

ORIGINAL ARTICLE

FREQUENCY OF PRIMIGRAVIDA IN PATIENTS WITH ECLAMPSIA

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Background: Pregnancy-induced hypertension (PIH) occurs in about 5% of pregnancies and is a major cause of high perinatal and maternal morbidity and mortality. In several international studies, primigravidas were associated with a significantly higher incidence of eclampsia. The local studies so far have a small sample size and mainly focus on preeclampsia in all pregnant women. limited data is available on the frequency of eclampsia in primigravidas in our population. This study aims to determine the frequency of primigravidas in patients with eclampsia after 20 weeks of gestation. **Methods:** This descriptive Cross-sectional study was conducted in the Department of Obstetrics and Gynaecology, Ayub Teaching Hospital Abbottabad from 7/10/2020 to 7/4/2021. A total of 134 patients were observed. Diagnosis of eclampsia was based upon obstetrical history, presence of fits or coma, raised blood pressure and presence of proteinuria on urine complete examination. Immediate management included stabilizing the patient and delivery by Induction of labour or Caesarean section. The guardians of the patients explained the purpose and the benefits of the study and informed written consent was taken. **Results:** Our study shows that among 134 patients, 96 (72%) patients were in the age range of 18–27 years while 38 (28%) patients were in the age range of 28–35 years. The mean age was 30 years with SD±10.94. Eighty-two (61%) patients had a POG range ≤34 weeks while 52 (39%) patients had a POG range >34 weeks. Forty-eight (36%) patients had BMI <27 Kg/m² while 86 (64%) patients had BMI >27 Kg/m². Fifty-six (42%) patients had a positive history of hypertension while 78(58%) patients had a negative history of hypertension. Out of 134 patients, 102(76%) were primigravidas while 32 (24%) were multigravidas. **Conclusion:** Our study concludes that the frequency of primigravidas was 76% in patients with eclampsia after 20 weeks of gestation presenting at tertiary care hospital Abbottabad.

Keywords: Eclampsia; Primigravida; Hypertension

Citation: Faiza, Sultana R, Batool J, Khalid S, Khan AM. Frequency of primigravida in patients with eclampsia. J Ayub Med Coll Abbottabad 2023;35(2):265–8.

DOI: 10.55519/JAMC-02-11489

INTRODUCTION

Pregnancy-induced hypertension (PIH) occur in about 5% of pregnancies and is a major cause of high perinatal morbidity and mortality.¹ The American Congress of Obstetricians and Gynaecologists (ACOG), defines hypertension in pregnancy as a sustained increase in systolic and diastolic blood pressure to greater than 140/90mmHg in women with previously normal blood pressure.² The onset of signs and symptoms of pregnancy induced hypertension usually occur after 20 weeks of gestation. American Congress of Obstetricians and Gynecologists defined preeclampsia as pregnancy induced hypertension with renal involvement and proteinuria.^{1,2,3} Preeclampsia is a risk factor for eclampsia.^{3–5} Eclampsia is defined as the incidence of one or more episodes of generalized tonic-clonic seizure in a previously normotensive woman suffering from severe preeclampsia provided that other neurologic conditions have been excluded⁶. Eclampsia is a life-threatening complication of preeclampsia and affects 1 to 2% of pregnancies. It usually develops after 20 weeks of gestation and is a major cause of death in developing countries.⁶ It is characterized by life-threatening

