International Journal of Reproduction, Contraception, Obstetrics and Gynecology
Chauhan JU et al. Int J Reprod Contracept Obstet Gynecol. 2023 Jun;12(6):1798-1801
www.ijrcog.org
pISSN 2320-1770 | eISSN 2320-1789

DOI: https://dx.doi.org/10.18203/2320-1770.ijrcog20231558

Original Research Article

Study of fetomaternal outcome in pre-eclampsia at tertiary care centres, South Gujarat

Jigisha U. Chauhan, Shraddha S. Agarwal*, Mahak P. Jain, Sejal M. Patel, Katha T. Contractor, Jahanavi A. Vaidya

Department of Obstetrics and Gynecology, SMIMER Hospital and Medical College, Surat, Gujarat, India

Received: 14 April 2023
Revised: 11 May 2023
Accepted: 12 May 2023

***Correspondence:**
Dr. Shraddha S. Agarwal,
E-mail: jainmahak1995@gmail.com

ABSTRACT

Background: Hypertensive disorders are among the most common medical disorder during pregnancy and continue to be a serious challenge in obstetric practice. It affects about 7-15% of all gestations. In India it accounts for the third most important cause of maternal mortality. Aim if this study was to study the prevalence of pre-eclampsia and feto-maternal outcome in cases of pre-eclampsia.
Methods: This was a descriptive observational study conducted over a period from February 2019 to July 2021. This study enrolled 106 cases of pre-eclampsia, cases were selected by inclusion and exclusion criteria, data were entered and analysed by using SPSS version 20.
Results: A total of 106 patients were analysed. It was observed that it was more common in age group of 26 to 30 years 51%, 56% were unbooked patients. Maximum number of patients were primigravida 60%, 96% patients were from lower socioeconomic class, 37% patients had normal vaginal delivery, 63% had caesarean delivery. The most common maternal complication was eclampsia (12%), HELLP Syndrome 12%, abruptio occurred in 8% of patients. Maternal mortality occurred in 4 cases. Out of 106 babies 37 (34.93%) babies had normal outcome while 29% (27.35%) had low birth weight, 16 (15.09%) babies were IUGR, 15 (14.5%) babies were IUFD, 7 (6.6%) babies had RDS and 2 (1.8%) babies were stillbirth 40 (44.94%) babies were admitted in NICU.
Conclusions: This study concludes that foetal and maternal outcome were markedly affected by pre-eclampsia and also the grave complications were more common in pre-eclampsia. So proper antenatal care, early diagnosis of pre-eclampsia and timely intervention will decrease maternal perinatal morbidity and mortality.

Keywords: Fetomaternal outcome, Pre-eclampsia

INTRODUCTION

Hypertensive disorders represent the most common medical complication of pregnancy which affects about 7-15% of all gestations. 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. In India hypertensive disorders contribute for the third most important cause of maternal mortality.[1]

Pre-eclampsia is described as rise in blood pressure and proteinuria which is of new onset, occurring after 20 weeks of gestation. It is described as severe pre-eclampsia if there is substantial increase in blood pressure and proteinuria or the occurrence of symptoms due to end organ damage.

There is increased risk of acute renal failure, cardiovascular and cerebrovascular complications, abruptio placenta, disseminated intravascular coagulation and even maternal death.[2] 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 appears to be the only 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 care.

Aims of this study were to study the prevalence of pre-eclampsia at our centre, to study the effects of pre-eclampsia on antenatal, intranatal and postpartum periods and its complications and to study the neonatal outcome in pre-eclamptic women.

METHODS

This was a descriptive observational study at tertiary care centre SMIMER hospital Surat, South Gujarat, conducted between February 2019 to July 2021. 106 patients with pregnancies complicated by the onset of pre-eclampsia when included in the study.

Diagnostic criteria for pre-eclampsia[3]

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, new onset hypertension with the new onset of any of the following. Thrombocytopenia of platelet count less than 1,00,00 platelets/mm^3, 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

Inclusion criteria were the patient developing hypertension after 20weeks of gestation and coexistence of one or more of the following new onset conditions.[4] Patients having proteinuria, another maternal organ dysfunction including renal insufficiency, liver involvement. Patient having uteroplacental dysfunction including fetal growth restriction. Also, patient having singleton pregnancies and patient who will give consent.

