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Pregnancy Induced Hypertension Hospital Based Retrospective Study

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Abstract:- To access the prevalence of pregnancy induced hypertension. As it is one of the major leading cause of mortality.

➢ ***Methods:-***
A retrospective observational study was conducted in department of Gynecology and obstetrics in singareni collieries company limited (SSCL)Main hospital ,kothagudem.A total of 157 pregnant women were included in the study appropriate statistical tests were used for analysis.

➢ ***Results:-***
A total of 157 pregnant women were included in the present study. prevalence of hypertension in pregnancy was found to be 26.2%.The factors which are significantly associated with prevalence of PIH were found to be maternal age ≥25-30 years(P=0.0314*) ,third trimester(P=0.048*) ,ANC visits(P=0.0001***) religion(P=0.038$^{*)}$ were found to be significantly associated with prevalence of hypertension in pregnancy.

➢ ***Conclusion*:-**
The prevalence of pregnancy induced hypertension is slightly higher .Early diagnosis and treatment is a key factor to prevent pregnancy induced hypertension and its complications.

Keywords:- *Pregnancy, Induced, Hypertension, Prevalence.*

I. INTRODUCTION

Pregnancy induced Hypertension is defined as systolic blood pressure ≥140 mmHg and diastolic blood pressure > 90 mmHg[1] in pregnant women. The National high blood pressure education programme (NHBPEP) classified hypertensive disease in pregnancy into 4 groups:(1) Gestational Hypertension (2) Chronic Hypertension (3) Pre eclampsia/ Eclampsia (4) Superimposed pre-eclampsia (on Chronic Hypertension)[2].According to WHO PIH is one of the main causes of maternal, foetal and neonatal morbidity and mortality ,it complicates about 6-10%.Hypertension, Obesity ,Gestationa lDiabetes, Black race, thrombophyllia, increased testosterone concentrations, insulin resistance are the considered factors for PIH[3]. Prevalence of PIH may vary from country to country. In India, the prevalence of PIH was found to be 5-15%[4] where as in Haryana it was 6.9%[5] and Pune 7.8%[6].In Brazil , Sweden, Harare (Zimbabwe),Ethiopia and United States the prevalence of HDP were found to be 7.5%,1.5% ,19.4%,7.9% and 6-8%[6,7,8,9]. It is the third leading cause of maternal deaths in India and second leading cause of maternal deaths in China. One tenth of maternal deaths in Africa (9.1%) and one quarter deaths in Latin America are due to PIH associated complications It is most common cause of maternal deaths in Europe[3,7]. WHO estimates that atleast one women dies every seven minutes from complications of Hypertensive disorders of pregnancy.[10]

II. METHODS

A. Study design

This study was carried out as retrospective observational study.

B. Study site

The study was carried out in singareni colloeries company limited, main hospital, kothagudem, bhadradri district.

C. Study criteria

- Inclusive criteria: All pregnant women admitted women into obstetrics ward with gestational age greater than 28 weeks.
- Exclusive criteria: Pregnant women with smoking and alcohol habits. Patients with incomplete data.

D. Source of data& Data collection

Patient data relevant to the study was obtained from following sources

- Case sheet.
- Antenatal visit record.

All the relevant information was collected from the patient case sheet and antenatal records. The assessment of parameters includes a predesigned, pretested document was used to collect that data from in the study subjects. In this included information on socio-demographic characteristics, family history of hypertension and antenatal records etc.
The type of delivery, infant condition and infant weight were recorded.

E. Statistical analysis

The data was analyzed using Graph Pad Prism statistical software version 5.0.

III. RESULTS

Our study shows that the prevalence of PIH to be 26.2%.