symptoms like high blood pressure cardiovascular, cerebrovascular, kidney, liver involvement, disseminated intravascular coagulation (DIC) and HELLP syndrome (haemolysis, elevated liver enzymes, low platelet count) in mother, neonatal and foetal complications like preterm birth low birth weight and intrapartum death. Cerebral haemorrhage is the most common cause of death in patients with eclampsia.⁷ Primigravidas are defined as women who conceived for the first time and are a more crucial group regarding assistance in terms of antenatal, natal and post natal care. About 7% of pregnant females are suffering from preeclampsia.⁸ Tukur J *et al* depicted that the incidence of primigravidas was 78.3% in patients with eclampsia.⁹ Xu Xiong *et al* found out the frequency of primigravidas in patients with eclampsia was 53.8% and the highest incidence of hypertension occurred in the age group of 18–22 years (41.3%).¹⁰ Other risk factors for developing pre-eclampsia and eclampsia are previous history of eclampsia raised body mass index (BMI), raised blood pressure on booking visit and age of more than 40 years.¹¹ In several international studies primigravidas are associated with a significantly higher incidence of eclampsia. The local studies so far have a small sample

size and mainly focus on preeclampsia in all pregnant women.¹²⁻¹⁶ Limited data is available on the frequency of eclampsia in primigravidas in our population. This study aims to determine the frequency of primigravidas in patients with eclampsia after 20 weeks of gestation.

MATERIAL AND METHODS

This descriptive Cross-sectional study was conducted in the Department of Obstetrics and Gynaecology, Ayub Teaching Hospital Abbottabad from 7/10/2020 to 7/4/2021. Approval was taken from the hospital’s ethical committee. The sample size was calculated by the WHO calculator with a 5% level of significance and 90% power of the test. Non-probability consecutive sampling technique was utilized. All eclamptic patients aged between 18 to 35 years, with gestational amenorrhoea greater than 20 weeks of gestation and singleton pregnancy on ultrasound were included in the study. We defined eclampsia as the occurrence of one or more generalized tonic-clonic convulsions/ coma in pregnant women in association with pre-eclampsia in the absence of any neurological disease in previously normotensive women. Women with pre-existing history of diabetes mellitus, chronic liver or renal disease, idiopathic seizures or seizures due to neurologic disorders were excluded from the study. Informed written consent was taken from the guardians of all patients. Diagnosis of eclampsia in primigravidas was based upon obstetrical history, presence of fits or coma, raised blood pressure and presence of proteinuria on urine complete examination. Management included securing airway, control of blood pressure with either hydralazine or labetalol, prevention and control of seizures with MgSO₄, intake-output record and consultation with the medical department was carried out. The patient was delivered by either induction of labour or by caesarean section. The confounding variables and bias were controlled by taking a detailed past obstetrical, medical and family history and was excluded. The data was entered into SPSS version 23. The same software was used for analysis. Categorical variables like the presence or absence of primigravidas, age group and history of hypertension was described in terms of frequencies and percentages, and mean and standard deviation was calculated for quantitative variables like age, height, weight, parity and period of gestation at the time of fits. Stratification was done with regard to age, gestational age, BMI and history of hypertension to determine the effect of these variables on eclampsia. Post stratification chi-square test was applied. *p*-value <0.05 was considered significant.

RESULTS

Among 134 patients 96 (72%) were in the age range 18–27 years while 38 (28%) patients were in the age range of 28–35 years. The mean age was 30 (SD±10.94) years

(Figure-1). Eighty-two (61%) patients had POG range ≤34 weeks while 52 (39%) patients had POG range >34 weeks. The mean POG was 35 (SD ± 5.31) weeks (Table-1). Forty-eight (36%) patients had BMI <27 Kg/m² while 86 (64%) patients had BMI >27 Kg/m². Mean BMI was 27 Kg/m² (SD±5.12) (Table-2). Fifty-six (42%) patients had a positive history of hypertension while 78 (58%) patients had a negative history of hypertension (Table-3). One hundred and two (76%) patients were primigravidas while 32 (24%) patients were multigravidas (Figure-2). Stratification of primigravidas with respect to age, gestational age, BMI and history of hypertension was done. Out of 102 primigravidas patients 73 (76.04%) were in the age range 18–27 years while 29 (76.31%) were in the age range 28–35 years (Table-4). Most of the eclamptic primigravidas presented at or below 34 weeks of Gestation 62 (75.60%) (Table-5). Sixty-six (76.74%) patients were overweight with BMI greater than 27kg/m² (Table-6). Forty-two out of 102 primigravidas with eclampsia had a significant past history of hypertension (Table-7). Post-stratification results were not statistically significant.

