

## Original Article

### Survey on Different Types of Hypertensive Disorders and its Complications among Pregnant Women

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#### ABSTRACT:

**Background:** To determine the frequency and distribution of different types of hypertensive disorders in pregnancy. **Materials and Methods:** The retrospective descriptive survey design was adopted for this study in order to describe and identify pregnant women about to develop hypertension during the course of her pregnancy. The study comprised of 51 pregnant women aged 20-35 years. Data was gathered by structured questionnaires on medical history to ascertain their age, area, alteration in blood pressure levels, symptoms and risk factors contributing to high blood pressure of patient. **Results:** A total of 50 pregnant women aged between 20-35 years were assessed with pregnancies between 1 and 9 months of gestation. Respondents were mostly in the age group of 20-25 and were non-employed. More than half of the women belong to rural areas (27), who attended antenatal clinic. Mostly women from rural areas were facing with health problems as compared to urban areas due to lack of various facilities and poor health care, 13 (25.5%) of women were having gestational hypertension and 6(11.8%) chronic hypertension. High salt diet was the major cause of high BP among 13 pregnant women while rest agreed that they take low salt diet. The frequency of hypertension was significantly high in women with family history of hypertension. Headache, dizziness, nausea were the most common problem, while epigastric pain was the secondary cause among pregnant women who attended antenatal clinic. **Conclusion:** The study concluded that the incidence of hypertension disorders in pregnancy was high. Chronic and gestational hypertension was the most common hypertension disorders among these patients. High salt diet and family history were the main causing factors of hypertension among pregnant women.

**Key words:** Hypertension, Pregnancy, Gestational Hypertension, Risk factors, Prevalence

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## INTRODUCTION

Pregnancy is a physiological phenomenon for most women. However, some develop problems during its evolution, putting both the mother and conceptus health at stake. Hypertension is the most common problems associated with pregnancy that may be followed by eclampsia, acute renal failure, maternal death, premature delivery, intrauterine growth restriction, increased risk of adverse fetal, neonatal and maternal outcomes, perinatal death, antepartum haemorrhage, and postpartum haemorrhage. It accounts for 12-20% of total maternal deaths in the world. Hypertension affects approximately 1 billion people worldwide and 340 millions of these are from economically developing countries.<sup>1</sup> Risk factors for hypertension include age, geographic location (urban/rural), obesity, inactive lifestyle and heavy alcohol consumption.<sup>2</sup> The incidence of hypertension increases with advancing age to point where more than half of people belong to 60-69 years of

age group and approximately three quarter of those 70 years of age and older are affected. The age-related rise in systemic blood pressure (SBP) is primarily responsible for an increase in prevalence of hypertension with increasing age.<sup>3</sup> The occurrence of hypertension in pregnancy is commonly screened and these disorders are mainly classified into 4 categories: chronic hypertension, preeclampsia-eclampsia, preeclampsia superimposed on chronic hypertension and gestational hypertension. Hypertension that is diagnosed for the first time during pregnancy and that does not resolve after pregnancy is also classified as chronic hypertension. It is defined by Brooks (2001) as Blood Pressure exceeding 140/90 mm Hg before pregnancy or before 20 weeks gestation. Preeclampsia is diagnosed when a woman who is normotensive before 20 weeks of gestation presents with systolic blood pressure greater than 140 mm Hg and DBP greater than 90 mm Hg on second successive measurements 4-6 hours apart.

Preeclampsia will develop in 20-25% of those with chronic hypertension during pregnancy. Eclampsia is the occurrence of seizures in a woman with pre-eclampsia. It includes pre-eclampsia with presence of convulsions not attributable to other neurological disease. Gestational hypertension is the most common cause of hypertension in pregnant women. It is characterised as mild to moderate elevation of BP after mid-gestation but without abnormal proteinuria.<sup>4</sup> The cause of Gestational hypertension is unclear, this entity appears to identify woman distant to develop essential hypertension later in life. The blood pressure changes are usually accompanied by proteinuria of 2.0 gm or more in 24 hours, changes in creatinine, liver enzymes and symptoms of blurry vision, headache and epigastric pain. Pregnant woman with hypertension are more likely to develop placental abruption, disseminated intravascular coagulation, cerebral haemorrhage, hepatic failure and acute renal failure. The incidence of hypertension is well known to vary from place to place, whereby; higher figures can be obtained in urban relative to rural settlements<sup>5</sup>. Reasons offered for rural-urban differences in hypertension include change in diet with higher salt and calorie in-take and reduce potassium in-take.<sup>6</sup> Other factors include sedentary lifestyle and more psychosocial stress which are worse in urban dwellers. Treating the hypertension does not alter the progression of disease. However, it has been shown that early treatment decreases not only the frequency of hypertensive crisis but also the rate of neo-native complications.

