

Feto-Maternal Outcome in Pre-Eclampsia at Tertiary Care Hospital- A Cross Sectional Study

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Abstract:

Objectives: The present study was to evaluate the feto-maternal outcome and prevalence of pre-eclampsia at tertiary care hospital also to assess the maternal outcomes in terms of severity, complications of pre-eclampsia, maternal mortality and to determine the neonatal outcome in pre-eclamptic women. The associated risk factors for pre-eclampsia in patients has also been analysed.

Methods: A total of 100 patients with pregnancies complicated by the onset of pre-eclampsia were included. Diagnostic criteria for pre-eclampsia were Systolic blood pressure of 140 mmHg or more or diastolic blood pressure of 90 mmHg or more on 2 occasions at least 4 hours apart after 20 weeks of gestation in a woman with a previously normal blood pressure, Proteinuria of 300 mg or more per 24hour urine collection or dipstick reading +2 Or in the absence of proteinuria and new onset hypertension.

Results: Most of the patients (49%) were in age group of 26-30 years. Maximum number of patients were primigravida 60%. 33% of patients had a typical vaginal delivery, 63% had a caesarean section, and 96% of patients were from lower socioeconomic classes. Oedema of feet and headache were two most common symptoms present in 80 (80.00%) and 62 (62.0%) patients respectively. Eclampsia (11%), HELLP syndrome (22%), and abruptio (8%) were the most common maternal complications. 100 new-borns, 37 (37.00%) had a normal result, 27% (27.00%) had low birth weight, 15 (15.00%) had IUGR, 14 (14.00%) had IUFD, 6 (6.00%) had RDS, and 1 (1.00%) was stillborn. Additionally, 40 (40.00%) kids were admitted to the NICU.

Conclusions: Pre-eclampsia prevails as a serious condition. Causes of death and morbidity in pregnant women and postpartum period is due to lack of proper antenatal care, lack of knowledge and education among low socioeconomic status individuals. Early prenatal diagnosis, evaluation, appropriate patient counselling, proper education can help in identifying the warning signs during the antepartum, intrapartum and postpartum period. Proper and timely ICU care is an important factor in management of patients having complications of pre-eclampsia. Timely referral of pre-eclampsia patients to tertiary care centre can save mothers life and also improve maternal and perinatal outcome in pre-eclampsia patients.

Keywords: Feto-maternal outcome, Pre-eclampsia, Pregnancy, Age group.

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Introduction

Hypertensive disorders include preeclampsia, gestational hypertension, and chronic hypertension and complicate up to 10 percent of pregnancies. As a group, they are one member triad—along with haemorrhage and infection. According to world health organisation 16% of maternal deaths were reported due to hypertensive disease which is higher in proportion than the other leading causes such as haemorrhage, sepsis [1].

Preeclampsia is best described as a pregnancy-specific syndrome that can affect virtually every organ system. In India, hypertensive disorders

contribute for the third most important cause of maternal mortality [2]. Pre-eclampsia is described as rise in blood pressure and proteinuria which is of new onset. It is described as severe pre-eclampsia if there is substantial and proteinuria or the occurrence of symptoms due to end organ damage. Preeclampsia can be of early onset, less than 34 weeks, late onset, over 34 weeks, and with multi-organ involvement reflected by thrombocytopenia, renal dysfunction, hepatocellular necrosis, central nervous system perturbations, or pulmonary oedema [3].

There is increased risk of cardiovascular and cerebrovascular complications, abruptio placenta, disseminated intravascular coagulation and even maternal death. So early diagnosis and close monitoring in pre-eclampsia plays a vital role in preventing its complications however still we lack methods to predict and prevent pre-eclampsia. Delivery of placenta is the definitive and curative treatment. Hence, the present study was conducted to improve clinical knowledge of pre-eclampsia among variable group of patients and rationalise the strategies to improve perinatal and maternal outcome [3].

We were decided to study the fetomaternal outcome as it was not done earlier in this institute. It was observed that the number of pre-eclampsia patients were more than the usual. By doing this study we can study and initiate a discussion to improve the outcome. This study is a step towards the improvement in fetomaternal outcome.

