

ORIGINAL ARTICLE

Frequency of Pregnancy Induced Hypertension in Teenage Pregnancy, Presenting in a Tertiary Care Hospital

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ABSTRACT

Objective: To determine the frequency of pregnancy induced hypertension in teenage pregnancy, presenting in a tertiary care hospital.

Design of the Study: It's a descriptive case series

Study Settings: This study was done at Department of Gynaecology & Obstetrics, Ziauddin Hospital, Karachi from January 2021 to June 2021.

Material and Methods: Total 163 women with gestational age 20 and more weeks, age 10 to 19 years, singleton pregnancy, and with any parity were included in the study. On the basis of clinical examination, pregnancy comprised hypertension was diagnosed. If any patient had BP equal or more than 140/90 on more than two separate occasions, then it was considered as hypertensive. Patients were followed at 24, 28, 34, 36, and 38 weeks till delivery to look for development of Pregnancy induced hypertension. If patient developed any complications, was admitted and managed accordingly. By using computer program SPSS-17, data was entered and analyzed. For post stratification Chi-square test was applied and p-value ≤ 0.05 was considered as significant.

Results of the Study: The average maternal age was 16.53 ± 1.94 years. The mean parity was 3.03 ± 1.44 and mean gravidity was 2.80 ± 1.44 . The mean gestational age was 31.17 ± 3.52 weeks, with range 16(21–37) weeks. Age of 49 women was ≤ 15 years and age of rest of the 114 women patients was >15 years. The parity of gravidity of 113 women was ≤ 3 and it was >3 in 50 women. The parity of 131 women was ≤ 3 and in the 32 women it was >3 . The gestational age of 73 women was ≤ 30 weeks and gestational age of 90 women was >30 weeks. The pregnancy induced hypertension was found in 24(14.7%) females who are expecting involved in the research. Among women with PIH the mean age was 16.46 ± 2.14 years and mean gestational age was 30.83 ± 3.26 weeks. The results showed no statistically significant association of maternal age, gravidity, parity, and gestational age with pregnancy induced hypertension.

Conclusion: For higher incidence of pregnancy induced hypertension, the younger maternal age is a significant risk factor.

Keywords: Pregnancy Induced Hypertension, Teenage Pregnancy, Frequency

INTRODUCTION

In the context of poor social support and maternal wellbeing, teenage pregnancy is an important public health problem.^{1,2} It was suggested by World Health Organization (WHO) that adolescence is a transitional stage of mental and physical human development which occurs between 10-19 years of age involving psychological, biological and social changes.^{1,3} Globally, the transitional stage pregnancy is a common social and public health issue along with medical consequences. Adverse obstetric and neonatal outcomes is a problem of adolescent pregnancy being influenced by poor maternal nutrition, stress, biological immaturity, inadequate perinatal care and unintended pregnancy.^{1,4,5}

It is well-known that adolescent pregnancy has an increased risk of adverse reproductive outcome. As compared to women of 20 to 24 years, adolescents aged 15 or younger had higher risk of early neonatal death, maternal deaths, and anaemia.^{6,7} Maternal anemia has been associated with an increased risk of preterm delivery and is diagnosed before midpregnancy.^{6,8}

Hypertension which is specially related to a significant rise in perinatal and maternal morbidity but not perinatal mortality, especially severe hypertension.^{6,9} Friedman and Neff, without hypertension or proteinuria in women. A perinatal mortality rate of 129 per 1000 in 147 women with proteinuric preeclampsia was reported by Ferrazzani et al^{6,10}, and a rate of 127 per 1000 in 79 nulliparas with preeclampsia was reported by Lin et al^{6,11}.

A number of researches have been carried out concerning the frequency, complications, risk factors and pregnancy outcomes induced hypertension in different hospital of Pakistan but the focus of research is specifically on "frequency of pregnancy induced hypertension in teenage pregnancy" suggested that it is common in Pakistan, and very little literature available yet, so the purpose of this research was to observe, specially, the incidence of pregnancy induced hypertension in teenage pregnancy and to

identify the burden of this disease in tertiary care hospital of Punjab. The purpose of the research was to determine the occurrence of pregnancy induced hypertension in teenage pregnancy, presenting in a tertiary care hospital.

MATERIAL AND METHODS

This descriptive case series study was done at Department of Gynaecology & Obstetrics, Ziauddin Hospital, Karachi from January 2021 to June 2021. WHO Calculator was used to calculate sample size in Descriptive Case Series, taking 95% of confidence level, expected proportion of population (prevalence of teenage pregnancy induced Hypertension 12%) 199 and absolute precision required 5% .A total of 163 teenage pregnant women with age 10-19 year, age of gestation is from 20 weeks to onwards (Assessed on history and dating scan), singleton pregnancy on USG and women of any parity were included in this study. Mother with major illness such as diabetes (by blood glucose test), chronic hypertension and renal disease were excluded from the study.

On the basis of clinical examination, pregnancy included hypertension was diagnosed and via well maintained sphygmomanometer blood pressure was measured. The hypertension criteria was; if any patient had BP equal to or more than 140/90 on more than two separate occasions, then it was considered as hypertensive. Patients were followed at 24, 28, 34, 36, 38 weeks till delivery to look for development of PIH. Data was taken from each patient and recorded on pre-designed Performa regarding the women and gestational age, respectively

Statistical Package for Social Sciences (SPSS v. 17) was used to enter and analyze the data. For post stratification Chi-square test was applied and p-value ≤ 0.05 was considered as significant.

