

A Clinic-Epidemiological Assessment of Hypertension in Pregnancy: An Observational Study

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Abstract

Aim: The aim of the present study was to assess the clinical profile of hypertension in pregnancy.

Methods: The present study was conducted in the Department of Obstetrics and Gynaecology, Sri Krishna Medical college & Hospital, Muzaffarpur, Bihar, India for 12 months and 100 patients were included in the study.

Results: 57 (57%) of patients are between the age group of 20-25 years. 21 (21%) patients are between 26-30 years. So, 78 (78%) of patients are between 20-30 years whereas, 17 (17%) patients are above 30 years. 52% belonged to primi parity. 65% belonged to lower socioeconomic class and 71% belonged to rural area. 69% women were at full term and 76% had <3 visits gestational age.

Conclusion: Hypertension was common in younger age group between 20-25 years of age and belonging to lower socioeconomic class and to rural area. Incidence of hypertension was more in the women who had less antenatal follow up, 76% of cases had less than 3 antenatal visits. This also shows that regular visit to ANC, will held early screening of hypertension and maternal mortality in young pregnant hypertensive patients.

Keywords: hypertension, pregnancy, morbidity, mortality, treatment

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Introduction

Hypertension in pregnancy is a major challenge in antenatal practice due to its impact on obstetric and fetal outcomes. Hypertension plays a significant role in up to 15% of complications over the course of pregnancy and the postpartum period [1] Hypertensive disorders of pregnancy encompass preexisting (or chronic) hypertension, gestational hypertension, preeclampsia, and eclampsia; accounting for an estimated prevalence of 5% to 10% in women belonging to the reproductive age group. [2-3] These are a significant contributor to maternal and prenatal morbidity and mortality and account for 30,000 maternal deaths annually at the global level and 10% to 15% of maternal deaths in low- and middle-income countries. [4-5]

A multicenter study performed in four developing countries (India, Nigeria, Pakistan, and Mozambique) found that one out of every ten pregnant women had hypertension. [6] Studies have found pregnancy-induced hypertension to be a significant independent risk factor for developing gestational diabetes mellitus. [7] The prevalence of

hypertension in reproductive-aged women is estimated to be 7.7%. [8] Hypertensive disorders of pregnancy, an umbrella term that includes preexisting and gestational hypertension, preeclampsia, and eclampsia, complicate up to 10% of pregnancies and represent a significant cause of maternal and prenatal morbidity and mortality. [9] In Japan, “pregnancy toxemia”, with three main features, “hypertension,” “proteinuria,” and “edema”, was defined and classified in 1982 [10] and then again in 1984 [11]

This term was widely used until 2005, when it was changed to “pregnancy-induced hypertension.” In 2018, the classification was standardized with those of other countries, and “hypertensive disorders of pregnancy (HDP)” were considered to be present if hypertension existed during pregnancy and up to 12 weeks after delivery [12] High blood pressure before pregnancy (chronic hypertension) is now included in the definition of HDP. Among the various hypotheses explaining the etiology of HDP, the two-stage theory and angiogenesis imbalance are the

most plausible. The two-stage theory of the etiology of HDP may have led to the novel possibility of treatment/prevention for HDP. Furthermore, assessing the circulating levels of angiogenic factors may have diverse clinical roles in preventing adverse outcomes in HDP [13]

The aim of the present study was to assess the clinical profile of hypertension in pregnancy.

Materials and Methods

The present study was conducted in the Department of Obstetrics and Gynaecology, Sri Krishna Medical college & Hospital, Muzaffarpur, Bihar, India for 12 months and 100 patients were included in the study.

Inclusion Criteria

1. All the patient who come to outdoor antenatal clinics, and pregnant patient visiting to medical OPD are included in this study
2. The pregnant patient > 20 weeks & BP >140mmHg, minimum for 2 frequent time or visit.
3. Patient with past history of gestational hypertension, pre-eclampsia & eclampsia.
4. Pregnant patient who are already on antihypertensive.
5. Patient with hypertension & preexisting medical illness.

