

# Perinatal Outcomes in Normotensive Second Pregnancy in Woman having Early Onset Preeclampsia in First Pregnancy

SHABANA KHOKHAR<sup>1</sup>, MUSARRAT SALEEM<sup>2</sup>, MUNAZZA TAYYAB<sup>3</sup>, MUHAMMAD MEHTAB BAIG<sup>4</sup>, MOHAMMAD MOHSIN KHAN<sup>5</sup>, MUHAMMAD IMRAN NAZIR<sup>6</sup>

<sup>1</sup>Assistant Professor, Rahbar Medical & Dental college Lahore.

<sup>2</sup>Avicenna Medical College Lahore

<sup>3</sup>Assistant Professor Rahbar Medical & Dental College Lahore

<sup>4</sup>M.O

<sup>5</sup>Professor of Community Medicine, NM&DC Sargodha

<sup>6</sup>Associate Professor BAMC Multan

Correspondence to Dr. Shabana Khokhar, Cell: 03213104423

## ABSTRACT

**Aim:** To determine frequency of perinatal outcome in normo-tensive second pregnancy in women having early onset pre-eclampsia during first pregnancy.

**Methods:** A total number of one hundred and ten (110) pregnant females having age 16-40 years and normotensive second pregnancy (with singleton pregnancy and having early onset preeclampsia) were included. Women were admitted and monitored till delivery. The pregnancy outcome was evaluated under supervision of consultant gynecologist. Outcome variables i.e., small for gestational age (SGA), large for gestational age (LGA), preterm delivery and cesarean section were noted.

**Results:** The mean age was 28.46±4.43 years. Mean body mass index (BMI) was 23.22±3.68 Kg/m<sup>2</sup>. Mean gestational age at the time of delivery was 38.93±2.74 weeks. Regarding outcomes of normotensive second pregnancy after first hypertensive pregnancy, there were 18 (16.36%) neonates who were SGA, 13(11.80%) were LGA, cesarean section was done for 17 (15.45%) deliveries, and pre-term birth occurred in 14(12.72%) females.

**Conclusion:** In present study, there were 16.36% neonates who were SGA, 11.80% were LGA, cesarean section was done in 12.72% deliveries, and pre-term birth occurred in 15.75% cases in females with normotensive second pregnancy in women having early onset preeclampsia in first pregnancy.

**Keywords:** Normotensive pregnancy, small for gestational age, larger for gestational age, pre-term birth,

---

## INTRODUCTION

Pre-eclampsia occurs in 2-5% of all pregnancies and it is a strongest factor of adverse maternal and neonatal outcomes<sup>1</sup>. Mostly it occurs during first pregnancy, if occurs in first pregnancy then it is mostly found in subsequent pregnancies as well with reoccurrence rate of 11.5% to 65%<sup>2-5</sup>. The onset is in third trimester but in some cases onset is early in second trimester. The underlying pathology of early and late pre-eclampsia differs and early induction of labor is many times necessary in women with early onset of disease<sup>6</sup>. It also has many adverse effects on neonates; such as small for gestational age, respiratory distress and placental abruptions as compared to the late onset eclampsia<sup>7-9</sup>. The risk of developing pre-eclampsia in subsequent pregnancy in about 80% patients who had early pre-eclampsia onset in primary pregnancy<sup>8,9</sup>. In studying effect of preeclampsia on succeeding pregnancy effects, it is essential to stratify women by gestational age at delivery in preeclampsia pregnancies.

It is also proposed that the pre-eclampsia in first pregnancy can also have some adverse effects on normotensive second pregnancy. The objective of the present study is to determine the perinatal outcomes in normotensive second pregnancy in patients having early onset pre-eclampsia during their first pregnancy. There is lack of data in Pakistani population regarding perinatal outcomes in normotensive second pregnancy having

preeclampsia in first pregnancy. The results of this will help us to determine the perinatal outcomes and results of this study will help us to manage these patients in a better way. As if poor perinatal outcomes will be found in these patients then strict monitoring and management was done in these patients to prevent complications in these patients.