Aims & Objectives

1. To study fetomaternal outcome in pre-eclampsia at tertiary care hospital.
2. To estimate the prevalence of preeclampsia in a tertiary care hospital.
3. To assess maternal outcomes in terms of severity, complications of pre-eclampsia, and maternal mortality.
4. To determine the neonatal outcome in pre-eclamptic women.
5. To analyse the associated risk factors for pre-eclampsia

Methods

This was a descriptive observational study at tertiary care hospital Rohilkhand Medical college and hospital, Bareilly, UP, conducted between September 2022 to August 2023. 100 patients with pregnancies complicated by the onset of pre-eclampsia were included in the study.

Diagnostic Criteria for Pre-eclampsia

1. Systolic blood pressure of 140 mmHg or more or diastolic blood pressure of 90 mmHg or more on 2 occasions at least 4 hours apart after 20 weeks of gestation in a woman with a previously normal blood pressure.

2. Proteinuria of 300 mg or more per 24hour urine collection or dipstick reading +2 Or in the absence of proteinuria.
3. new onset hypertension with the new onset of any of the following [4].
 - Thrombocytopenia of platelet count less than 1,00,00 platelets/mm³
 - renal insufficiency having serum creatinine concentrations greater than 1.1mg/dl or doubling of serum creatinine concentration in the absence of other renal diseases and impaired liver functions with elevated blood concentrations of liver transaminases to twice normal concentration.

Inclusion Criteria

1. Patient developing hypertension after 20weeks of gestation
2. Patients having proteinuria, another maternal organ dysfunction including renal insufficiency, liver involvement.
3. Patient having uteroplacental dysfunction including fetal growth restriction.

Exclusion Criteria

1. Multiple pregnancy
2. Patients with neurological disorders
3. Patients of essential hypertension
4. Patients with chronic renal failure

Statistical Analysis

Data on socio demographic variables and obstetric characteristics were collected from case records from MRD. The details of the history, examination, blood pressure, premonitory symptoms, proteinuria and the investigations were collected and analysed. Foetal well-being was evaluated by analysing the nonstress test and radiological tests present in case file. Details of labour and modes of delivery were noted. Maternal and fetal conditions and complications were noted. At the end of study, the data was compiled and analysed by using SPSS version 23. Significance of statistical association were tested at P value < 0.05 [5].

Results

A total of 100 patients were analysed. Most of the patients (49%) were in the age group of 26-30 years as shown in table 1.

Table 1: Distribution according to age.

Age	No. of patients	Percentage
≤20	10	10.00
21-25	30	30.00
26-30	49	49.00
>30	9	9.00
Total	100	100

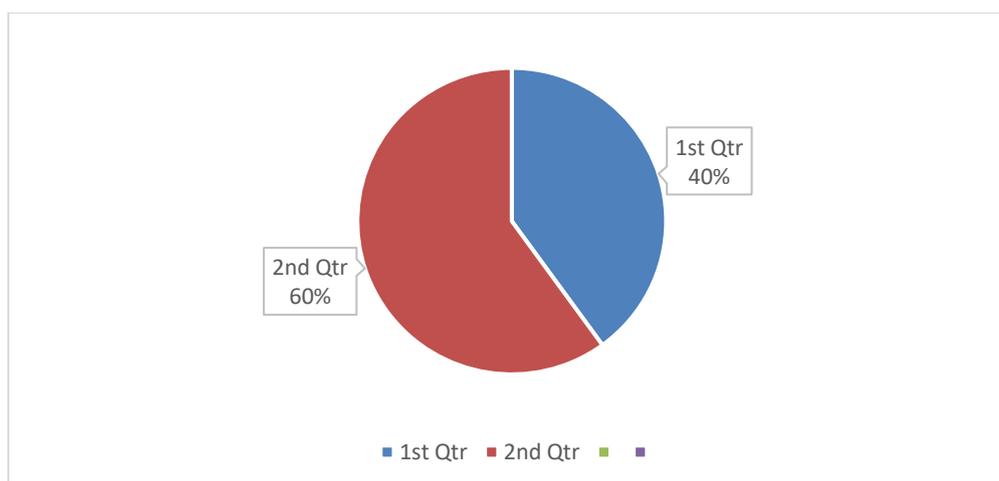


Figure 1: Distribution of population.

Maximum number of patients were primigravida 60%. 33% of patients had a typical vaginal delivery, 63% had a caesarean section, and 96% of patients were from lower socioeconomic classes. Oedema of feet and headache were two most common symptoms present in 80 (80.00%) and 62 (62.0%) patients respectively as shown in Table 2.

Table 2: Distribution according to presenting complaints.

