

# A study of prevalence and various factors associated with pregnancy induced hypertension among patients attending tertiary health centre

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## Abstract

**Background:** Pregnancy-induced hypertension (PIH) is a major cause of maternal, foetal and new born morbidity and mortality. The control of PIH appears difficult to achieve. Part of the reason for poor control of hypertension in these women might be limited PIH self-care knowledge. **Aim and Objectives:** To study the prevalence and various factors associated with pregnancy induced hypertension among patients attending tertiary health centre. **Material and Methods:** It's cross sectional study conducted at tertiary health centre during a period of 3 months from Dec 2017 to Feb 2018 involving a total of 250 pregnant women visiting the health care centre. Informed consent from the participants was taken. **Results:** The mean age of the respondent's was  $27.3 \pm 6.11$  years. More than half of the respondents i.e. 52% represented 25-31 years age group followed by 18-24 years 28.8%, 32-38 years 14.8% and 39 years and above were 4.4%. The prevalence of PIH from our study was 8.4% and among the different factors under study, age of the pregnant women, family history of hypertension and the number of ANC visits the women had were found to be significantly associated.

**Key Words:** Pregnancy-induced hypertension, Pre-eclampsia.

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## INTRODUCTION

Hypertension is a common medical problem that affects more than 5% to 8% of all pregnancies in the world. It is associated with pregnancy that may be followed by eclampsia, acute renal failure, maternal death, premature delivery, intra-uterine growth restriction and other. The fetuses of hypertensive mothers are also at increased

risks, such as: inappropriate placental oxygen transfer, IUGR, premature delivery, placental abruption, stillbirth, and neonatal death.<sup>1</sup> Pregnancy-induced hypertension (PIH) known as toxemia or preeclampsia is a form of high blood pressure (BP) in pregnancy. It is one of the leading causes of mortality and morbidity among pregnant women. Hypertension in pregnancy is defined as a systolic BP of 140 mmHg and higher, and a diastolic BP of 90 mmHg and higher. Hypertension, bleeding and infection are the 'triad of lethality' that greatly contributes to maternal mortality and morbidity.<sup>2</sup> According to the World Health Organization (WHO), of all the hypertensive disorders of pregnancy, preeclampsia was also found to have an adverse impact on maternal and neonatal health with no definite treatment except for the termination of pregnancy/expulsion of the foetus. Of the 99% maternal deaths occurring in developing countries, especially Africa, PIH was found to be a major cause of maternal mortality.<sup>3</sup> Despite the recognition of

preeclampsia in ancient times, it was not found to be significant until the late 1800s when an association between hypertension, oedema, proteinuria, and eclampsia was established.<sup>4</sup> In spite of the high incidence and outcomes of hypertensive disorders of pregnancy, their pathogenesis, clinical manifestations and clinical courses greatly vary and at times complicate the diagnosis.<sup>6</sup>

### AIM AND OBJECTIVES

To study the prevalence and various factors associated with pregnancy induced hypertension among patients attending tertiary health centre.

### MATERIAL AND METHODS

It's cross sectional study carried out at Dr. Ulhas Patil Medical College, Jalgaon, tertiary health care centre The target population includes all pregnant women between the age group of 18-49 years, who attended antenatal clinic during a period of 3 months from Dec 2017 to FEB 2018 involving a total of 250 pregnant women. It consists of both data gathered by questionnaires and in depth interviews with pregnant women visiting the obstetrics and gynaecology OPD for follow up ANC visits. Informed consent from the participants was taken. The socioeconomic scenarios of the respondents were obtained. Blood pressure was measured by using mercury sphygmomanometer. Medical records were also verified.

Data were collected by interviewer administered questionnaires. Questionnaires was comprised of several topics, including socio-demographic background (age, educational status, occupation, monthly income, etc`.)and blood pressure status.. After data collection, data were sorted and analysed by using an updated and appropriate statistical software (Epi info 7).

### RESULTS AND OBSERVATIONS

**Table 1:** Age wise distribution of study population

Age groups ( years)	Study population	
	Frequency	Percentage
18-24	72	28.80
25-31	130	52.00
32-38	37	14.80
39 and above	11	04.40
<b>Total</b>	<b>250</b>	<b>100.00</b>

Above table No 01. Shows age wise distribution of the respondents included in the study. Target population selected was belonging to the age group of 18 to 49 years with a mean age of  $27.3 \pm 6.11$  years. More than half of the respondents i.e. 52% represented 25-31 years age group followed by 18-24 years 28.8%, 32-38 years 14.8% and 39 years and above were 4.4%. The age group 25 to 31 years was the most common age group involved with a maximum of 52% respondents in it.