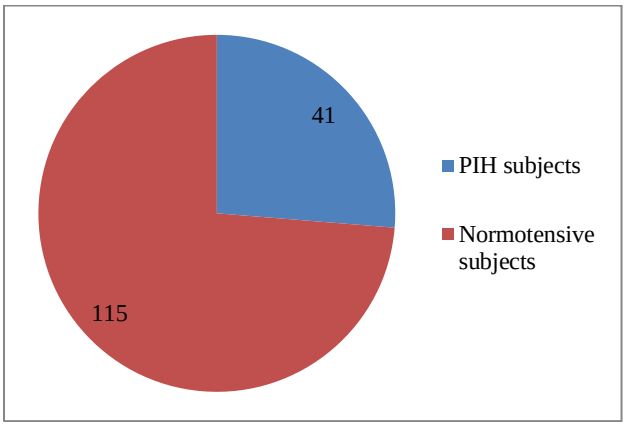

Fig 1:- prevalence of PIH

➢ *Age*:-

Among the study subjects, the number of patients under the age less than or equal to 20 years, between 21-25 years, between 26-30 years and above 31 years were 7,57,82,9 and 1respectively.

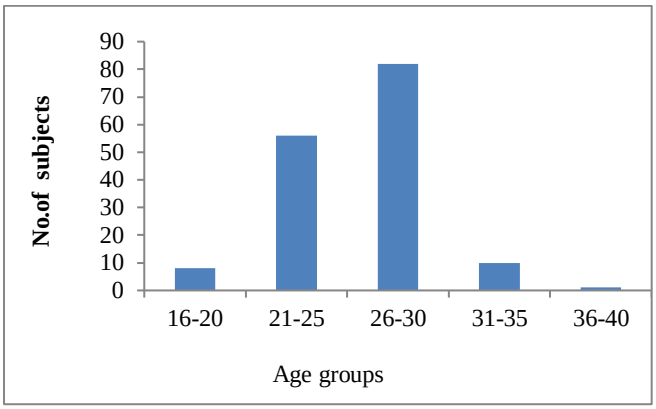

Fig 2:- Age

➢ *Religion*:-

The figure below describes the subjects based on the religion. The subjects belong to Hindus were 128, Muslims were 16, Christians were 7 and others were 5.

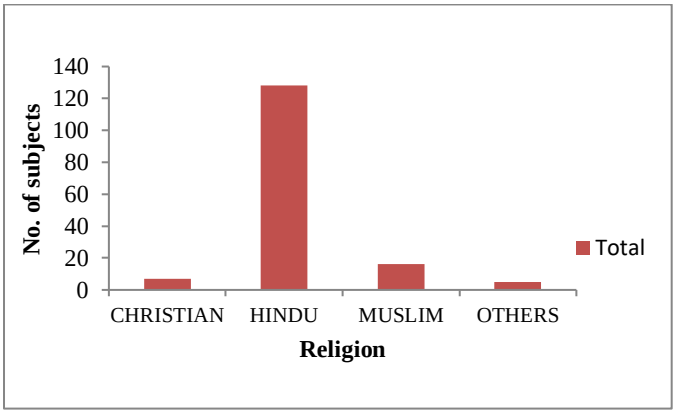

Fig 3:-Religion

➢ *Education:-*

The figure below describes the subjects based on the literacy. The number of patients whose qualification is less than or equal to, up to 12th, UG and PG were 12, 23, 63 and 58respectively.

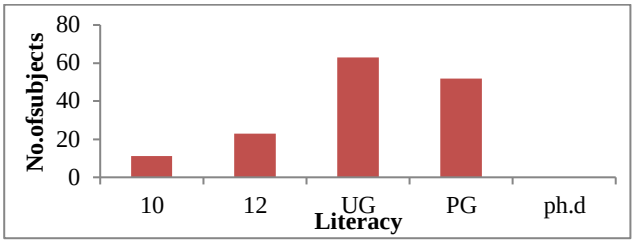

Fig 4:- Education

➢ *Occupation:-*

The figure below gives the information of subjects based on occupation housewives were 148 and 8 were employees.

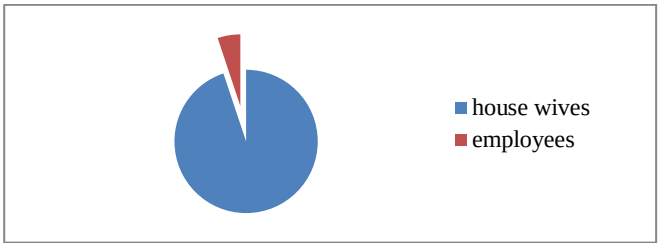

Fig 5:- Occupation

➢ *Socio-economic status:-*

Based on Economical status the subjects were classified as Lower, Middle and upper containing 20, 114 and 22 subjects respectively.