Presenting complaints	No. of patients	Percentage
Headache	62	62.0
Epigastric pain	4	4.00
Bleeding per vaginum	8	8.00
Visual disturbance	18	18.00
Edema of feet	80	80.00

Table 3 shows that eclampsia (11%), HELLP syndrome (22%), and abruptio (8%) were the most common maternal complications.

Table 3: Distribution according to maternal outcome.

Complications	No. of patients	Percentages
HELLP syndrome	22	22.00
Abruptio placenta	8	8.00
Eclampsia	11	11.00
Pulmonary edema	4	4.00
Intracranial haemorrhage	1	1.00
Acute kidney Injury	11	11.00
No complications	45	45.00

Table 4: Distribution according to fetal outcome.

Fetal outcome	No. of babies	Percentages
IUFD	14	14.00
IUGR	15	15.00
LBW	27	27.00
RDS	6	6.00
Still birth	1	1.00
Normal	37	37.00
Total	100	100

There were four incidences of maternal mortality. Table 4 shows that, of the 100 newborns, 37 (37.00%) had a normal result, 27% (27.00%) had low birth weight, 15 (15.00%) had IUGR, 14 (14.00%) had IUFD, 6 (6.00%) had RDS, and 1 (1.00%) was stillborn. Additionally, 40 (40.00%) kids were admitted to the NICU.

Discussion

A total 6480 deliveries were conducted at our hospital out of which 100 patients had pre-eclampsia.

The prevalence of pre-eclampsia of 1.54% observed in present study is similar to 0.50% in

study by Saxena et al but lower than 3.83 %reported by Neelema B [6].

Out of 100 cases of pre-eclampsia in the present study, the highest number of cases (49.00%) were in age group of 26- 30 years of age. In this study the minimum age was 20 years, maximum age was 35 years while mean age was 25 years.

Out of 100 patients 44 (44%) patients were booked and 56 (56%) patients were unbooked which was comparable to the studies by Neelima B [6] and Saxena et al[7].

More women in this study were primigravida, 56 (56.00%). Primigravida as pre-eclampsia has been reported in studies by Patil SA et al [8]and Neelima B [6].

Oedema of feet and headache were two most common symptoms present in 80 (80.00%) and 62 (62.0%) patients respectively, followed by visual disturbances 18 (18.00%), bleeding per-vaginal 8 (8.00%) later on diagnosed as abruption placenta and epigastric pain 4 (4.00%). A study done by Patel et al by Saxena et al [7] showed that 45% and 44% patients in their study had headache as main symptoms.

Out of 100 patients 63 (63.00%) patients were taken for LSCS, 33 (33.00%) patients delivered vaginally and 2 (2.00%) patients had instrumental delivery. Two patients were expired undelivered.

Out of 100 patients 49 (49.00%) patients had no complications and 51% women had developed complications. Out of 51 (51.00%) patients 22 (22.00%) had HELLP syndrome, 11 (11.00%) had eclampsia, 8 (8.00%) had abruptio placenta and 1 (1.00%) had intracranial haemorrhage.

In the present study, 14 were IUFD, out of which 7 IUFD due to abruptio placenta, 5 were brought IUFD and 2 IUFD due to 2 patients expired undelivered. 15.09% babies were IUGR. This observation is similar to the study by Patil SA, et al [8] in which 14.16% had IUGR babies while Neelema B [6] and Shobha S Pillai [9] observed 3% and 21% respectively.

In other studies 44.94% babies required neonatal ICU. Major neonatal complications were IUGR, RDS, septicaemia, LBW and neonatal death. In study by Pillai et al [9] 39.09% babies required neonatal ICU. Perinatal mortality was seen in 27.35% while in study by Patil, SA et al [8], Neelema B [6], and Pillai SS [9], perinatal mortality was 10%, 35.65% and 18% respectively.

Conclusions

The present study concluded that the severity can be reduced with appropriate antenatal care and prompt treatment Pre-eclampsia prevails as a serious condition. Causes of death and morbidity in pregnant women and postpartum period is due to lack of proper antenatal care, lack of knowledge and education among low socioeconomic status individuals. Early prenatal diagnosis, evaluation, appropriate patient counselling, proper education can help in identifying the warning signs during the antepartum, intrapartum and postpartum period. Proper and timely ICU care is an important factor in management of patients having complications of pre-eclampsia. Timely referral of pre-eclampsia patients to tertiary care centre can save mothers life and also improve maternal and perinatal outcome in pre-eclampsia patients.

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