**MATERIALS & METHODS**

The retrospective descriptive survey design was adopted for this study in order to describe and identify pregnant women about to develop hypertension during the course of her pregnancy. The study comprised of 51 pregnant women aged 20-35 years. It was conducted at Mata Kaushalya hospital Patiala, Punjab. After having permission from hospital authority, data was gathered by structured questionnaires on medical history to ascertain their age, area, alteration in blood pressure levels, symptoms and risk factors contributing to high blood pressure of patient. No pregnant women were excluded from the research rather all that attended the

clinic were screened for hypertension. Blood pressure was measured by investigator itself. Their blood pressure was measured with the use of sphygmomanometer.

**STATISTICAL ANALYSIS:**

Data was analyzed using SPSS version 16.0. Descriptive statistics were obtained and frequency distribution, means, standard deviation were calculated. Student’s T-test and ANOVA test were used for comparison in mean scores. The p-value of 0.05 or less was considered as statistically significant.

**RESULTS**

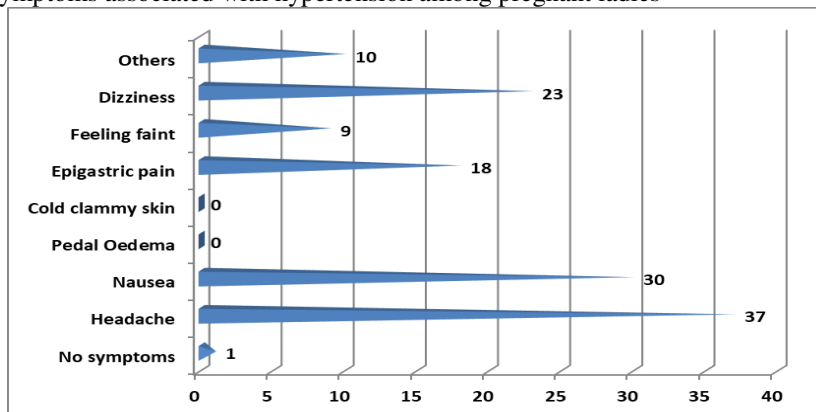
A total of 50 pregnant women aged between 20-35 years were assessed with pregnancies between 1 to 9 months of gestation. Respondents were mostly in the age group of 20-25 and were non-employed (**Table-1**).

(**Table 2**) showed that more than half of the women belong to rural areas (27), who attended antenatal clinic. Mostly women from rural areas were facing with health problems as compared to urban areas due to lack of various facilities and poor health care. Out of total 51 pregnant women, 32 were not hypertensive and 19 were found to be hypertensive (**Table-3**). Furthermore, 13(25.5%) of women were having gestational hypertension, 6(11.8%) chronic hypertension.

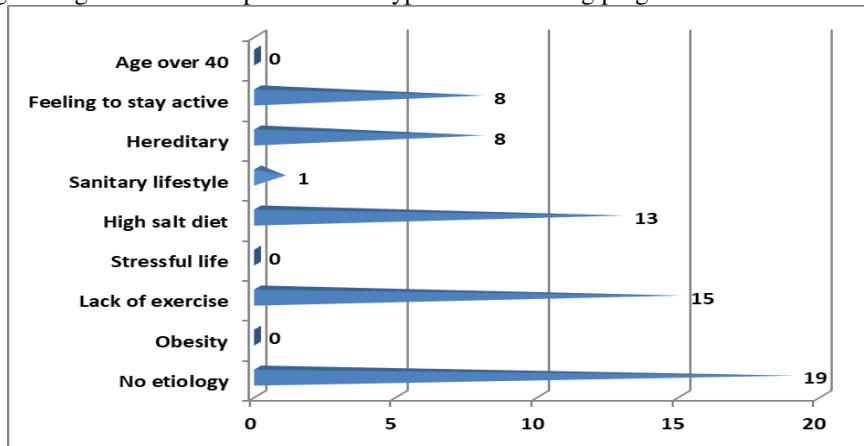
(**Table 4**) showed the stages of hypertension as 13 of them were having moderate hypertension while 6 of them had mild and only one among them had severe hypertension. Table 5 showed that maximum and minimum systolic and diastolic blood pressure and their mean values.

Around 19 of women are unaware of high blood pressure (BP) while 15 women said lack of exercise as the major cause to raise BP (**Graph 1**). High salt diet was the major cause of high BP among 13 pregnant women while rest agreed that they take low salt diet. The frequency of hypertension was significantly high in women with family history of hypertension. Headache, dizziness, nausea were also the most common problem among pregnant women, while epigastric pain was the secondary cause among pregnant women who attended antenatal clinic. Moreover 10% of them showed other problems also which include backache, vomiting, lower abdominal pain, burning sensation (**Graph 2**).