The objective of the study was to determine frequency of perinatal outcome in normo-tensive 2<sup>nd</sup> pregnancy in women having early onset pre-eclampsia in 1<sup>st</sup> pregnancy.

## PATIENTS AND METHOD

Pregnant woman having age 16-40 years coming to the outpatient and emergency Department of Obstetrics and Gynaecology of RM&DC attached hospital were selected. Only pregnant women with singleton pregnancy and having early onset preeclampsia in first pregnancy were included. Women with multiple pregnancy and morbidly obese patients having BMI>35 kg/m<sup>2</sup> were excluded. Permission from the ethical committee of the institution was taken before the start of the study. Informed consent was taken from patients before inclusion.

Women were admitted and monitored till delivery. The pregnancy outcome was evaluated under supervision of consultant gynecologist having more than 5 years post fellowship experience. Outcome variables i.e. small for gestational age, large for gestational age, preterm delivery and cesarean section were noted according to this criterion; Small for gestational age (SGA): If baby has body weight less than 10 centiles of estimated after delivery. Large for gestational age (LGA): if baby has body weight

Received on 18-08-2018

Accepted on 19-12-2018

more than 90 centiles of estimated after delivery. Preterm Delivery: delivery of baby before 37 week of gestation period. Pelvic examination was done to determine the gestational period at the time of delivery in all patients.

Data was entered and analysis was done by using SPSS v23 software. Frequencies and percentages were calculated for perinatal outcomes e.g. small for gestational age, large for gestational age, preterm delivery and cesarean section.

## RESULTS

A total number of one hundred and ten (110) pregnant females having normotensive second pregnancy were included. The mean age of the female patients was 28.46±4.43 years. Mean body mass index (BMI) of patients was 23.22±3.68 Kg/m<sup>2</sup>. Mean gestational age at the time of delivery was 38.93±2.74 weeks. Regarding outcomes of normotensive second pregnancy after 1<sup>st</sup>hypertensive pregnancy, there were 18 (16.36%) neonates who were SGA, 13 (11.80%) were LGA, cesarean section was done for 17 (15.45%) deliveries, and pre-term birth occurred in 14 (12.72%) females (Table 1).

Table : Frequency of adverse neonatal outcomes.

	Frequency	Percentage
SGA	18	16.36
LGA	13	11.80
pre-term birth	14	12.72
C-section	17	15.45

## DISCUSSION

Pre-eclampsia is a leading cause of ante-natal morbidity & mortality worldwide. The etiology of this disorder is still elusive, most probably abnormal placentation is the risk factor for this condition<sup>10,11</sup>.

In present study, we determine the outcomes of normo-tensive 2<sup>nd</sup> pregnancy in women having early onset pre-eclampsia in 1<sup>st</sup> pregnancy. In present study, there were 16.36% neonates who were SGA, 11.80% were LGA, cesarean section was done for 15.45% deliveries, and pre-term birth occurred in 12.72% cases.

Lain et al. conducted a study on 130 normo-tensive pregnant females who had previously eclampsia in last pregnancy. They found still-birth rate of 8.20% and c-section in 13.6% patients<sup>12</sup>.

A study by Makkonen et al. found a higher rate of still-birth and NICU admissions rate in patients having normo-tensive pregnant females who had previously eclampsia in last pregnancy. But they did not found any significant effect on neonatal birth weight<sup>13</sup>.

Chang et al. conducted a study on major perinatal outcome in second normotensive pregnancy in women having early onset preeclampsia in 1<sup>st</sup>pregnancy and reported SGA in 14.1%, LGA in 8.1%, preterm delivery in 9.6% and cesarean section in 14.4%<sup>14</sup>.

In another study by Wikström et al. concluded that these females have more than double chances of still-birth, abrupt placenta, lower birth weight and pre-mature delivery<sup>15</sup>.

