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Original Research

Assessment of risk factors for pregnancy induced hypertension

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ABSTRACT:
Background: Both systolic and diastolic blood pressure raises are important in the identification of pregnancy induced hypertension. The present study was conducted to assess cases of pregnancy induced hypertension (PIH). **Materials & Methods:** 152 pregnant women reporting to the department were enrolled. In all pregnant women, blood pressure was measured with mercury sphygmomanometer while the woman was seated in the upright position and supine position using a mercury sphygmomanometer apparatus. **Results:** Age group <20 years had 60, 20-25 years had 70 and 25-30 years had 22 patients. 62 were single and 90 were married. 32 had primary, 50 had secondary and 70 had higher education. The difference was significant (P< 0.05). Common type was pre- eclampsia in 40, gestational in 42, eclampsia in 26 and chronic hypertension in 44 cases. The common risk factors was family history PIH in 80, family history DM in 50 and parity 0 was seen in 50, 1-4 in 42 and >4 in 60 patients. **Conclusion:** Common risk factors for PIH was family history PIH, family history DM and parity >4.
Key words: Chronic hypertension, eclampsia, Pregnancy induced hypertension

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Introduction

Hypertension in pregnancy is a systolic blood pressure ≥ 140 mmHg or diastolic blood pressure ≥ 90 mmHg or both. Both systolic and diastolic blood pressure raises are important in the identification of pregnancy induced hypertension.[1] Pregnancy induced hypertension (PIH) is hypertension that occurs after 20 weeks of gestation in women with previously normal blood pressure. The broad classification of pregnancy-induced hypertension during pregnancy is gestational hypertension, pre-eclampsia and eclampsia.[2]

Preeclampsia is a leading cause of maternal and neonatal mortality and morbidity, predominantly in developing countries. The disorder is usually diagnosed in late pregnancy by the presence of high blood pressure with proteinuria and/or edema.[3] Prevention of any disease process needs awareness of its prevalence, etiology and pathogenesis. Medications should be reviewed when pregnancy is first diagnosed. We cannot recommend with certainty to either stop, start, or continue antihypertensive medications: evidence is mixed whether such actions improve outcome. Methyldopa is the most studied of all antihypertensive medications and is generally the first choice in pregnancy because it has a limited effect on uteroplacental blood flow. Sometimes an alternative must be found because of elevated liver enzymes or complaints of headache.[4] Labetalol, a combined alpha blocker and beta-blocker, is the first alternative to methyldopa and is becoming a first-line choice as experience with the drug during pregnancy increases. It is generally well tolerated and has an easier (twice-a-day) dosing schedule than methyldopa. Calcium channel blockers, particularly nifedipine, are being used more frequently, probably because doctors have become familiar with their use to stop premature labor. They seem to be safe and effective, but evidence is sparse.[5] The present study was conducted

to assess cases of pregnancy induced hypertension (PIH).

Materials & Methods

This study consisted of 152 pregnant women reporting to the department. All enrolled women were verbally informed and their written consent was obtained.

A thorough clinical examination was done. Data was collected through face-to-face interview. In all pregnant women, blood pressure was measured with mercury sphygmomanometer while the woman was seated in the upright position and supine position using a mercury sphygmomanometer apparatus, and for referred women, BP and protein urea at time of diagnosis were taken from referral form. Results thus obtained were subjected to statistical analysis. P value less than 0.05 was considered significant.

Results

Table I Socio- demographic characteristics

Variables	Number	P value
Age group (Years)		
<20	60	0.05
20-25	70	
25-30	22	
Marital Status		
Single	62	0.03
Married	90	
Education		
Primary	32	0.14
Secondary	50	
Higher	70	

Table I shows that age group <20 years had 60, 20-25 years had 70 and 25-30 years had 22 patients. 62 were single and 90 were married. 32 had primary, 50 had secondary and 70 had higher education. The difference was significant (P< 0.05).

Table II Distribution of cases

Type	Number	P value
Pre- eclampsia	40	0.12
Gestational	42	
Eclampsia	26	
Chronic hypertension	44	

Table II, graph I shows that common type was pre- eclampsia in 40, gestational in 42, eclampsia in 26 and chronic hypertension in 44 cases. The difference was non- significant (P> 0.05).