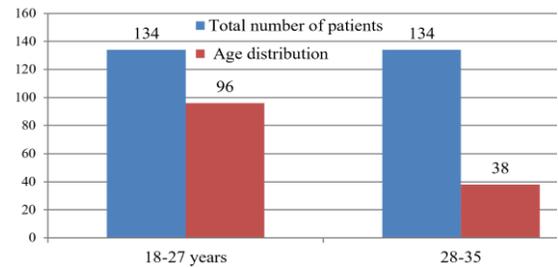


Figure-1: Age Distribution
Mean age was 30 years with SD±10.

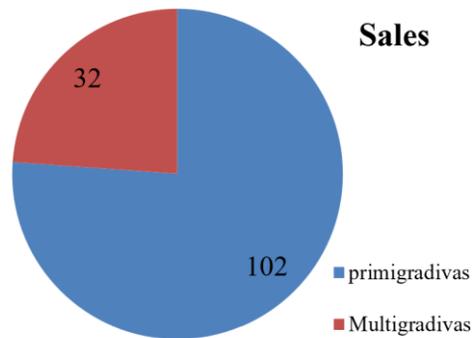


Figure-2: Frequency of Primi and Multigravidas (n=134)

Table-1: Gestational ages (at the time of fits) (n=134)

POG	Frequency	Percentage
≤ 34 weeks	82	61
> 34 weeks	52	39
Total	134	100

Mean POG was 35 weeks with SD+5.31

Table-2: BMI (n=134)

BMI	Frequency	Percentage
≤ 27 Kg/m ²	48	36
>27 Kg/m ²	86	64
Total	134	100

Mean BMI was 27 Kg/m² (SD±5.12). Mean Height was 1.5 Kg/m² (SD±0.77). Mean Weight was 86 Kg/m² (SD±10.67)

Table-3: History of Hypertension (n=134)

Hypertension	Frequency	Percentage
Yes	56	42
No	78	58
Total	134	100

Table-4: stratification of Primi gravidas with respect to age (n=134)

Primi gravidas	18–27 years	28–35 years	Total	*p-value
Yes	73 (76.04%)	29 (76.31%)	102 (76.11%)	0.9732
No	23 (23.95%)	9 (23.68%)	32 (23.88%)	
Total	96 (100%)	38 (100%)	134 (100%)	

*Chi square test was applied

Table-5: stratification of primi gravidas with respect to gestation age (n=134)

Primi Gravidas	≤ 34 weeks	>34 weeks	Total	*p-value
Yes	62 (75.60%)	40 (76.92%)	102 (76.11%)	0.8620
No	20 (24.39%)	12 (23.07%)	32 (23.88%)	
Total	82 (100%)	52 (100%)	134 (100%)	

*Chi square test was applied

Table-6: Stratification of Primi gravidas with respect to BMI (n=134)

Primi gravidas	≤ 27 Kg/m ²	>27 Kg/m ²	Total	*p-value
Yes	36 (75%)	66 (76.74%)	102 (76.11%)	0.8203
No	12 (25%)	20 (23.25%)	32 (23.88%)	
Total	48 (100%)	86 (100%)	134 (100%)	

*Chi square test was applied

Table-7: Stratification of primi gravidas with respect to history of hypertension (n=134).