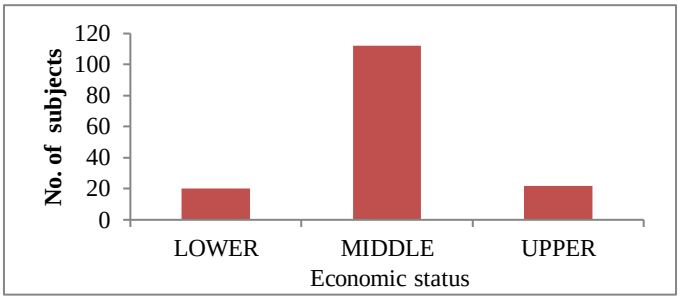

Fig 6:- Economic status

➢ *Gravida:-*

The subjects were described based on the gravida. The subjects with primi gravida were 75, gravida 2 were 58, gravida 3 were 21, gravid 4 were 2 and gravida more than 4 were none.

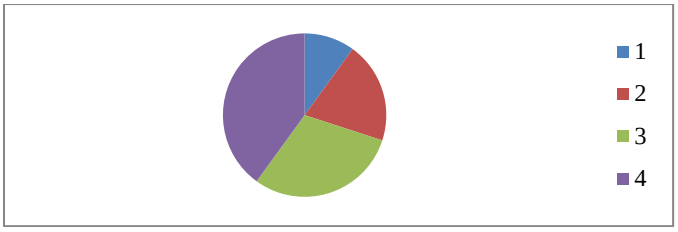

Fig 7:- Gravid

➢ *Family history:-*

The below figure describes the subjects based on the family history. The subjects with family history were 41 and without family history were 115.

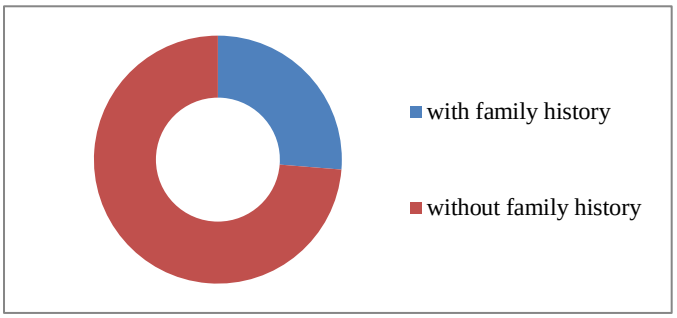

Fig 8:- family history

➢ *Trimester:-*

In the below figure the number of subjects in 1st, 2nd, and 3rd trimester were 2,42 and 83.

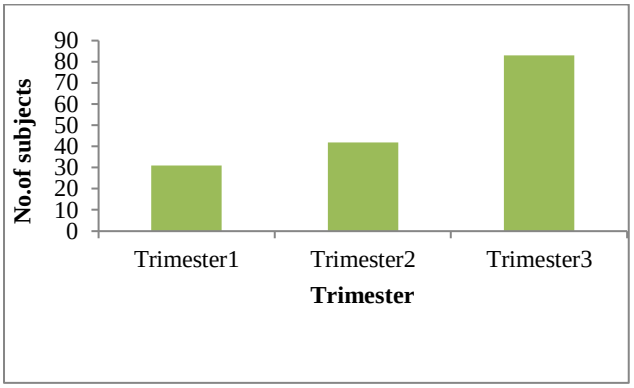

Fig 9:- Trimester

➢ *Antenatal visits:-*

The figure below is based on the antenatal visits, the subjects ≤4antenatal visits were 18 and >4 were 138 subjects.

