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A Study on Clinical Profile of Pregnant Women with Pregnancy Induced Hypertension

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ABSTRACT
Hypertensive disorders of pregnancy remain an important cause of maternal and fetal morbidity and mortality. It is an idiopathic multisystem disorder specific to pregnancy and the puerperium. How pregnancy incites or aggravates hypertension remains unsolved despite decades of intensive research. Treatment of this disorder remains a challenge even today because the exact etiology is unknown. A detailed history, clinical evaluation and investigations were done for all cases. All patients were followed up until they were discharged from the hospital after delivery. The definition of hypertensive disorders complicating pregnancy as defined by "working group report (2000) on high blood pressure in pregnancy" was taken for the diagnosis. 72.5% of Primigravida delivered beyond 37 weeks of gestation whereas 50% of women in the recurrent group delivered beyond 37 weeks of gestation. Fetal distress included meconium staining of amniotic fluid with or without fetal heart rate decelerations. Elective caesarean sections in the recurrent group were done for 17 cases with the previous caesarean section.

INTRODUCTION

Approximately 5-7% of all pregnancies are complicated by hypertensive disorders in pregnancy although remarkable variations are reported[1]. Hypertensive disorders of pregnancy remain an important cause of maternal and fetal morbidity and mortality. It is an idiopathic multisystem disorder specific to pregnancy and the puerperium. How pregnancy incites or aggravates hypertension remains unsolved despite decades of intensive research. Treatment of this disorder remains a challenge even today because the exact etiology is unknown[2].

The condition of marked oedema during pregnancy, complicates by seizures in some cases was recognised by the ancient Greeks. For over a century, the term "toxaemia" was used to describe hypertensive disorders of pregnancy as well as various associated and poorly understood gestational complications. In modern obstetrics, hypertensive disorders of pregnancy are understood to encompass a clinical spectrum of abnormalities ranging from minimal elevations in blood pressure to severe hypertension with multi organ dysfunction[1].

Fetal jeopardy results primarily from the compromised placental perfusion and the need for preterm delivery in severe cases. The major maternal hazards are the consequences of severe hypertension, seizures and damage to other end organs[3]. A history of low birth weight adjusted for gestational age is associated significantly with subsequent occurrence as well as recurrence of preeclampsia. These findings are consistent with the hypothesis of a shared etiologic factor or recurrent pathophysiologic mechanism for preeclampsia and fetal growth restriction[4].

A history of fetal smallness for gestational age is found in a substantial proportion of all cases of preeclampsia and thus seems to be important in the etiology of preeclampsia. Pregnancy-induced hypertension may be regarded as a manifestation of endothelial-cell dysfunction. The role of the eNOS gene in the development of a familial pregnancy-induced hypertension was evaluated by analysis of linkage among affected sisters and in multiplex families. These support the localization of a familial pregnancy-induced hypertension-susceptibility locus in the region of chromosome 7q36 encoding the eNOS gene[5,6].

MATERILS AND METHODS

Fourty cases of primi gravida (Group A) with hypertensive disease in pregnancy admitted to the above hospital in the study period were included. Fourty cases of second gravida (Group B) with hypertensive disease in the present and previous pregnancy admitted to the above hospital in the study period were included. A detailed history, clinical evaluation and investigations were done for all cases. All patients were followed up until they were discharged from the hospital after delivery. The definition of hypertensive disorders complicating pregnancy as defined by "working group report (2000) on high blood pressure in pregnancy" was taken for the diagnosis.

Blood pressure was recorded for all patients in the sitting position in the right arm with Sphygmomanometer. Proteinuria was checked and graded using 20% Sulpho Salicylic acid. Other investigations done included haemoglobin, blood grouping and Rh typing, complete count, differential WBC count, platelet count, peripheral smear examination, blood urea, serum uric acid, serum creatinine estimation and liver function tests. Urine microscopy was done in all cases. VDRL, HBsAg and HIV counselling was done in all the cases. Ophthalmic examination was done to evaluate fundal changes.

Diagnosis of hypertension in the previous pregnancy was based on either review of medical records if available or reliable history elicited from the patient. Women with concurrent medical problems such as chronic hypertension, renal diseases, diabetes and connective tissue disorders were excluded from the study.