Primi gravidas	Yes	No	Total	*p-value
Yes	42 (75%)	60 (76.92%)	102 (76.11%)	0.7967
No	14 (25%)	18 (23.07%)	32 (23.88%)	
Total	56 (100%)	78 (100%)	134 (100%)	

*Chi square test was applied

DISCUSSION

Pregnancy-induced hypertension (PIH) occurs in about 5% of pregnancies and is a major cause of high perinatal and maternal morbidity and mortality.¹ The American Congress of Obstetricians and Gynaecologists (ACOG), defined hypertension in pregnancy as a sustained increase in systolic and diastolic blood pressure to greater than 140/90mmHg in women with previously normal blood pressure.² The onset of signs and symptoms of pregnancy induced hypertension usually occur after 20 weeks of gestation. American Congress of Obstetricians and Gynaecologists defined preeclampsia as pregnancy induced hypertension with renal involvement and proteinuria.^{1,3} Preeclampsia is a risk factor for eclampsia.³⁻⁵ Eclampsia defines as the incidence of one or more episodes of generalized tonic-clonic seizure in a previously normotensive woman suffering from severe preeclampsia provided that other neurologic conditions have been excluded.⁶

Our study shows that among 134 patients, 96 (72%) patients were in the age range 18–27 years while 38 (28%) patients were in age range 28–35 years. The mean age was 30 years with SD±10.94. Eighty-two

(61%) patients had POG range ≤34 weeks while 52(39%) patients had POG range >34 weeks. Forty-eight (36%) patients had BMI <27 Kg/m² while 86 (64%) patients had BMI >27 Kg/m². Fifty-six (42%) patients had a positive history of hypertension while 78(58%) patients had a negative history of hypertension. Out of 134 patients, 102 (76%) *p* were primigravidas while 32 (24%) were multigravidas.

Similar results were observed in another study carried out by Tukar J *et al*¹², which reported an incidence of 9.45%. In their study 207 out of 2197 patients delivered were eclamptic. Most of their patients never had any antenatal visit previously (82.6%). 58.5% of the patients had aged less than 20 years. The frequency of preeclampsia was highest in primigravida (78.3%). One hundred and sixteen (56%) of the patients had a history of delayed presentation to the hospital. Sixty-eight (32.9%) of the patients had eclampsia during the antepartum period, 112 (54.1%) patients had eclampsia during the intrapartum period while 27 (13%) patients were diagnosed with eclampsia during postpartum period. 51.7% of the eclamptic patients were delivered by caesarean section. Twenty-two out of 207 eclamptic patients died with a mortality rate 10.6%. 87% of the babies were delivered alive.

Another study carried out by Xiong XU *et al*¹³ found similar results. In their study, 8.2% of the eclamptic patients were less than 20 years while 37.4% were above 30 years. Most of the patients in their study were primigravidas (40.5%). 26.6% of the eclamptic patients had a past history of smoking. 0.9% of the patients had a history of hypertension before pregnancy, while 3.9 and 1.7% of the patients were diagnosed with gestational hypertension and preeclampsia respectively. 9% of the patients delivered before 37 weeks of gestation. 6.9% of newborns were less than 2.5 kg. Still, the birth rate was 0.3%. 53.8% of eclamptic patients were primigravidas. highest incidence of eclampsia was noted in the age group 18–22 years (41.3%).

According to Delmis J *et al*¹⁴ hypertensions in pregnancy is not a single entity and several classifications exist. The American College of Obstetricians and Gynaecologists classifies hypertension in pregnancy into Gestational hypertension, chronic hypertension, preeclampsia-eclampsia and preeclampsia superimposed on chronic hypertension. This classification system is the updated and most widely used in clinical practices. Delmis J *et al*¹⁴ reported a 7% incidence of preeclampsia with the highest incidence in primigravidas. They found a significant association of preeclampsia with a family history which points to a strong hereditary association. In their study preeclampsia was observed in sisters in 37% of cases, in daughters (26%), in granddaughters (16%) and in daughter in laws in 6% of cases.

CONCLUSION

Our study concludes that the frequency of primigravidas was 76% in patients with eclampsia after 20 weeks of gestation presenting at tertiary care hospital Abbottabad.

AUTHORS' CONTRIBUTION

Faiza: Study design, data collection, analysis, data interpretation, write-up. JB, SK, AMK: Proof reading.

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Submitted: November 2, 2022

Revised: November 17, 2022

Accepted: March 20, 2023

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