

RISK FACTORS ASSOCIATED WITH THE PREGNANCY INDUCED HYPERTENSION IN TEENAGE GIRLS AT PMC HOSPITAL NAWABSHAH.

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Abstract:

Objectives: To determine the risk factors of Pregnancy Induced Hypertension in Teenage girls at PUMHSHospital Nawabshah. **Method:** This cross-sectional study was carried out on 200 pregnant women from Genecology & Obstetrics Department PMC Hospital Nawabshah from July to December 2018. The sampling technique was convenience sampling. Risk Factors associated with the pregnancy induced hypertension in teenage girls like gravida, abortion, still birth, family history of hypertension, degree of Protein urea haemoglobin, oedema and body mass index (BMI). All the information was documented in well-structured questionnaire. The data was entered and analysed statistically by SPSS Version 24.0. **Results:** The study results show that 23.5% of Teenage mothers were suffering from pregnancy induced hypertension. 47% of pregnant women were in Gravida 1. Majority 80.3% of marriages were in the age of 13 to 16 years. One abortion history was in 23.5% and history of still birth was positive in only 8%. 49% women have family history of Hypertension. Protein urea test was positive in 35% women. Protein ureas was 1+ in 91% and 89% were anemic associated with oedema grade 1 was 77%. 15% women were under weight, 12.5% were obese or over weight. **Conclusion:** Study results showed that the teenage girls are more prone for Pregnancy induced hypertension. The risk factors associated with hypertension in pregnancy were early reproductive age group, family history of hypertension, prime parity, and short birth intervals. Health education and public awareness on risk factors of the pregnancy induced hypertension by mass media should be promoted, which will not only save the lives of a babies as well as mothers which is ultimate objective and target of Sustainable development Goals.

Key Words: Pregnancy, Hypertension, Risk Factors, Teenage, Nawabshah.

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INTRODUCTION

Pregnancy induced hypertension is Systolic blood pressure 140 mmHg or above and diastolic blood pressure 90 mmHg or above in the 24th week of gestation.¹ Increase blood pressure in Pregnancy also called Pre-eclampsia, Toxemia, or Toxemia of pregnancy is a complicating problem of pregnancy and can be point out by hypertension, oedema due to fluid retention, and protein urea.² The high blood pressure in the pregnancy is the most frequent public health problem worldwide, about 6 to 8% of all pregnancies are complicated by hypertension. 10-15% maternal deaths in developing world and 18% in developed world are due to increase in blood pressure during the pregnancy.³

The teen age pregnancy is considered when a woman becomes pregnant before completing 18

years of age. Amongst 18 to 19 year teenagers, in United States, birth rate declined from 60 per 1000 in 1991 to 41 per 1000 in 2004. The birth rate for Asian teenagers, 15 to 19 years old, dropped from 27 per 1000 women in 1991 to 18 per 1000 women in 2002. Still teenage pregnancy rates remain high. Every year according to the WHO 20 – 24 million adolescents resort to abortion.^{4, 5} It is estimated by the WHO that the risk of death in teen age girls 13-19 years is two times greater than the ages of 20 – 24 years.⁶ The rate of the maternal mortality is 5 times greater in between 13 and 14 as compared to the etiology of Pregnancy induced hypertension is still not clear; however, the number of theories relating to dietary factor, immune system, the genetics and the maternal vascular system has been together considered in pregnant mothers. Among the pregnant mothers generally there are many risk factors, proven by many studies. Few conditions

which can enhance the risk of PIH include the pre-existing HTN, diseases of kidney, diabetes, HTN with a previous pregnancy, Age of mother less than 20 or more than 40, or triplet pregnancy, nulli-parity, and pre-pregnancy obesity.⁷