Graph I Distribution of cases

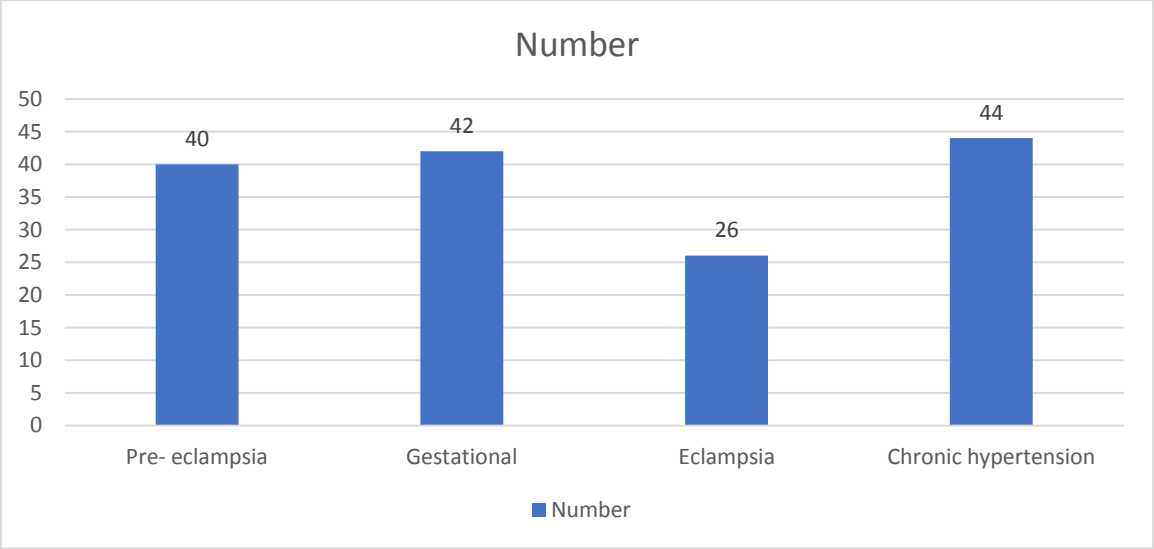

Table III Assessment of risk factors

Risk factors	Variables	Number	P value
Family history PIH	Yes	80	0.15
	No	72	
Family history DM	Yes	50	0.02
	No	92	
Parity	0	50	0.12
	1-4	42	
	>4	60	

Table III shows that common risk factors was family history PIH in 80, family history DM in 50 and parity 0 was seen in 50, 1-4 in 42 and >4 in 60 patients.

Discussion

Pregnancy induced hypertension is a major contributors to maternal and perinatal morbidity and mortality. In the United States, about 15% of maternal deaths are attributable to hypertension, making it the second leading cause of maternal mortality.[6] Severe hypertension increases the mother's risk of cardiac failure, heart attack, renal failure and cerebral vascular accidents. In addition, the fetus is at increased risk from complications like poor placental transfer of oxygen, growth restriction, preterm birth, placental abruption, stillbirth and neonatal death. Hypertensive disorders represent the most common medical complications of pregnancy with a reported incidence of 5–10%.[7] Globally, preeclampsia is a leading cause of maternal and neonatal mortality and morbidity, predominantly in developing countries. The disorder is usually diagnosed in late pregnancy by the presence of high blood pressure with proteinuria and/or edema. Prevention of any disease process needs awareness of its prevalence, etiology and pathogenesis. The World Health Organization estimates that at least one woman dies every seven minutes from complications of pregnancy induced hypertension disorders. Pregnancy complicated with hypertensive disorder is related with increased risk of adverse fetal, neonatal and maternal outcome.[8] The present study was conducted to assess cases of pregnancy induced hypertension (PIH).

In present study, age group <20 years had 60, 20-25 years had 70 and 25-30 years had 22 patients. 62 were single and 90 were married. 32 had primary, 50 had secondary and 70 had higher education. Singh et al[9] found that out of 815 pregnant women, 82 (10%) had hypertension. Pre- eclampsia was seen in 37, gestational hypertension in 19, eclampsia in 16 and chronic hypertension in 10 patients. The difference was significant (P< 0.05). Common symptoms were swelling on face/legs (35), headache (32), convulsions (15), giddiness (10), vomiting (12) and breathlessness (5). The difference was significant (P< 0.05).

We found that common type was pre- eclampsia in 40, gestational in 42, eclampsia in 26 and chronic hypertension in 44 cases. Gudeta et al[10] assessed pregnancy induced hypertension and its associated factors among women attending delivery service. The total sample size (422) was proportionally allocated to the three hospitals. Systematic sampling technique was used to select study participants. The prevalence of pregnancy induced hypertension was 33(7.9%); of which 5(15.2%) were gestational hypertension, 12 (36.4%) were mild preeclampsia, 15(45.5%) were severe preeclampsia and 1 (3%) eclampsia. Positive family history of pregnancy induced hypertension [AOR5.25 (1.39–19.86)], kidney diseases (AOR 3.32(1.04–10.58)), having asthma [AOR 37.95(1.41–1021)] and gestational age (AOR 0.096(0.04-.23)) were predictors of pregnancy induced hypertension.

We found that common risk factors was family history PIH in 80, family history DM in 50 and parity 0 was seen in 50, 1-4 in 42 and >4 in 60 patients. Bangal et al[11] in their study, there were 50 women with PIH and 50 women without PIH. The women with PIH and without PIH, both groups were matched for their background information. It was found that there was no association with primipara and multipara with PIH. Menstrual history had also no association with present PIH condition. Family history of hypertension and family history of diabetes mellitus also had not association with present PIH. Past history of PIH had strong association with current PIH for women who are multigravida. Also there was interesting observation that vegetarian had higher chance of getting PIH then mixed diet pattern.

Preeclampsia places both mother and fetus at risk. It is, however, a maternal disorder. The mainstay of treatment is early detection and managed delivery to minimize both maternal and fetal risks. If the pregnancy is at term, the decision is easy: the baby should be delivered. The decision to deliver involves balancing the risks of worsening preeclampsia against those of prematurity.[12] Delivery is generally not indicated for women with mild preeclampsia until 37 to 38 weeks of gestation and should occur by 40 weeks. If remote from term, the mother should be admitted for evaluation. Baseline and serial laboratory tests (complete blood cell count, BUN, creatinine, uric acid, ALT, AST). Ultrasonography to measure fetal growth and amniotic fluid volume and Doppler ultrasonography. Umbilical artery systolic/diastolic ratios measured by Doppler ultrasonography may detect early uteroplacental insufficiency. Antenatal testing (nonstress test or biophysical profile).[13] The biophysical profile is an assessment of fetal well-being. Fetuses that are well oxygenated behave

normally by twisting, squirming, flexing and extending extremities, and breathing. Fetuses that are hypoxic lie still, trying to conserve oxygen. A 24-hour urine collection for protein. The goals of treatment are to prevent seizures, lower blood pressure to avoid maternal end-organ damage, and expedite delivery.[14]

Conclusion

Authors found that common risk factors for PIH was family history of PIH, family history of DM and parity >4.

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