ORIGINAL ARTICLE

Determine the Frequency of Severe Pre-Eclampsia and its Treatment Outcomes

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ABSTRACT

Objective: To examine the frequency of pre-eclampsia in pregnant women also determine the treatment outcomes.

Study Design: Prospective/Observational

Place and Duration of Study: Department of Obstetrics & Gynecology, Ayesha Hospital, Lahore Cantt from 1st January 2018 to 31st December 2019

Materials and Methods: Four hundred pregnant women with ages 18 to 40 years attending antenatal clinic were enrolled in this study. Patients detailed demographics and medical history were recorded. Systolic BP, diastolic BP and proteinuria were examined. Methyldopa with nifedipine was given to preeclamptic patients. Treatment outcomes were examined.

Results: Severe pre-eclampsia was found in 70 (17.5%) patients. Majority of patients 32 (45.71%) were between 20 to 25 years of age. Mean gestational age of pre-eclamptic patients was 32.15±3.2 weeks. Mean BMI was 20.42±2.48 kg/m^2. A significant improvement was observed in term of reducing the systolic blood pressure and diastolic blood pressure after treatment (pre treatment mean systolic blood pressure was 166.3±20.46 mmHg and after treatment it was 142.37±12.75 mmHg with p-value <0.0001). At start mean diastolic blood pressure was 110.42±11.40 mmHg and after treatment it was 92.54±6.28 mmHg with p-value <0.0001.

Conclusion: The frequency of severe pre-eclampsia is very high. The use of methyldopa with nifedipine is safe and effective for the treatment of severe pre-eclampsia.

Key words: Frequency, Severe pre-eclampsia, Outcome

INTRODUCTION

Hypertensive disorders with pregnancy are the second leading cause of maternal death worldwide.[1] Hypertensive disorders with pregnancy are common in low- and middle-income countries.[1] Maternal hemorrhage, hypertension, and sepsis are the three leading causes of maternal deaths.[2]

Preeclampsia (PE) has significant avoidable adverse maternal and fetal outcome.[1] Severe PE associated with 50,000-100,000 annual deaths worldwide and the incidence of severe PE is 1.7% in Africa and 0.5% in Europe and United Kingdom.[2]

Pregnancy hypertension is classified into 3 major categories: pre-existing (chronic) hypertension, gestational hypertension, and pre-eclampsia (which includes eclampsia).[3] Studies demonstrated that 2.2% pre-eclampsia (excluding eclampsia; range 1.4% [Middle East] to 3.9% [Africa]), and 0.28% eclampsia (range 0.14% [Western Pacific] to 0.55% [Africa])[4,5]; gestational hypertension was excluded from the WHO multi-country survey estimates. Other published rates have varied considerably; in hospital-based retrospective or prospective studies of variable size, gestational hypertension has been reported to complicate 2%–3% of deliveries in Karachi, Pakistan[3], 6.6% in south India[7], and 28.9% in southwest Nigeria.[8]

Antihypertensive therapy in PIH is to prevent complications due to hypertension while advancement of pregnancy thereby increases the fetal mortality. The commonly used antihypertensive drugs are methyldopa, nifedipine and labetalol. Since years, methyldopa is widely used in PIH treatment. It takes 12-24 hrs for adequate therapeutic response and large dose is required but it is helpful for long term control of blood pressure. Nifedipine is a non-dihydropyridine calcium channel blocker with potent vasodilated property. It causes vasodilation in human pregnant uterine vessels as well fetal placental vessels.[9-10] The present study was conducted aimed to examine the frequency of severe preeclampsia also determine the management outcomes in pregnant women with preeclampsia.

MATERIALS AND METHODS

Data were collected from Department of Obstetrics & Gynecology, Ayesha Hospital, Lahore Cantt from 1st January 2018 to 31st December 2019 for this prospective/observational study. A total of 400 pregnant women with ages 18 to 40 years attending antenatal clinic were enrolled. Patients detailed demographic including age, gravidity, gestational age, and body mass index were recorded. Patients with cardiovascular disease, patients with chronic renal failure and patients with other severe diseases were excluded. All the patients were examined for severe pre-eclampsia. Pre-eclampsia was defined as systolic blood pressure >160 mmHG and diastolic BP >110 mmHG and having significant proteinuria. Methyldopa with nifedipine was given to all the patients. Methyldopa 250mg with nifedipine 10 mg per day was given to all the severe pre-eclampsia patients for seven days. Efficacy of antihypertensive therapy was examined in term of reduction in systolic and diastolic BP. All the data were analyzed by SPSS version 24.0. A paired sample 't' test was applied to compare the pre and post treatment mean

systolic and diastolic blood pressure. P-value <0.05 was taken as statistically significant.