In some studies, obesity before pregnancy is the high risk of the pregnancy in Adolescent pregnant girls analogous with the stage when the physical, emotional and the psychological changes ongoing from childhood to adult. Adolescent pregnant girls analogous with the stage when the physical, emotional and the psychological changes ongoing from childhood to adulthood with social development.⁸ Study conducted in Bangladesh where the prevalence of the social conditions are more or less same as in Pakistan. The teenage pregnant girls above 50% are suffering from high blood pressure, fits, obstructed labour, heavy bleeding after delivery and the other complications of the delivery.⁹ If the PIH is not treated early it can cause seizures and even maternal morbidity and mortality. Due to these risk factors it is necessary to deliver the patient to prevent these complications, before completion of 37 weeks' gestation. The symptoms of HTN vary in each pregnant women which may include protein urea, oedema (swelling), gets weight suddenly, changes in vision such as blurred or double vision, nausea, vomiting, pain in the abdomen of the right side or the pain in the stomach, or passing urine in decreased amount, changes the functions of the liver and the kidney function tests. Diagnosis is based on the hypertension levels, and other symptoms which can help to establish PIH. Tests for pregnancy-induced hypertension may include the monitoring

the blood pressure, assessment of oedema, frequent weight measurement, examination of eyes to check for retinal changes, liver functioning test, creatinine clearance test, bleeding and clotting time measurement.^{2, 10, 11} The knowledge about the important risk factors and prevalence of the Pregnancy induced hypertension in teenage pregnancy can be helpful for differentiating the patients who are at high risk to develop the disorders of high blood in the population of our country. There is no ideal age for first pregnancy and no evidence to support the view that a particular age is safe for 1st pregnancy, but mother's age from 20 to 29 years for the child bearing is less hazardous.¹²⁻¹⁵

The purpose of this study is to observe the risk factors of (PIH) in teenage girls to recognize the burden of this diseases; as effective measures should be taken to decrease in morbidity and mortality in both teen age pregnant mother and their foetus.

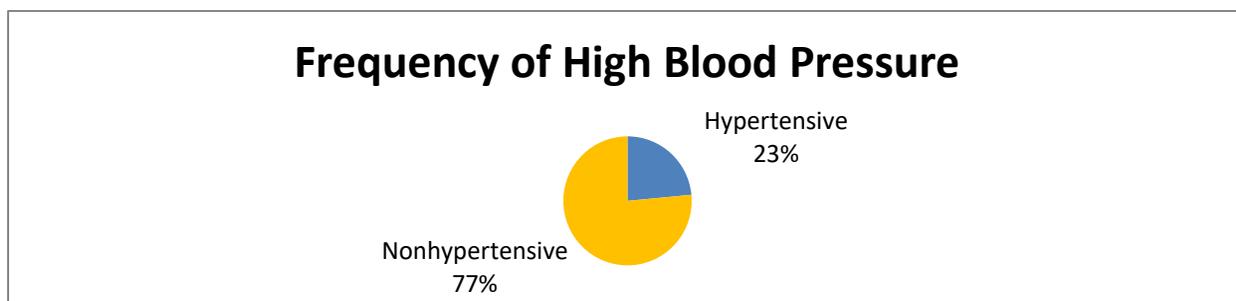
MATERIAL & METHODS:

This cross-sectional study was carried out on 200 pregnant women from Genecology & Obstetrics Department PMC Hospital Nawabshah. The sampling technique was convenience sampling. Risk Factors associated with the pregnancy induced hypertension in teenage girls like gravida, abortion, still birth, family history of hypertension, degree of Protein urea haemoglobin, oedema and body mass index (BMI). All the information was documented in well-structured questionnaire. The data was entered and analysed statistically by SPSS Version 24.0.

RESULTS:

A total of two hundred 200 pregnant women in third trimester were included and examined for risk factors of pregnancy induced hypertension in Gynecology and Obstetrics department of PMCH Nawabshah.

Graph No: 1. Frequency of pregnancy induced hypertension in teenage girls.