**Table 2:** Distribution of study population based on different variables

Different Variables	Study population		
	Frequency	Percentage	
Educational status	Illiterate	21	08.40
	Primary school	35	14.00
	Secondary School (SSC)	<b>98</b>	<b>39.20</b>
	Higher Secondary School (HSC)	75	30.00
	Graduate	14	05.60
	Post graduate	07	02.80
Occupational status	Housewives	<b>168</b>	<b>67.20</b>
	In service	52	20.80
	Student	30	12.00
Socioeconomic status (Modified BG Prasad classification)	Class I	12	04.80
	Class II	27	10.80
	Class III	<b>91</b>	<b>36.40</b>
	Class IV	75	30.00
	Class V	45	18.00
Family History of Hypertension	Yes	52	20.80
	No	<b>198</b>	<b>79.20</b>
Number of ANC visits	≤ 04	32	12.80
	>04	<b>218</b>	<b>87.20</b>
<b>Total</b>	<b>250</b>	<b>100.00</b>	

Table No. 02 shows distribution of respondents depending on different variables. Out of the total 250 pregnant women under study, maximum of 39.2% were educated up to secondary school level. Near about 67%

were working as housewives and most of them belonged to class III socioeconomic status. There were 20.8% of respondents having family history of hypertension among their parents. With regard to the number of ANC visits,

12.8% respondents had  $\leq 04$  ANC visits during their ANC period.

**Table 3:** Prevalence of Pregnancy Induced Hypertension among study population

Pregnancy Induced Hypertension	Study population	
	Frequency	Percentage
Present	21	08.40
Absent	229	91.60

**Table 4:** Association of different variables with pregnancy induced hypertension

Different variables	Pregnancy induced hypertension			$\chi^2$ ; P value
	Present	Absent	Total	
Age Groups (Years)	18-24	04	68	72
	25-31	07	123	130
	32-38	06	31	37
	39 and above	04	07	11
Occupational status	Housewives	15	153	168
	In service	04	48	52
	Student	02	28	30
Socioeconomic status (Modified BG Prasad classification)	Class I	03	09	12
	Class II	03	24	27
	Class III	06	85	91
	Class IV	04	71	75
	Class V	05	40	45
Family History of Hypertension	Yes	16	36	52
	No	05	193	198
Number of ANC visits	$\leq 04$	13	19	32
	$>04$	08	210	218
<b>Total</b>	<b>21</b>	<b>229</b>	<b>250</b>	

Table No. 03 shows that out of 250 pregnant women under study, 21 women were having history of pregnancy induced hypertension during their ANC period. Hence from our present study, the prevalence of PIH among respondents was 8.4%. With regard to association of different variables with pregnancy induced hypertension (Table No. 04) it was found that, age of the pregnant women, family history of systemic hypertension and the number of ANC visits the pregnant women had were found to be significantly associated with pregnancy induced hypertension while, association of occupational status and the socioeconomic status with pregnancy induced hypertension of the pregnant women studied were not statistically significant.

## DISCUSSION

Pregnancy-induced hypertension (PIH) complicates many pregnancies, especially in the developing world. The cause of this condition is not clear. Several studies have therefore sought to evaluate the risk factors of PIH in different parts of the world. Some risk factors have been commonly reported in the developed world while others are common to the developing countries. Since the cause of PIH is not clear, primary prevention largely depends

on the identification of its risk factors. The prevalence of the hypertensive disorders in pregnancy was 8.4% in this study but, prevalence of 21.6% and 17.2% had been reported from south-eastern Nigeria and Finland, respectively.<sup>7,8</sup> However, 10% and 11.6% had been reported from Ibadan and Benin City.<sup>6,9</sup> Sachdeva *et al.*, in Gujarat, reported incidence of pregnancy induced hypertension to be 15% among women of rural background.<sup>16</sup> The factor that may be responsible for the low prevalence of hypertensive disorder in our hospital could be due to time constraint and small sample size. Hypertensive disorders of pregnancy were reported to be 7.49, 15.5, 5.38, 8.96% respectively in other various hospital based studies in India.<sup>12,13,14,15</sup> In the present study, it is found that age of the pregnant women and the number of ANC visits the pregnant women had were found to be significantly associated with pregnancy induced hypertension while, association of occupational status and the socioeconomic status with pregnancy induced hypertension of the pregnant women studied were not statistically significant. Analogous to our study findings Sachdeva *et al.*, revealed no significant association between socioeconomic status and PIH.<sup>16</sup> A positive family history of hypertension was found to be a

significant risk factor for developing hypertensive disorders in pregnancy in this study. Women whose mothers suffered from PIH were three times more likely to develop PIH than other women. Possible selection bias among women recruited into this study cannot be ruled out. The study was conducted over a short period of time thus we could have missed essential characteristics among women who did not get the chance to be part of this study.

## CONCLUSIONS

In this study prevalence of PIH was 8.4 % and among different factors under study, age of the pregnant women, family history of hypertension and the number of ANC visits the women had were found to be significantly associated.

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