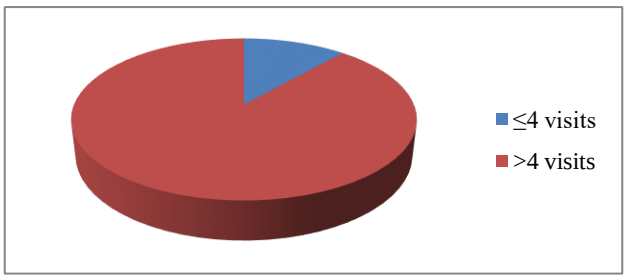

Fig 10:- antenatal visits

➢ *Type of delivery:-*

The figure here gives count of subjects based on type of delivery. 133 subjects underwent caesarean and 23 had normal deliveries.

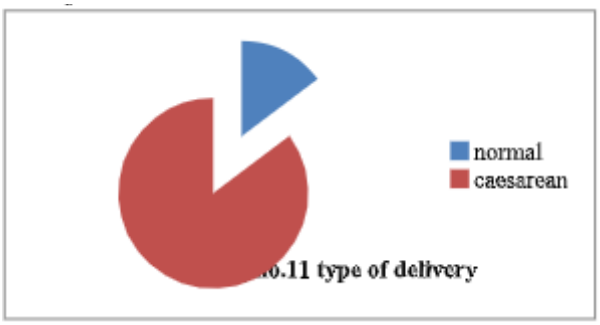

Fig 11:- type of delivery

IV. PREGNANCY INDUCED HYPERTENSION VS SIGNIFIED PARAMETERS

➢ *Age wise Frequency distribution of PIH:*

The mean age of patients with PIH was found to be 24.75. The subjects ≤ 20 years old with mild PIH were1 (100%), none had severe PIH and chronic HTN. Among the Patients in the age group of 21-25 years, 4(40%) had mild PIH and 3 (30%) & 3(30%) patients had severe PIH and chronic HTN .In the subjects between 26-30 age group, 16(66.6%) ,4(16.6%) and4 (16.6%) had mild PIH ,severe PIH and chronic HTN respectively. In the subjects between 31-35 years of age 5(83.3%) had mild PIH and 1(16.6%) had chronic HTN. Only one patient had mild PIH in the age group of above 36 years.

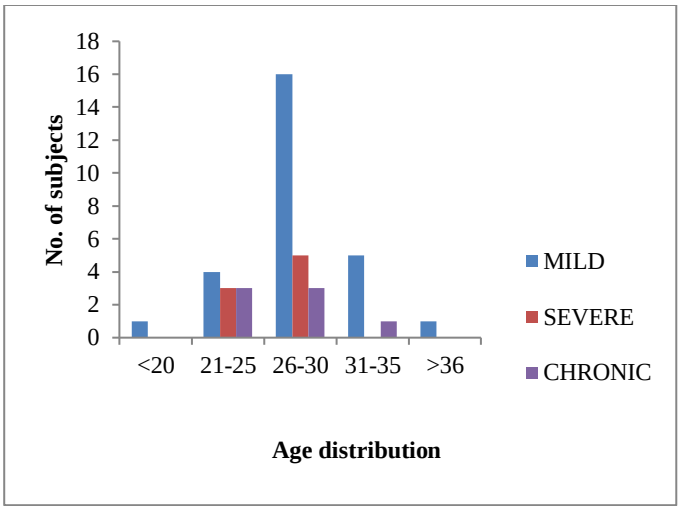

Fig 12:- Age wise frequency of PIH

➢ *Religion wise Frequency distribution of PIH:-*

Below table and graph describes the PIH subjects based on religion. The subjects who had mild PIH in Hindus were high accounting for 23(69.6%) followed by 5(15.1%) had severe PIH and 5(15.1%) had chronic HTN. The subjects who had mild PIH in Muslims were 1(25%) and 2(50%) had severe PIH. The subjects who had chronic HTN were 1(25%). The subjects who had mild PIH in Christians were 3(75%), none had severe PIH and 1(25%) had chronic HTN.