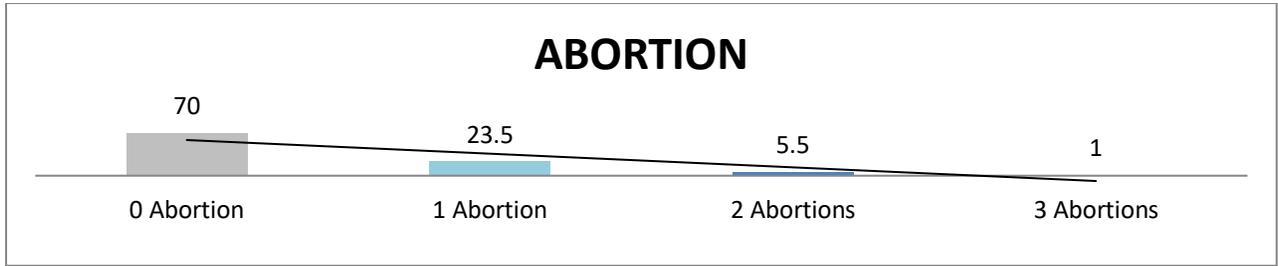
Frequency of high blood pressure is 23%, while 77% were normotensive.

Table No: 1. GRAVIDA:

Gravida	Frequency	Percentage %
G1	93	47%
G2	57	29%
G3	37	19%
G4	13	6%
Total	200	100

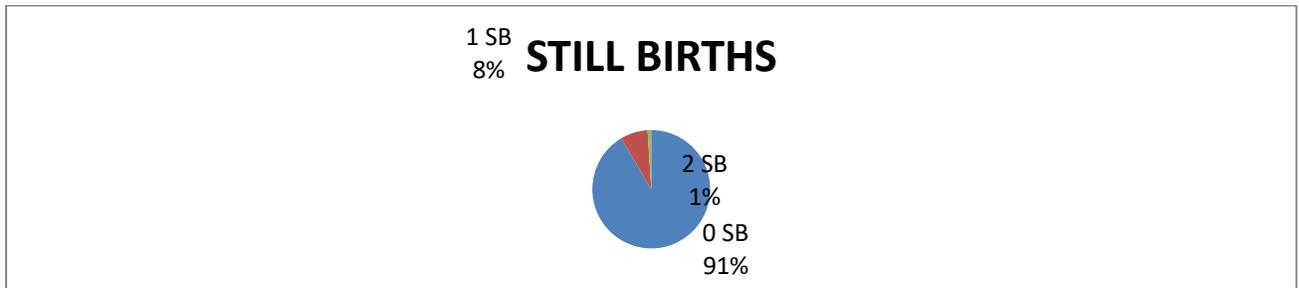
76% of pregnant women were in Gravida 1 and Gravida 2. While only 6% were in Gravida 4.

Graph No: 2. ABORTION



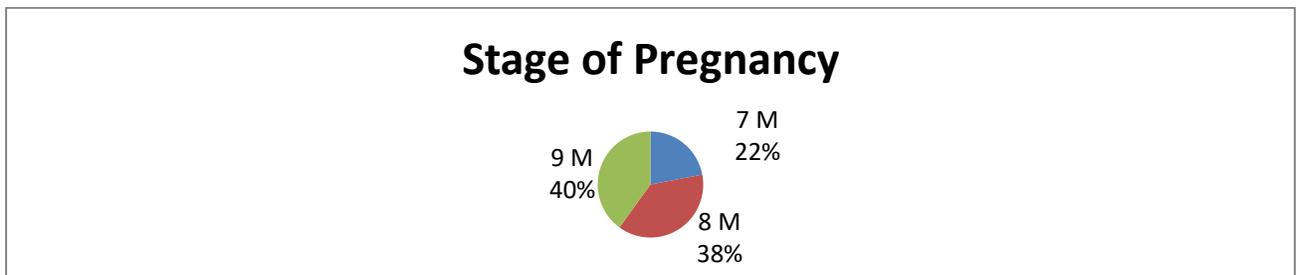
One abortion history was in 23.5%, while history of three abortions was only in 1%.