RESULTS

Out of all the 400 pregnant women whom were attending antennal clinic, pre-eclampsia was found in 70 (17.5%) patients (Table 1). Fifteen (21.43%) patients had ages <20 years, 32 (45.71%) patients were ages between 20 to 25 years, 17 (24.29%) were ages 26 to 30 years and 6 (8.57%) were ages above 30 years. Mean gestational age of pre-eclamptic patients was 32.15±3.2 weeks. Mean BMI was 20.42±2.48 kg/m^2. 37 (52.86%) patients were primigravida while 33 (47.14%) were multigravida (Table 2).

Methyldopa with nifedipine was given to all the pre-eclamptic women for 1 week as a treatment therapy for pre-eclampsia. A significant improvement was observed in term of reducing the systolic BP and diastolic BP after treatment (pre treatment mean systolic BP was 166.3±20.4 mmHg and after treatment it was 142.3±12.7 mmHg with p-value <0.001). At start mean diastolic BP was 110.4±11.4 mmHg and after treatment it was 92.5±6.2 mmHg with p-value <0.001 (Table 3).

Table 1: Frequency of severe pre-eclampsia

Pre-eclampsia	No.	%
Yes	70	17.5
No	330	82.5

Table 2: Demographics of all the pre-eclamptic patients

Variable	No.	%
Age (years)		
<20	15	21.43
20 - 25	32	45.71
26 - 30	17	24.29
> 30	6	8.57
Gestational age (weeks)	32.15±3.2	
BMI (kg/m^2)	20.42±2.48	
Gravidity		
Primigravida	37	52.86
Multigravida	33	47.14

Table 3: Treatment outcomes of pre-eclampsia

Variable	At start	At End	P value
Systolic BP (mmHg)	166.3±20.4	142.3±12.7	<0.001
Diastolic BP (mmHg)	110.4±11.4	92.5±6.2	<0.001

DISCUSSION

Eclampsia is one the most frequent gynecological disorder and the leading cause of maternal and fetal morbidity and mortality.[11] Early and effective management may help to reduce the morbidity and mortality associated with this life-threatening disorder.[12]. We conducted this study with aimed to examine the frequency of severe pre-eclampsia in pregnant women. In this regard 400 pregnant women were enrolled whom were attending antenatal clinic. Severe pre-eclampsia was found in 70 (17.5%) patients. A study conducted by Ali et al[13] regarding the management of eclampsia and in their study the incidence of eclampsia was 1.7% out of 5323 cases and majority of the patients were between 20 to 25 years of age. Another study conducted by Nisa et al[14] reported the incidence of eclampsia was 48% and pre-eclampsia was 25.23%.

A study conducted by Parveen[15] regarding frequency and impact of hypertensive disorders in pregnancy and she reported that eclampsia was the commonest complication found in 32% patients.

In present study majority 45.71% of pre-eclamptic patients were ages between 20 to 25 years followed by 26 to 30 years 24.29% and mean gestational age and BMI was 32.15±3.2 weeks and 20.42±2.48 kg/m^2. These results were comparable to many of previous studies.[16,17]

In our study for management of pre-eclampsia we used methyldopa with nifedipine doses for seven days and as a treatment outcome we found that a significant reduce in systolic and diastolic blood pressure. At start of treatment mean systolic BP was 166.3±20.46 mmHg and after treatment it was 142.37±12.75 mmHg with p-value <0.0001). At start mean diastolic BP was 110.42±11.40 mmHg and after treatment it was 92.54±6.28 mmHg with p-value <0.0001. A study conducted by Togarikar[18] showed similarity to our findings in which he reported a significant reduce of systolic and diastolic BP after using methyldopa with nifedipine p-value <0.001.Another study conducted by Jayawardana and Lekamge[19] regarding comparison of methyldopa and nifedipine for management of severe pre-eclampsia and the reported no significant difference in term of effectiveness for controlling systolic and diastolic BP between both doses with P-value >0.05.

Kanaki et al[20] conducted study regarding comparison of methyldopa with nifedipine for treatment of gestational hypertension and they reported that the mean reduction of systolic/diastolic BP with methyldopa in four weeks was 17/13 mmHg as compared to nifedipine being 18.5/14.5 in four weeks. There was significant reduction in systolic blood pressure in nifedipine group compared to methyldopa group at four weeks (p=0.04).

CONCLUSION

Pregnancy related hypertension can lead to maternal mortality and morbidity. We concluded from this study that frequency of severe pre-eclampsia is very high. The use of methyldopa with nifedipine is safe and effective for the treatment of severe pre-eclampsia.

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