Maternal and perinatal outcome in nulliparous women complicated with pregnancy hypertension

Tavassoli Fatemeh, Ghasemi Marziyeh, Ghomian Nayereh, Ghorbani Anahita, Tavassoli Samira
Introduction

• Pregnancy induced hypertension is one of the common outcomes with unknown etiology that causes the most maternal and perinatal morbidity and mortality.

• Preeclampsia is characterized by new onset hypertension and proteinuria usually after 20th week of gestation, but the condition is also associated with abnormalities of the coagulation system, disturbed liver function, renal failure and cerebral ischaemia.
Introduction

- These disorders remain the main cause of both maternal and perinatal morbidity and mortality throughout the world.
- Approximately, 30% of hypertensive disorders of pregnancy are caused by chronic hypertension and 70% of cases are diagnosed as gestational hypertension/preeclampsia.
Introduction

- Moreover, preeclampsia produces potentially lethal complications including placental ablation, DIC, intracranial haemorrhage, hepatic failure, acute renal failure, and cardiovascular collapse. Intrauterine foetal growth restriction (IUGR), intrauterine foetal demise and prematurity are the other related obstetric problems.
Introduction

• The offspring of women with hypertension during pregnancy experience higher rates of prematurity and low birth weight compared to healthy maternal controls.

• Expectant management with temporizing treatment should be performed to lengthen gestation, which may be associated with enhanced perinatal survival. Maternal and foetal surveillance is conducted at regular intervals and delivery is indicated for worsening maternal and foetal conditions.
Introduction

• Hauth et al. in 2000 performed the study on hypertensive and normotensive nulliparous women and found that maternal and foetal mortality is significantly higher in hypertensive nulliparous women.

• The study performed in 2002 showed that pregnant women with severe preeclampsia had increased rate of preterm delivery and low birthweight as compared to mild preeclampsia.
Introduction

• The aim of this study was to evaluate maternal and perinatal outcome in nulliparous women complicated with pregnancy hypertension
Patients and Methods

• This is a descriptive-analytic and case-control study.
• Over one year period (2007-2008), 200 nulliparous women with gestational age of > 34 weeks who were referred to Imam Reza Hospital affiliated to Mashhad University of Medical Sciences were evaluated for maternal and perinatal outcome.
• The women were divided into two groups: 100 hypertensive nulliparous women as case group (34 hypertension, 17 mild and 49 severe preeclampsia) and 100 normotensive nulliparous women as control group.
Patients and Methods

- The case group were primigravida women with pregnancy hypertension (blood pressure > 140 mmHg systolic or > 90 mmHg diastolic measured on at least two occasions) with gestational age of > 34 weeks who did not have any history of cardiovascular disorders, renal failure, diabetes, and other problems that may threat mother or foetus.
- The control group were healthy primigravida women without pregnancy hypertension.
- Gestational age was defined by last menstrual period confirmed by first trimester ultrasound.
Patients and Methods

- A questionnaire was completed for each woman including: mother's age, obstetric history, parity, gravidity, weight and cause of the hypertension, smoking habits, superimposed preeclampsia, by new onset proteinuria of 300 mg or greater in a 24-h specimen, abruptio placentae, or an increase in blood pressure in a woman whose hypertension had previously been well controlled, and delivery age and mode;
- data relating to the neonate - weight, death and Apgar score.
Patients and Methods

- Data were processed with SPSS software (version 11).
- Comparisons between the groups were made with a conventional chi-square test for qualitative variables and student-t test and for quantitave ivariables. P < 0.05 was considered statistically significant.
Results

- In this descriptive-analytic and case-control study including 200 women, 100 were in case group and 100 in control group. In case group, most of the patients (49%) were complicated by severe preeclampsia (blood pressure >160/110 and 24-h urine protein >300mg), 17% of patients were in mild preeclampsia group (blood pressure <160/110 and 24-h urine protein >300mg and 34% were in hypertension group (blood pressure >140/90 without proteinuria), respectively.
Results

• The mean maternal age was 22.4±4.62 year in case group and 22.96±4.59 in control group. There was no significant difference between case and control group when they were compared with regard to mean maternal age (P=0.392).

• The mean gestational age was 37.37±2.25 weeks in case group and 38.81±1.71 in control group. They were different in the view of mean gestational age (P<0.0001)
Results

• The mean birthweight in case group was 2483±653.22gm and in control group was 2829.41±565.14gm. They were significantly different in view of birthweight (P<0.001). Moreover, the mean birthlength was different between the studied groups (P=0.004)
Table 1: Mean and standard deviation of the characteristics of mothers and their newborns in the studied groups.

<table>
<thead>
<tr>
<th>Groups parameters</th>
<th>Case</th>
<th>Control</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maternal age (year)</td>
<td>22.4±4.62</td>
<td>22.96±4.59</td>
<td>0.392</td>
</tr>
<tr>
<td>Gestational age (weeks)</td>
<td>37.37±2.25</td>
<td>38.81±1.71</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>Birth weight (gm)</td>
<td>2483.08±653.22</td>
<td>2829.41±565.14</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Birth length (cm)</td>
<td>47.31±3.90</td>
<td>48.68±2.76</td>
<td>0.004</td>
</tr>
</tbody>
</table>
Perinatal and maternal outcome

• Low Birth Weight (LBW) (68.4%) <0.0001,
• Intra uterine growth retardation (27.5%) 0.0001,
• Need to Neonatal Intensive Care Unit (NICU) (17.6%) 0.012,
• Need for rescusitation (21.6%) 0.004,
• 1 minute neonatal APGAR<7(23.5%) 0.001 were higher in the severe preeclampsia group,
• not significantly different in the view of cesarean rate and placental detachment
• Headache was the main compliant of the women in the case group (46%)
- Vision defect 26%
- Epigastric pain 27%
- Oliguria 5.10%
- Creatinine level > 1.2 16%
- Creatinine level < 1.2 84%
- Platelet Level < 100000 13.30%
- Platelet level > 100000 86.70%
- Seizures 5%
Discussion

• Hypertensive disorder of pregnancy is responsible for significant maternal/perinatal morbidity and mortality.
• Maternal death associated with preeclampsia/eclampsia assumed more importance since previously frequent etiologies such as infection and haemorrhage became less common.
• The study performed in 2005 reported that IUGR, low APGAR score and foetal deaths during labour were significantly more frequent in severe preeclamptic women when compared to other groups.
• Different mortality rates were presented in literature changing in the range of 47-370/1000.
Discussion

• Operative delivery is reported to be increased in hypertensive disorder of pregnancy
Conclusion

• The results of this study revealed that the most maternal and foetal-neonatal complications are associated with pregnancy induced hypertension, especially severe preeclampsia.

• Early detection of high-risk individuals and mild cases by well-trained personnel, timely referral to advanced tertiary centers, early and timely treatment of preeclampsia cases and correct training of the mothers about fertility age and the importance of care during pregnancy may lead to improved perinatal and maternal outcomes.
Thanks!