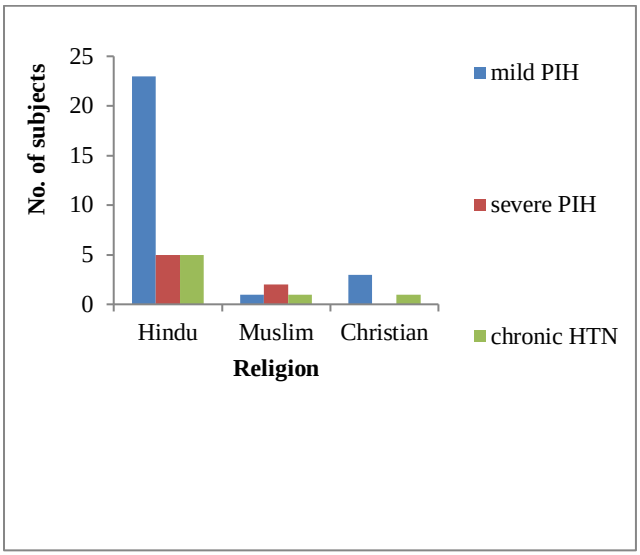

Fig 13:- Religion wise frequency of PIH

➢ *Trimester wise Frequency distribution of PIH:-*

From the graph below we can demonstrate the subjects based on their trimester. In the first trimester none had mild PIH, 1(16.6%) had severe PIH and 5(83.3%) had chronic HTN. In the second trimester, 9 (52.9%) had mild PIH, 6(35.2%) had severe PIH and 2(1.7%) had chronic HTN. During the 3rd trimester, 18(18 %) had mild PIH, none had severe PIH and chronic HTN.

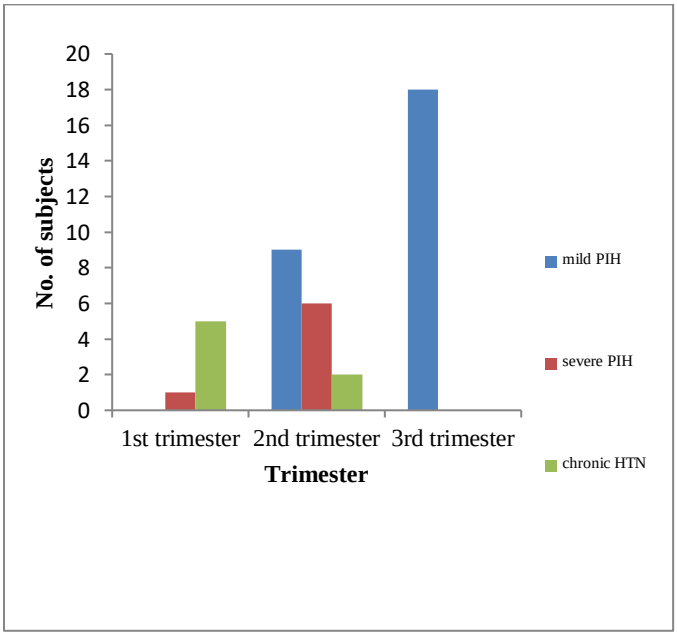

Fig 14:- Trimester wise frequency of PIH.

➢ *Antenatal visit wise Frequency distribution of PIH:-*

The table below gives number of subjects with respect to antenatal visits. Among subjects who had less than 4 antenatal visits who had mild PIH, Severe PIH and Chronic HTN are 9(69.2%), 4(30.7%) and 0 respectively. Among the subjects who had more than 4 antenatal visits who had mild PIH, severe PIH and chronic HTN are 18(64.2%), 3(10.7%)and 7(25%) respective.