Graph No: 3. STILL BIRTHS:



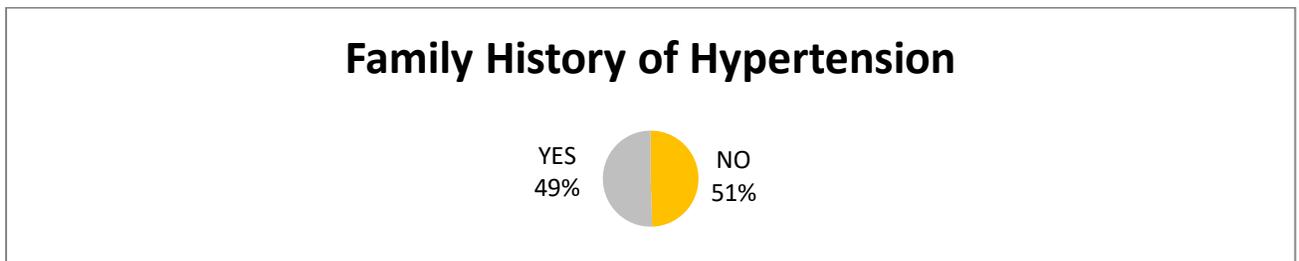
The history of still birth was positive in only 8%.

Graph No: 4. STAGE OF PREGNANCY:



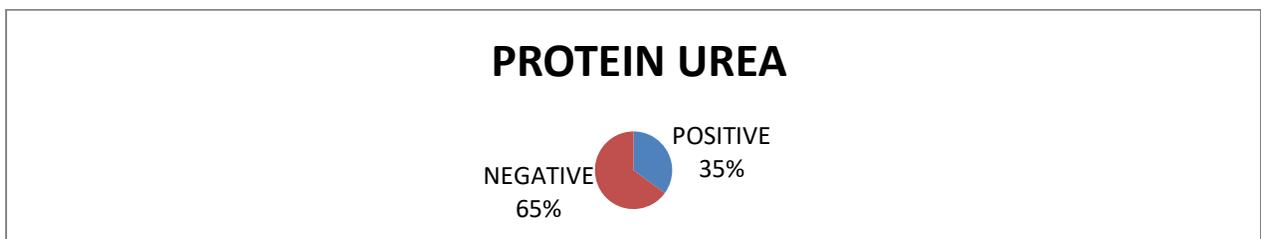
78% women were belonging to 8th and 9th month of pregnancy, while 22% in 7th month.

Graph No: 5. FAMILY HISTORY OF HYPERTENSION



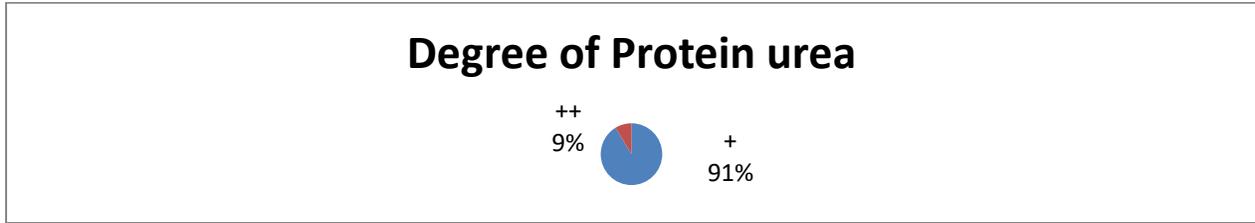
From all 49% women have family history of Hypertension.