Exclusion criteria

Exclusion criteria were pregnancy <20 weeks, neurological complications, multiple pregnancy, eclampsia on admission, patient who will not give consent and other associated medical conditions.

Statistical analysis

Data on socio demographic variables and obstetric characteristics were collected by using predesigned and pretested structured questionnaire. After admission the patients were monitored for blood pressure, for any imminent symptoms, proteinuria. Patients were evaluated by different biochemical tests. Foetal well-being was evaluated by nonstress test and radiological tests. 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 20. Significance of statistical association were tested at P value < 0.05.

RESULTS

A total of 106 patients were analysed. It was observed that it was more common in age group of 26 to 30 years 51% as shown in Table 1 and 56% were unbooked patients.

Table 1: Distribution according to age.

Age	No. of patients	Percentage
≤20	12	11.32
21-25	34	32.07
26-30	51	48.11
>30	9	8.50
Total	106	100

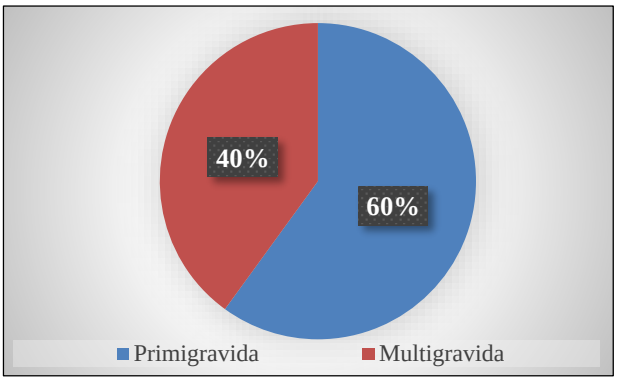

Figure 1: Distribution of population.

Maximum number of patients were primigravida 60%. 96% patients were from lower socioeconomic class, 37% patients had normal vaginal delivery, 63% had caesarean delivery. Oedema of feet and headache were two most common symptoms present in 83 (78.30%) and 65 (61.3%) patients respectively as shown in Table 2.

The most common maternal complication was eclampsia (12%), HELLP syndrome 12%, abruptio occurred in 8% of patients as evident from Table 3.

Table 2: Distribution according to presenting complaints.

Presenting complains	No. of patients	Percentage
Headache	65	61.3
Epigastric pain	4	3.77
Bleeding pervaginum	8	7.54
Visual disturbance	18	16.98
Edema of feet	83	78.30

Table 3: Distribution according to maternal outcome.

Complications	No. of patients	Percentages
HELLP syndrome	12	11.32
Abrupton placenta	8	7.54
Eclampsia	12	11.32
Pulmonary edema	2	1.90
Intracranial haemorrhage	1	0.94
No complications	71	66.98
Total	106	100

Table 4: Distribution according to fetal outcome.

Fetal outcome	No. of babies	Percentages
IUFD	15	14.15
IUGR	16	15.09
LBW	29	27.35
RDS	7	6.60
Still birth	2	1.88
Normal	37	34.93
Total	106	100

Maternal mortality occurred in 4 cases. As we can make out from Table 4, out of 106 babies 37 (34.93%) babies had normal outcome while 29% (27.35%) had low birth weight, 16 (15.09%) babies were IUGR, 15 (14.5%) babies were IUFD, 7 (6.6%) babies had RDS and 2 (1.8%) babies were stillbirth 40 (44.94%) babies were admitted in NICU.

DISCUSSION

During the study period, total 9687 deliveries were conducted at our hospital out of which 106 patients had pre-eclampsia.

