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STUDY OF RISK FACTORS AND MANAGEMENT OF THE HYPERTENSIVE DISORDERS OF PREGNANCY IN TRIBAL POPULATION OF SOUTH RAJASTHAN

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ABSTRACT The pre eclamptic toxemia remains leading cause of maternal and perinatal morbidity and mortality (1). Out of total 1148 deliveries in the study period there were 137(12%) cases of pregnancy induced hypertension. Lower maternal age, primigravida, unbooked , low socio economic status, low education, history of PIH in previous pregnancy, anemia, pre-existing chronic hypertension are various factors in causation. Early diagnosis and prompt treatment of PIH and its complications are key to success in prevention of maternal or fetal loss.

KEYWORDS : Pre eclampsia, Pregnancy induced hypertension, Eclampsia, HELLP SYNDROME, Abruption placentae, Hypertensive encephalopathy

Introduction

As per International Society for the Study of Hypertension in Pregnancy (ISSHP) there are four categories of hypertension in pregnancy, pre-eclampsia , chronic hypertension – essential or secondary , pre-eclampsia superimposed on chronic hypertension and gestational/pregnancy induced hypertension(2.)The term gestational hypertension was adopted by working group of NHBPEP (2000) to replace pregnancy induced hypertension (3). Pre-eclampsia as per ISSHP classification is defined as new onset hypertension of more than 140/90 mm of Hg after 20 weeks gestation, proteinuria more than 300mg/day or a spot urine protein/creatinine ratio ≥ 30 mg protein/mmol (4). There are various etiological factors for pregnancy induced hypertension. Abnormal placentation , Vasculopathy and inflammatory changes , Immunological factors , Genetic factors and Nutritional factors(5). Pregnancy induced hypertension is characterized by vasospasm, endothelial cell damage resulting in activation of coagulation system and increased vascular reactivity to angiotensin II. This increased sensitivity precedes the onset of hypertension(6).

Other factors include Nullipara/primi/teenage pregnancy (7), Assisted reproductive techniques , History of previous PIH, Polycystic ovary disease(8), less interval between pregnancies ,Family history, Low socio economic class,(9) Chronic hypertension, renal disease, obesity, insulin resistance, low birth weight, gestational diabetes mellitus(10), protein C resistance, protein S deficiency, antiphospholipid antibody syndrome, hyper homocystenemia and sickle cell disease(11), Smoking , Multiple pregnancies, Structural anomalies, Gestational trophoblastic diseases, Urinary tract infection, Chromosomal anomalies (trisomy 13, triploidy)(12) Prevention by Calcium supplementation , Low dose aspirin , Vitamin E supplementation Lycopene supplementation and Rest .(13) Maternal complications HELLP syndrome, temporary blindness, abruptio placentae, disseminated intravascular coagulation (DIC), acute renal failure (ARF), pulmonary oedema, arrhythmias, liver lesions, intracranial or hepatic haemorrhage, adult respiratory distress syndrome (ARDS), hypervolemia and risk of recurrent preeclampsia(14). Foetal complications include Intrauterine growth retardation and foetal death(15).

The goal of treatment is to prevent the condition from becoming worse and to prevent it from causing other complications(16). Bed rest ,hospitalization magnesium sulfate ,fetal monitoring , fetal movement counting , non stress testing ,biophysical profile by ultrasonography, Doppler flow studies, continued laboratory testing of urine and blood, corticosteroids, that may help mature the lungs of the fetus and delivery of the baby by induction of labor or caesarean section(17).

Material and methods

Present study has been undertaken to determine the predisposing factors in development of pregnancy induced hypertension and to suggest preventive measures. Study has been carried out at PACIFIC INSTITUTE OF MEDICAL SCIENCES UMARDA UDAIPUR RAJASTHAN .maximum patients are tribals of south rajasthan and are very poor. Period of study has been 2014 to 2017. Maternal age, parity, education, socio-economic status , period of gestation and type of delivery were in recorded. Pre-existing maternal disease, anemia, hypertension, heart disease,kidney and liver disease were recorded. Maternal weight at first visit, maternal height, total ante natal visits, obstetric complications, drug and medication use, tobacco use were recorded. Maternal symptoms, amenorrhea, swelling feet, weakness , headache, bleeding or discharge per vagina were recorded. Physical findings, anemia, swelling feet and body , BP more than 130/ 90 mm of hg, twins or mal presentations were recorded. Laboratory studies, hemoglobin leucocyte count , blood sugar, urea, creatinine, liver enzymes ,urine albumin and sugar were recorded. Imaging studies, gestational age, ultrasonography , Placental localization, twins , congenital defects, presentation and positions were noted. Fluid balance, tocolytic use and type, evidence of pre-eclampsia, infection, premature rupture of membranes, pre term labor and therapeutic measures ,type of delivery normal or caesarean section were also recorded. Pregnancy outcomes, gestational age at delivery, birth weight, mode of delivery, were recorded.