Exclusion Criteria

1. Gestational age <20weeks
2. Pregnancy at the age >42 years

Results

Table 1: Age and parity distribution in hypertension in pregnancy

Age Groups	No of Case
<20	5 (5%)
20-25	57 (57%)
26-30	21 (21%)
>30	17 (17%)
Total	100
Parity	
Primi	52 (52%)
Second	24 (24%)
Multi	24 (24%)

57 (57%) of patients are between the age group of 20+ 25 years. 21 (21%) patients are between 26 & 30 years. So, 78 (78%) of patients are between 20-30 years whereas, 17 (17%) patients are above 30 years. This indicates the incidence of hypertension

remarkably decrease above the age of 30 years. Late Pregnancy above 30 years, do not usually are having much risk of developing hypertension. 52% belonged to primi parity.

Table 2: Socioeconomic class in relation to HTN in pregnancy and residence

Socioeconomic Class	No of Case
L- Lower	65 (65%)
M-Middle	28 (28%)
U- Upper	7 (7%)
Total	100
Residence	
R- Rural	71 (71%)
U- Urban	29 (29%)

65% belonged to lower socioeconomic class and 71% belonged to rural area.

Table 3: Antenatal visits and gestational age in relation to hypertension in pregnancy

Gestational Age (In weeks)	No of Case
Pre-term (<37 weeks)	30 (30%)
Term (37-42 weeks)	69 (69%)
Post Term (>42 weeks)	1 (01%)
Gestational age	
<3 visits	76 (76%)
>3 Visits	24 (24%)

69% women were at full term and 76% had <3 visits gestational age.

Discussion

Hypertensive disorders of pregnancy & their complications rank as one of the major cause of maternal morbidity in the world. [14] It occurs in the second half of the pregnancy (after 20 wks) & accounts for approx a quarter of all antenatal admissions, worldwide 10% of all pregnancies are complicated by Hypertension, with pre-eclampsia & eclampsia being major cause of maternal morbidity & mortality Hypertension is defined as BP >140/90mmHg, taken after a period of rest on two occasions OR>160/110mmHg on one occasion in previously normotensive women. [15] The incidence of Hypertension in pregnancy varies widely from 5-15 %.In India the incidence of Hypertension is reported to be 8-10% of the pregnancies. [16]

Incidence of Hypertension varying according to age, race, & BMI. [17-19] The vast majority of Hypertension occurs in low & middle income countries. It is about 10% in primigravida & 5% in multigravida. There is national guidance on the care of women with severe pre-eclampsia or eclampsia and on screening for Hypertensive disorder during pregnancy. [20-24] 57 (57%) of patients are between the age group of 20+ 25 years. 21 (21%) patients are between 26 & 30 years. So, 78 (78%) of patients are between 20-30 years whereas, 17 (17%) patients are above 30 years. This indicates the incidence of hypertension remarkably decrease above the age of 30 years. Late Pregnancy above 30 years, do not usually are having much risk of developing hypertension. The odds of hypertension were higher among women more than 28 years of age although this was not statistically significant. Hypertension in pregnancy is known to be associated with advancing maternal age. This could be attributed to high levels of oxidative stress and low levels of nitric oxide that are associated with aging, which exerts an adverse influence on the relaxation of the endothelium. [25] Illiteracy has been reported to be an important risk factor for hypertension in pregnancy due to its relationship with early marriage and care-seeking behavior; however, no such observation was seen in the present study. We found that women who were employed outside the house were at a higher risk for hypertension. Other studies have also reported a similar association, [26-28] whereas some studies report that the risk is higher among homemakers. [29] Further research would be required to explain these differences as it may be determined by the nature and duration of work, whether done at home or outside.

52% belonged to primi parity. 65% belonged to lower socioeconomic class and 71% belonged to rural area. 69% women were at full term and 76%

had <3 visits gestational age. The risk of hypertension appeared to be more than twice as higher among obese pregnant women than nonobese and was significantly associated even after adjusting for confounders. This is synonymous with results from other studies from different countries. [30-32] The pathophysiologic mechanism, which accounts for the relationship between obesity and hypertension is the state of hyperinsulinemia induced by high body mass index, which causes endothelial dysfunction. [33] The risk of pre-eclampsia is also stated to be increased due to high levels of triglyceride and free fatty acids that are associated with obesity. [34]

Conclusion

Hypertension was common in younger age group between 20-25 years of age and belonging to lower socioeconomic class and to rural area. Incidence of hypertension was more in the women who had less antenatal follow up, 76% of cases had less than 3 antenatal visits. This also shows that regular visit to ANC, will held early screening of hypertension and maternal mortality in young pregnant hypertensive patients.

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