Graph No: 6. FAMILY HISTORY OF HYPERTENSION



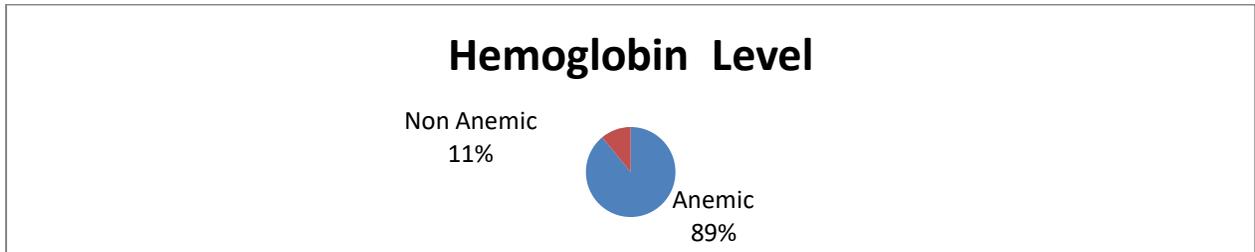
Protein urea test is positive 35% women.

Graph No: 7. DEGREE OF PROTEIN UREA



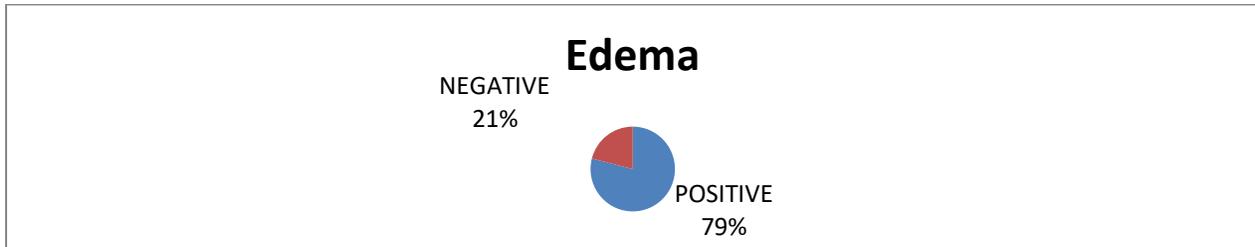
Protein urea was 1+ in 91% while 2+ was in 9% women.

Graph No: 7. HEMOGLOBIN LEVEL.



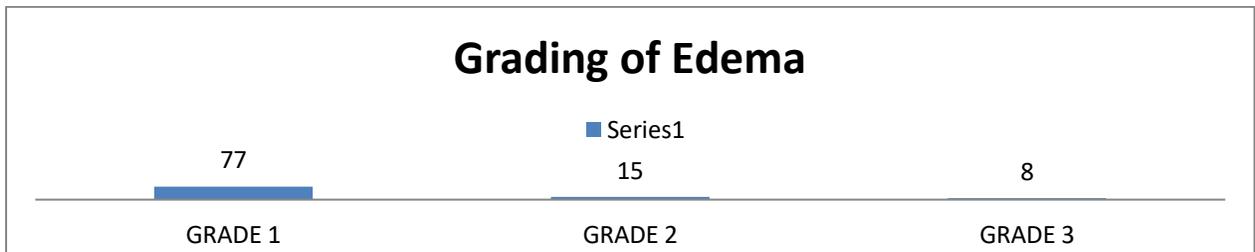
89% were anemic while 11% were non anemic.

Graph No: 8. EDEMA



79% women, edema was positive, while in 21% were negative.

Graph No: 8. GRADING OF EDEMA:



Edema grade 1 was 77%, while grade 3 was only 8%.

Graph No: 9. BODY MASS INDEX



30 women (15%) were under weight, 145 women (72.5%) were normal weight and 25 (12.5%) women were belonging to obese or over weight.

DISCUSSION

The present study was designed to determine the risk factors of hypertension in teenage pregnancy in Gynecology and Obstetrics Departments of Peoples University of Medical and Health sciences Nawabshah. In this study, 200 pregnant women enrolled belonging to the age group of 13-19 years. The study participants were seen for

Pregnancy Induced Hypertension and its associated risk factors in teenage pregnancy.