The prevalence of pre-eclampsia of 1.09% observed in present study is similar to 0.50% in study by Saxena et al but lower than 3.83 %reported by Neelema B.[7,8]

Out of 106 cases of pre-eclampsia in the present study, the highest number of cases (48.11%) were in age group of 26-30 years of age. In this study the minimum age was 19 years, maximum age was 35 years while mean age was 25.86±3.78 years. Other studies by Kumavat et al shows 44% cases and by Pillai et al shows 42.12% cases were in age group of 26-30 years which correlates with our study.[9,10]

Out of 106 patients 50 (47%) patients were booked and 56 (53%) patients were unbooked which was comparable to the studies by Neelima and Saxena et al.[7,8]

More than half of the women in this study were primigravida, 60 (56.60%). Primigravida as separate risk factor for pre-eclampsia has been reported in studies by Patel et al and Neelima.[11,8]

Oedema of feet and headache were two most common symptoms present in 83 (78.30%) and 65 (61.3%) patients respectively. However, 12 patients out of 106, later on developed convulsions (8 were antepartum and 4 were postpartum) followed by visual disturbances 18 (16.98%), bleeding prevaginal 8 (7.54%) later on diagnosed as abruption placenta and epigastric pain 4 (3.77%). A study done by Patel et al by Saxena et al showed that 45% and 44% patients in their study had headache as main symptoms.[11,7]

In present study, with +1 proteinuria 7 (35%) cases had developed complications, with +2 proteinuria 14 (27%), with +3 proteinuria 10 (40%) and with +4 proteinuria 4 (40%) cases had developed complications.

Out of 106 patients 63 (60.58%) patients taken for LSCS, 37 (35.58%) patients delivered vaginally and 43 (3.84%) patients had instrumental delivery. Two patients were expired undelivered. Caesarean section rates of 51.67% and 64.54% respectively were reported by Patel et al and by Pillai which correlates well with our study.[11,10]

Out of 106 patients 71 (66.98%) patients had no complications and 35 women had developed complications. Out of 35 (33.02%) patients 12 (11.32%) had HELLP syndrome, 12 (11.32%) had eclampsia, 8 (7.54%) had abruptio placenta, 2(1.90%) had pulmonary oedema and 1 (0.94%) had intracranial haemorrhage.

In this study maternal death was in 4 (3.77%) cases due to abruptio placenta with severe pre-eclampsia, intracranial haemorrhage, pulmonary oedema with cardiac failure, postpartum eclampsia with pulmonary oedema which was comparable to the study by Neelema which had 3.04% maternal deaths.[8]

In the present study, out of 106 babies, 15 were IUFD, out of which 8 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 Patel et al in which 14.16% had IUGR babies while Neelema et al and Shobha S Pillai et al observed 3% and 21% respectively.[11,8,10] 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 39.09% babies required neonatal

ICU.[10] Perinatal mortality was seen in 27.35% while in study by Patel et al, Neelema and Pillai perinatal mortality was respectively 10%, 35.65% and 18%.[11,8,10]

CONCLUSION

Pre-eclampsia is not a totally preventable disease but its severity can be decreased by proper antenatal care and timely intervention. Pre-eclampsia is one of the important causes of maternal and perinatal morbidity and mortality probably resulting from inadequate and suboptimal antenatal care, lack of education and awareness amongst people belonging to low socioeconomic class. Early antenatal booking, regular assessment, proper investigation, proper counselling of patients education and in recognizing the warning symptoms of severe pre-eclampsia, proper monitoring in ICU of both mother and foetus during the antepartum, intrapartum and postpartum period as per requirement and timely delivery necessary to improve maternal and perinatal outcome in pre-eclampsia patients.

This study has some limitations. In this study, only singleton pregnancy had been included. Therefore, the relation of preeclampsia in multiple pregnancy, on admission eclampsia and other medical condition could not be evaluated from this study, which are separate risk factors of preeclampsia. Having drawn from a smaller population over a period of 18 months, the results cannot be applied to the national population. For the latter, larger and more powered studies are advocated.

Funding: No funding sources
Conflict of interest: None declared
Ethical approval: The study was approved by the Institutional Ethics Committee

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Cite this article as: Chauhan JU, Agarwal SS, Jain MP, Patel SM, Contractor KT, Vaidya JA. Study of fetomaternal outcome in pre-eclampsia at tertiary care centres, south Gujarat. Int J Reprod Contracept Obstet Gynecol 2023;12:1798-801.