**Graph 1:** Showing symptoms associated with hypertension among pregnant ladies



**Graph 2:** Showing etiological factors responsible for hypertension among pregnant ladies



**Table 1:** Showing the relationship of age with hypertension among pregnant ladies

AGE	No	Mean	SD	F value	Sig.
20-25 years	29	0.48	0.509	0.087	NS
26-30 years	17	0.29	0.47	0.041	NS
30-35 years	5	0	0	0.03	S
<b>Total</b>	51	0.37	0.488		

**Table 2:** Showing different types of hypertension among pregnant ladies

Types	Frequency	Percent
No hypertension	32	62.7
Chronic Hypertension	6	11.8
Gestational Hypertension	13	25.5
<b>Total</b>	51	100

**Table 3:** Showing number of pregnant ladies having hypertension in a particular area

Area	N	Mean	SD	F value	Sig.
Urban	24	.42	.504		
Rural	27	.33	.480	1.304	NS

**Table 4:** Showing the stages of hypertension (mild, moderate and severe) in pregnant ladies.

Stages	Frequency	Percent
0	32	60.9
Mild	6	11.8
Moderate	12	25.4
Severe	1	2
<b>Total</b>	51	100

**Table 5:** Showing the maximum and minimum systolic and diastolic pressure in pregnant ladies

Blood Pressure	No	Minimum	Maximum	Mean	SD
Systolic	51	90	150	118.9	14.42
Diastolic	51	60	110	80.22	13.979

**DISCUSSION**

Maternal and foetal complication increases with the severity of hypertension but appropriate maternal and prenatal care can prevent dangerous outcomes. Hypertensive disorders of pregnancy are considered to be a major worldwide health problem running an increased risk of Perinatal and Maternal mortality.<sup>7</sup> In a population based study pregnancy induced hypertension disorders were examined in 19 out of 51 pregnant women.

From 2009-2012 the incidence rate of hypertension among pregnant women was increased from 11-34%. Recently an alarming incident rate of hypertension came out to be 37%. In a similar study the prevalence of hypertension has shown an alarming rate of increase 9.8% to over 40% in Port Harcourt city.<sup>8</sup> The sharp increase can be attributed to lack of exercise, chronic job strain and other stressful activity.<sup>9</sup> In this study age and development of pregnancy induced hypertension were cross tabulated to determine the

relationship between age and development of pregnancy induced hypertension. In recent analysis it was seen the youngest group 20-24 years has highest incident of 56% as compared to 30-35 group i.e 9.8%. In 2012 the incident of hypertension increased with age, the oldest group 38-47 contributed 9.4% respectively. While the youngest group 18-24 has lowest incident of 2.7. This increase incident rate among young age group is due to in proper unhealthy diet intake.

In current findings, more than half of women belong to rural area who visited this clinic. The incident of hypertension was higher for women coming rural area than from urban area. Women in rural area are facing this problem due to lack of facilities in that area, in proper health care, sedentary life style. Earlier in 2012 it was thought that urban society has higher rate of hypertension due to stressful, the type of work and diet. This could influence the risk of having hypertension. Changes due to location are probably the result of acculturations which can be expected to proceed at different rates in different communities.<sup>10</sup>

In multicentre study, approximately 30% of hypertensive disorders of pregnancy were due to chronic hypertension and 70% of the cases were diagnosed as Gestational hypertension/preeclampsia. On the whole 11.8% of mothers had chronic hypertension, 25.5% had the gestational hypertension.<sup>11</sup> While very rare were effected with eclampsia, Pre-eclampsia super imposed on chronic hypertension. Mothers affected with hypertension disordered were more exposed to maternal mortality and morbidity as compared to those who were not affected. In 2012, 9.8% had pregnancy induced hypertension out of which 67% of these had chronic hypertension, 4.2% were affected with pre-eclampsia, 0.3% had pre-eclampsia super imposed on chronic hypertension, 4.3% had the gestational hypertension.<sup>12</sup> Most of the cases that had chronic hypertension before pregnancy had experienced super imposed pre-eclampsia.

According to the stages of hypertension, mostly women had moderate type of hypertension i.e. 13 (25.5%) out of 51 women surveyed and rarely severe condition seen among them. This was due to high salt diet, lack of exercise, in proper health care facilities.

## CONCLUSION

The current study concluded that the incidence of hypertension disorders in pregnancy was high. Chronic hypertension and Gestational hypertension were the most

common hypertension disorders among these patients. High salt diet and family history were the main causing factors of hypertension among pregnant women.

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