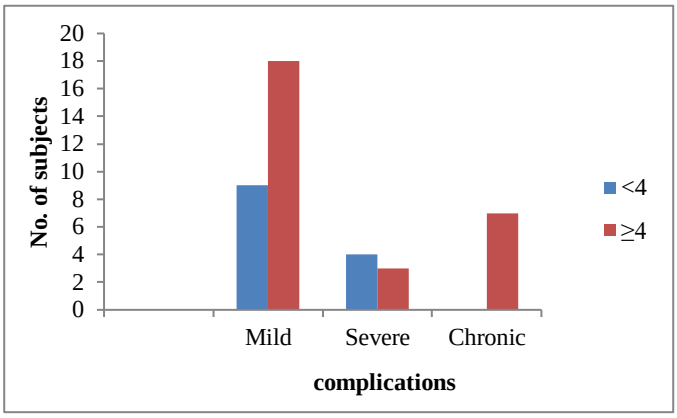

Fig 15:- ANC wise frequency of PIH

V. DISCUSSION

The retrospective study was conducted to assess prevalence of pregnancy induced hypertension. Generally, this problem is more common in developing countries, and the prevalence of PIH in, our study was found to be 26.2%.In our study, prevalence of PIH was found higher in the age group of 26 -30 years. We found that there is significant association between age and PIH and the risk in the subjects above age 25 is2.3 folds greater when compared with the women whose age is below 25 with p value of (0.0314)* . This is in accordance with the study by parazzini et.al. who concluded that the risk of PIH in women age more than 25 is 3.2 times greater than age below 25. Bharthi Mehtha et.al[5] also found similar higher prevalence among women greater than 25years (9.9%). Monalisa jena et al[2] also had similar results. The prevalence of the PIH among Hindus (80%) was high sikha saxena et al[11] study , but showed no significance between Hindu and PIH. Hindu predominance was more in our study because more population belong to Hindus than Christian and Muslims in nation. Our study found association of Christian religion with that of PIH with p value (0.038)*. Prevalence of PIH is high (apprx.80.5%) in patients who were at least graduates. Sikha saxena et al[11], sachdeva et al[5]., owiredu et[5] al also found similar findings.The prevalence among the house wife is found to be high (92%) in our study. Tebeuet.al[5] and sarkar shamima ahmedh et.al[12]. Reported greater risk of having hypertension during pregnancy for housewives**.** Prevalence of PIH in our study among middle class subjects was higher. Chadi yazbek et al[13] made a study and showed that the prevalence of PIH among middle class families among French people was high(52.4%).In our study the patient with Gravida 1 & 2 were high(46%). Anujeet kaur randhawa et al[4] has proved that prevalence of PIH was higher in Gravida 1 (28%)and 2(34%) and the results supports our study . There is no significant association between Gravida and PIH (P=0.2839). Prevalance of PIH among subjects with family history was not significant in our study. Nova shopen eval et al[14] has given conclusion that positive family history of HTN has not identified as risk factor for the developing PIH women. According to our study the highest prevalence of PIH was seen in third trimester (56%)pregnant women. we found that

there is significant association between trimester and PIH with(P =0.048)*. Shikhasaxena et.al[11]. Study supports our findings that the prevalence among the patients with 3rd trimester is high. In our study highest prevalence was among the subjects who have recieved antenatal visits more than 4visits (76%).we have found significant association between antenatal visits and PIH with p value (<0.0001)*** .seimone sexas[15] has divided the antenatal visits into ,3 and ≥ 3 visists and showed results similar to our study. Xuxiongetal[16]also proved the similar one. Our study has showed caesarean type of delivery higher than normal delivery in PIH subjects. Monica muti et al[7] s made a study in the region of Harae in Zimbabwe out of 5,869 HDP subjects 76.95% had caesarean and53.36 % had assisted delivery and this study had supported our results. Then again, in Umtata General Hospital, the predominance of cesareans among hypertensive women was 30.2%.

VI. CONCLUSION

From the above study, we found PIH as significant association with age, ANC visits, religion, and trimester. The prevalence of PIH was found to be higher. The statistical association was found between age, religion, ANC visits, and trimester. The problem is higher among 26-30 years aged women. Identification of this risk factor of PIH would be useful for early diagnosis of PIH in particular age group that requires clinical monitoring and appropriate treatment. We found that Christians and third trimester subjects had higher association with PIH. Awareness' regarding PIH and availability of easily accessible and affordable health care services will be helpful in reducing the PIH.ANC visits also had higher significant. Although this being a hospital studies, the results may not be applicable to general population. Therefore, further need to elaborate the study using larger population including more subjects and socio demographic parameters to establish better statistical correlation.

VII. LIMITATIONS

- The limitations of a study are those characteristics of study design or methodology that impacts the interpretation of the results of research method.
- Although this study was carefully prepared, our study did have limitations.
- The study was a hospital based, conducted in one hospital
- However, the sample size was also of short number, differentiating the results among that population is difficult and probably a larger population could generate more accurate results.

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