STUDY RESULTS

The mean maternal age was 16.53±1.94 years. The mean parity was 3.03±1.44 and mean gravidity was 2.80±1.44. The mean gestational age was 31.17±3.52 weeks, with range 16(21–37) weeks. Age of 49 women was ≤15 years and age of rest of the 114 women patients was >15 years. The parity of gravidity of 113 women was ≤3 and it was >3 in 50 women. The parity of 131 women was ≤3 and in the 32 women it was >3. The gestational age of 73 women was ≤30 weeks and gestational age of 90 women was >30 weeks. The pregnancy induced hypertension was found in 24(14.7%) women who were pregnant were involved in the research. Among women with PIH the mean age was 16.46±2.14 years and mean gestational age was 30.83±3.26 weeks. The results showed no statistically significant association of maternal age, gravidity, parity, and gestational age with pregnancy induced hypertension.

Table 1: Socio-demographics of different parameters

Parameter	Mean ±SD	95%CI (LB – UB)
Maternal Age	16.53±1.94	16.23 – 16.83
≤ 15 years	14.06±1.16	13.73 – 14.40
> 15 years	17.59±1.04	17.39 – 17.78
Parity	3.03±1.44	2.81 – 3.25
Gravidity	2.80±1.44	2.58 – 3.03
Gestational Age	31.17±3.52	30.62 – 31.71
≤ 30 weeks	28.01±2.11	27.52 – 28.51
> 30 weeks	33.72±2.06	33.29 – 34.16

Table 2: Frequency of blood pressure and pregnancy induced hypertension

Parameter	Frequency	Percentage
Blood Pressure	≤ 140/90 mmHg	84 51.5%
	> 140/90 mmHg	79 48.5%
Pregnancy Induced Hypertension	Yes	24 14.7%
	No	139 85.3%

Table 3: Stratification of pregnancy induced hypertension with mother age, gestational age and gravidity

Pregnancy Induced Hypertension	Pregnancy Induced Hypertension			P-value
	Yes	No	Total	
Age years	≤ 15	9	40	0.389**
	> 15	15	99	
Gravidity	≤ 3	17	96	0.862**
	> 3	7	43	
Gestational age weeks	≤ 30	11	62	0.911**
	> 30	13	77	

DISCUSSION

Practitioners caring for patients with pregnancy-induced hypertension and preeclampsia face a unique challenge. It was reported in a study¹² that 26% of primiparous patients with PIH are below the age of 20 years while only 15% of the controls were under the age of 20 years, signifying that causative feature to PIH was pregnant women of younger age. The gestational hypertension rate ranges from 2% to 4% in multiparous women and 6% to 17% in healthy nulliparous women.¹³

The incidence of PIH including most cases of gestational hypertension occur approximately half of cases at term (≥37 weeks' gestation). Frequently, Early-onset PIH is related to severe preeclampsia.¹⁴ At presentation the average age of gestation was 32.7 weeks which is similar to other research (i.e. 37 weeks). In vast majority of patients it was reported that gestational age of onset of preeclampsia is more than 20th week of pregnancy.¹⁵

In some studies, among teenage pregnancy, the incidence of PIH was higher.¹⁶ Vidyadhar B. Bangal²¹⁸ also discovered the similar outcome in his study. It was observed by Duckitt et al.¹⁷ that one of the risk factors for PIH is teenage pregnancy. Study by Sudarsan S. et al.¹⁸ concludes that 87.6% of eclamptic patients were below the age 25 years as eclampsia includes young primigravidas. In a study results revealed that, PIH was more common comprising 55% of the total cases of primigravidas in which majority were having severe PIH. Bhattacharya et al.¹⁹ also reported in his study that a risk factor for preeclampsia & eclampsia was primigravida.

In one of the studies, it was also observed that women with less socioeconomic status having poor access to antenatal care were high in PIH. Illiteracy could be the reason; since diagnosis of preeclampsia is often missed, they come to the hospital only if they

have serious issues & in majority of patients preeclampsia remains asymptomatic & remits spontaneously. Later these patients never come in contact with the health care system. Yucesoy G. et al.²⁰ literature shows consistency with this. In most cases of PIH, they were having obesity, Family h/o PIH and past h/o PIH in previous pregnancy. S Ganesh Kumar in his study reported the similar results wherein risk factors of PIH were obesity, family h/o PIH and past H/o PIH in previous pregnancy.²¹

Availability of easily accessible and affordable health care services and awareness regarding PIH is important as it will be helpful in decreasing the PIH related morbidity and mortality. Though it is a hospital based research; and the results to the general population at large might not be applicable. Thus, the study is further need to elaborated by using larger population to establish better statistical correlation which includes sociodemographic parameters and more subjects to study.²²

A single-center experience and non-randomized study design are the main limitations of the present study. This study was carried out with small sample size, which is one of the limitations and in urban environment; consequently the results to larger populations might not be generalizable.

CONCLUSION

The results of this study conclude that significant risk factor for higher occurrence of PIH is younger maternal age. In this country part, girls get married and conceive at an early age, especially in rural areas and consequently the pregnancy occurrence and related complication PIH in early reproductive age group is higher.

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