterine growth, and low birth weight were the outcomes found in a retrospective cohort study among 1308 hypertensive pregnant women. Premature delivery was more frequent among women with severe pre-eclampsia⁽¹²⁾.

A study performed with 234 hypertensive pregnant women without proteinuria, found a reduction in birth weight of 685g associated to a 5 mmHg rise in the daily mean DBP⁽¹³⁾. Similarly, a study with 307 NBs of women with pre-eclampsia and severe pre-eclampsia found that birth weight was reduced in about 5% and 12%, respectively⁽¹⁴⁾.

For the Australian Society of the Study of Hypertension in Pregnancy, about 25% of children of mothers with pre-eclampsia are small for the gestational age⁽³⁾.

Mean Apgar score in mild pre-eclampsia at 1 minute was 6.1 while at 5 minutes was 8.19. Mean APGAR score in 16 live births with severe pre-eclampsia was 5.63 at one minute and 7.19 at five minutes.

In a study by Oliviera et al., the relative risks of obtaining an APGAR value smaller than seven in the first and fifth minutes of life in women with pregnancy-induced hypertension and chronic hypertension were 1.26 and 1.65; 1.45 and 1.49, respectively⁽¹⁵⁾.

Conclusion

The present study results showed a low stillbirth rate and highlighted low birth weight and prematurity as the main perinatal consequences. An early diagnosis of the pre-eclampsia in addition to a suitable intervention meant higher chances of having a pregnancy without complications to the mother and negative effects to the fetus' health.

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