Observations

Table 1 Maternal Age distribution

s.no	Age in years	No of patients	percentage
1	Less than 20	77	56.20
2	20- 25	26	19
3	26-30	16	11.67
4	31-35	10	7.30
5	36 and more	8	5.83
		137	100

Table 2 Maternal Parity distribution

s. no.	Parity	Number	Percentage
1	0	70	51.10
2	1	27	19.70
3	2	18	13.15
4	3	16	11.67
5	4	4	2.93
6	5	2	1.45
		137	100

Table 3 Maternal ante natal care education socio economic status distribution

s.no	Maternal antenatal visits	No of patients	percentage
1	nil	72	52.56
2	1-2	38	27.73
3	3 and more	27	19.71
	Maternal education		
4	uneducated	80	58.39
5	Class 5 to class 10	39	28.47
6	More than class 10	18	13.14
	Socio economic class		
7	Very low	112	81.75
8	low	25	18.24

Table 4 maternal risk factors

S .no .	Maternal risk factors	number	percentage
1	Mode of delivery		
	Normal vaginal delivery	105	76.64
	Caesarean delivery	32	23.36
2	Anemia	98	71.53
	10gm% and more	39	28.47
	Mild 8-10 gm%	26	18.97
	Moderate 6- 8 gm%	54	39.39
	Severe less than 6gm%	18	13.13
3	Pregnancy induced hypertension		
	Mild 130/90 and above	42	30.65
	Moderate 150/100 and above	54	39.41
	Severe 170/110 and above	41	29.92
	Chronic hypertension	8	5.83
	History of PIH in past	18	13.15
	Eclampsia	10	7.29
5	Abruptio placentae	12	8.75
6	Pre term rupture of membranes	19	13.86
7	Weight of neonate		
	Less than 1000 gm	3	2.1
	1000- 1500 gm	9	6.56
	Less than 2500gm	40	29.19
	2500gm and more	85	62.04

Results

77 cases(56.20%) belonged to age group of less than 20 years ,26 (19%) were 20-25 years of age, 16 (11.67%) were 26 -30 years, 10(7.30%) were 31 -35 years and 8 (5.83%) was more than 36 years .thus younger and elder extremes are more prone for PIH. 70 (51.10%)cases were primigravida and para 0 . 27 (19.70%) cases were para1 , 18 (13.15%) were para 2 , 16 (11.67%) were para 3, 4(2.93%) were para 4 , and 2 (1.45%) cases were para 5.extremes of parity are more prone for PIH. 72 (52.56%) were unbooked with no ante natal visits, 38 (27%) had two 0r less visits, and 27 (19.71%) were booked cases.80(58.39%) were un educated, 39 (28.47%) were below 10 standard and 18(13.14%) were educated more than 10 standard. 112(81.75%) were land less and very low socioeconomic status and 25(18.24%) had land in family. 32 cases (23.36%) required caesarean delivery and 105 (76.64%) were normal delivery. 98 (71.53%) were anemic with 26 (18.97%) mildly anemic 54(39.39%) moderately anemic and 18(13.13%) were severly anemic.161 (57.91%).PREGNANCY INDUCED HYPERTENSION in 42 (30.65%)Mild 54 (39.41%) moderately severe and 41 (29.92 %) severe .10 (7.29%) had eclampsia. 12 (8.75%) had ante partum hemorrhage. 19 (13.86%) had pre mature rupture of membranes . 3(2.1 %) neonates were extremely low birth weight (less than 1000gm) and 9 (6.56%) were very low birth weight (less than 1500gm) and 40 (29.19%) low birth weight (less than 2500gm).85 (62.04%) were normal weight neonates.

Discussions

In developing world Hypertensive disorders of pregnancy is one of the major causes of maternal morbidity and mortality leading to 10–15% of maternal deaths,(18) It has variable incidence of 3–10% of all pregnancies.(19)present study had 137 (12%) cases of pregnancy induced hypertension out of 1148 deliveries in the study period. in Gujarat,(20) reported incidence of pregnancy-induced hypertension was found to be 15% among women of rural background ,risk of developing PIH tends to increase with maternal age.(21)there has been close relation between PIH and low socio-economic group uneducated malnourished anaemic mother with nil awareness and minimal ante natal visits.(22).In the present study 77 cases(56.20%) belonged to age group of less than 20 years ,26 (19%) were 20-25 years of age, 16 (11.67%) were 26 -30 years, 10(7.30%) were 31 -35 years and 8 (5.83%) was more than 36 years .thus younger and elder extremes are more prone for PIH. 70 (51.10%)cases were primigravida and para 0 . 27 (19.70%) cases were para1 , 18 (13.15%) were para 2 , 16 (11.67%) were para 3, 4(2.93%) were para 4 , and 2 (1.45%) cases were para 5.extremes of parity are more prone for PIH. 72 (52.56%) were unbooked with no ante natal visits, 38 (27%) had two 0r less visits, and 27 (19.71%) were booked cases.80(58.39%) were un educated, 39 (28.47%) were below 10 standard and 18(13.14%) were educated more than 10 standard. 112(81.75%) were land less and very low socioeconomic status and 25(18.24%) had land with them. Indicating antenatal care, education and socio economic status, influencing development of PIH. Other studies show approximately 30% of hypertensive disorders of pregnancy were due to chronic hypertension, while 70% of the cases were diagnosed as gestational hypertension/preeclampsia(23). previous history of cesarean section (24)and history of preterm delivery were associated with higher prevalance In present study, prevalence of hypertension in pregnancy was found significantly higher in women with history of hypertension in previous pregnancy.

Conclusion

PIH has high mortality and morbidity but all the causative factors can be prevented . Early diagnosis and treatment through regular antenatal check-up is a key factor to prevent hypertensive disorders of pregnancy and its complications. Therefore, it is the need of hour to devise a sound screening strategy to find out hypertension in pregnancy cases and comprehensive strategy for management of hypertension in pregnancy as well as maternal and child complications.

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