The prime focus of present study was only limited to the adverse neonatal outcomes. We did not evaluated the effects of early pre-eclampsia in 1<sup>st</sup> pregnancy on subsequent pregnancies on maternal outcomes. Furthermore, mechanism of these adverse events has also not investigated yet.

## CONCLUSION

In present study, there were 16.36% neonates who were SGA, 11.80% were LGA, C-section was done in 12.72% deliveries, and pre-term birth occurred in 15.75% cases in females with normo-tensive 2<sup>nd</sup> pregnancy in women having early onset preeclampsia in 1<sup>st</sup>pregnancy.

## REFERENCES

1. Mustafa R, Ahmed S, Gupta A, Venuto RC. A comprehensive review of hypertension in pregnancy. *J Pregnancy*. 2012;(2012):105918.
2. Luo Z, An N, Xu H, Larante A, Audibert F, Fraser W. The effects and mechanisms of primiparity on the risk of pre-eclampsia: a systematic review. *Paediatr Perinat Epidemiol*. 2007;21(suppl):36-45.
3. Kenny LC, Black MA, Poston L, Taylor R, Myers JE, Baker PN, et al. Early pregnancy prediction of preeclampsia in nulliparous women, combining clinical risk and biomarkers: the Screening for Pregnancy Endpoints (SCOPE) international cohort study. *Hypertension*. 2014;64(3):644-52.
4. Sonia H, Sengwee T, Sven C. Risk of pre-eclampsia in first and subsequent pregnancies: prospective cohort study. *BMJ*. 2009; 338:2255-6.
5. Barton JR, Sibai BM. Prediction and prevention of recurrent preeclampsia. *Obstet Gynecol*. 2008;112:359-72.
6. Chang JJ, Muglia LJ, Macones GA. Association of early-onset preeclampsia in first pregnancy with normotensive second pregnancy outcomes: a population-based study. *BJOG*. 2010;117(8):946-53.
7. Valensise H, Vasapollo B, Gagliardi G, Novelli GP. Early and late preeclampsia: two different maternal hemodynamic states in the latent phase of the disease. *Hypertension*. 2008;52:873-80.
8. Jelin AC, Cheng YW, Shaffer BL, Kaimal AJ, Little SE, Caughey AB. Early-onset preeclampsia and neonatal outcomes. *J Matern Fetal Neonatal Med*. 2010;23(5):389-92.
9. Elvedi-Gašparović V, Beljan P, Gverić AS, Schuster S, Skrablin S. What affects the outcome of severe preeclampsia? *Signa Vitae*. 2015;10(suppl 1):6-12.
10. Luo ZC, An N, Xu HR, Larante A, Audibert F, Fraser WD. The effects and mechanisms of primiparity on the risk of pre-eclampsia: a systematic review. *Paediatr Perinat Epidemiol*. 2007;21(Suppl. 1):36-45.
11. Sibai B, Dekker G, Kupferminc M. Pre-eclampsia. *Lancet*. 2005;365(9461):785-99.
12. Lain KY, Krohn MA, Roberts JM. Second pregnancy outcomes following preeclampsia in a first pregnancy. *Hypertens Pregnancy*. 2005;24(2):159-69.
13. Makkonen N, Heinonen S, Kirkinen P. Obstetric prognosis in second pregnancy after preeclampsia in first pregnancy. *Hypertension in pregnancy*. 2000;19(2):173-81.
14. Chang JJ, Muglia LJ, Macones GA. Association of early-onset preeclampsia in first pregnancy with normotensive second pregnancy outcomes: a population-based study. *BJOG*. 2010;117(8):946-53.
15. Wikström AK, Stephansson O, Cnattingius S. Previous preeclampsia and risks of adverse outcomes in subsequent nonpreeclamptic pregnancies. *Am J Obstet Gynecol*. 2011;204(2):148-e1.