The study results revealed that the hypertension in teenage pregnancy is 23.5%. The findings about frequency of PIH in present study are similarly reported by the study conducted at Sheikh Zaid Women Hospital Chandka Medical College Larkana at the same age group 13 to 19 years shows frequency of 21.47%.¹⁶

The study results regarding family history, 83% frequency of hypertension in teenage have positive family history than with negative family history (17.0%) showing significant association. The study conducted in Baghdad also shows the Family history of hypertension was higher among pregnant teenager with hypertension. This result is also in accordance with the finding of Caroline, 2011 in Southern Brazil.¹⁷ She found that significant association between hypertension in pregnancy and family history of hypertension ($p = 0.001$). This result may be explained by genetic susceptibility.^{18,19}

This study results also reveal that total 15% women were under weight and 72.5% were normal weight and 12.5% women were overweight or obese. It has significant association between Pregnancy Induced Hypertension in Teenage girls & Body Mass Index. As the weight of teen age increases, it increases the chances of hypertension. The relationship between obesity and hypertension has been clearly defined in multiple studies across different ethnic and gender groups. The study conducted by Corinna K and et al²⁰ on optimal body mass index (BMI) thresholds as a marker for high-risk youth to predict hypertension prevalence. In a cross-sectional study, youth aged enrolled. They were classified according to their BMI and hypertension status. In moderately and extremely obese youth, the prevalence of hypertension was 3.8% and 9.2%, respectively, compared with 0.9% in normal weight youth. Another study conducted by Bodnar²¹, Lisa M on Pregnancy Body Mass Index and the Occurrence of Severe Hypertensive Disorders of Pregnancy. This study also shows a monotonic dose-response relation between pregnancy BMI and hypertension. Conclusion of this study was the frequency of mild and severe hypertensive disorder of pregnancy increases with increase in BMI.

Pierre, et al²², 2011 in Cameroon showing similar results with this study finding with different factors associated to hypertensive disorder in pregnancy.²² They included early teenage, primi gravida and family history of hypertension. At multivariate analysis, the risk of having hypertension during pregnancy remained three times greater for primi gravida having family history of hypertension.²

Results of the study also show that the risk of pregnancy induced hypertension significantly increased in prime Gravida (25.8%) than multigravida, this result agree with study of Assis,¹⁸ 2008, which identified prime parity as a risk factor for pregnancy induced hypertension. Pierre²², et al, 2011 in Cameroon, they found that null parity was associated with a nearly 2 fold the risk of developing hypertension disorders in pregnancy, because, an indication of a genetic cause is the observation that women are at greater risk of preeclampsia in their first gravidity if they have a sister or mother who has experienced preeclampsia. There is no any significant association between previous abortions and pregnancy induced hypertension. The results agree with Pierre, et al, 2011 in Cameroon, they

found no association between histories of abortions with induced hypertension.²⁰

The results also reveal a significant correlation between Pregnancy Induced Hypertension in Teenage pregnancy, oedema and positive protein urea analyzed by Pearson's Correlation Method. This results states that the degree of protein urea and Oedema are strongly associated with pregnancy induced hypertension in teenage girls. This result is showing similarity with the study conducted by Chesley LC.²³ According to which edema of face and hands may be more common in pre-eclampsia than in normal women. The triad of signs -- hypertension, protein urea, and edema is generally accepted as characteristic, though far from specific for pre-eclampsia. Proteinurea is one of the cardinal features of preeclampsia, a common and potentially severe complication of pregnancy, which increases adverse maternal and neonatal outcomes.²⁴

CONCLUSION:

Study results showed that the teenage girls are more prone for Pregnancy induced hypertension which is 23.5%. The risk factors associated with hypertension in pregnancy were early reproductive age group from 13 to 19 years were (83%), family history of hypertension (49%), prime parity (47%), and short birth intervals (82%).

Health education and public awareness on risk factors of the pregnancy induced hypertension by mass media should be promoted, which will not only save the lives of a babies as well as mothers which is ultimate objective and target of Sustainable development Goals.

ETHICS APPROVAL: The ERC gave ethical review approval

CONSENT TO PARTICIPATE: written and verbal consent was taken from subjects and next of kin

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CONFLICT OF INTEREST: No competing interest declared.

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