RESULTS AND DISCUSSIONS

Among them primi gravida with hypertensive disease in pregnancy were 82 and second gravida with hypertensive disease in the present and previous pregnancy were 52. Out of which 40 cases of primi gravida (Group A) with hypertensive disease in pregnancy and 40 cases of second gravida (Group B) with hypertensive disease in the present and previous pregnancy admitted to the above hospital in the study period were included. Youngest patient in primigravida group was 20 years and oldest being 32 years with a mean age incidence of 26.5 years. Youngest patient in recurrent group was 23 years and oldest being 37 years with a mean age incidence of 29.9 years. Majority of the patients (52.5%) in the Primigravida group and recurrent group (45%) were diagnosed between 33-36 weeks of gestation. 72.5% of Primigravida delivered beyond 37 weeks of gestation whereas 50% of women in the recurrent group delivered beyond 37 weeks of gestation. Hence, 66% of women in the Primigravida group delivered vaginally as compared to 80.3% in

Table 1: Patient distribution and incidence

Group	Primigravida	Recurrent
Number	82	52
Incidence	12.4%	5.24%

Table 2: Distribution of booked and unbooked cases

Cases	Primigravida		Recurrent	
Booked	82	100%	52	100%
Un booked	00	00	00	00

Table 3: Age distribution

	Primigravida		Recurrent	
Age in years	Number	Percentage	Number	Percentage
<20	02	05	00	00
21-25	14	35	05	12.5
26-30	18	45	17	42.5
31-35	06	15	16	40
>36	00	00	02	05
Total	40	100	40	100

Table 4: Period of gestation at diagnosis

	Primigravida		Recurrent	
Gestational age in weeks	Number	Percentage	Number	Percentage
24-28	02	5	14	35
29-32	12	30	08	20
33-36	21	52.5	18	45
37-40	05	12.5	00	00
> 40	00	00	00	00
Total	40	100	40	100

Table 5: Period of gestation at delivery

	Primigravida		Recurrent	
Gestational age at delivery (weeks)	Number	Percentage	Number	Percentage
<28	00	00	03	7.5
29-34	01	05	08	20
35-37	10	25	09	22.5
>37	29	72.5	20	50
Total	40	100	40	100

Table 6: Mode of delivery

	Primigravida group		Recurrent group	
Mode	Number	Percentage	Number	Percentage
Vaginal delivery	14	35	12	30
Caesarean section	26	65	28	70
Total	40	100	40	100

Table 7: Indications for caesarean section

Indications	Primigravida	Recurrent
Fetal distress	14	08
Elective LSCS	00	14
Failed Induction	05	00
PROM >24 Hrs	00	03
CPD	02	00
Breech	01	00
Severe IUGR	03	02
Abruption	01	01
Total	26	28

the recurrent group. The rates of caesarean section were 34.0-19.7% in primigravida and recurrent groups respectively. Fetal distress included meconium staining of amniotic fluid with or without fetal heart rate decelerations. Elective caesarean sections in the recurrent group were done for 17 cases with the previous caesarean section.

The percentage of booked cases in the primigravida group and recurrent group were 100%. The percentage of referred cases in primi and recurrent group were 20-17.5% respectively. The maximum incidence of cases in both groups was in the age group of 20-30 years. The mean age of incidence in the primigravida was 26.5 years and in the recurrent group was 29.9 year. This correlated with the observations made by Hnat *et al*.[8] Caritis *et al*.[5] and Sibai *et al*.[7] The youngest patient in the primigravida group was 20 years of age and in the recurrent group was 23 years. The oldest patient in the primigravida group was 32 years of age and in recurrent group was 37 years[7].

52.5% of patients among primigravida developed hypertension between 33-36 weeks of gestation. 45% of patients among recurrent group developed hypertension between 33-36 weeks. Also the percentage of women who developed hypertension in the recurrent group during 24-28 weeks of gestation was 35% as compared to 5% in the primigravida group. This indicates that women with disease in the index pregnancy are at an increased risk for disease in subsequent pregnancy and they develop the disease at an earlier gestational age leading to increases maternal and perinatal morbidity. These observations correlate with those in a previous study by Hnat *et al*.[8].

72.5% of primigravida group delivered after 37 weeks as compared to 50% of recurrent group. 7.5% of recurrent group delivered before 35 weeks of gestation where as it was 0% in primigravida. Hence when p-value were calculated for deliveries below 35 weeks and 37 weeks of gestation, women with recurrent disease had a significantly lower mean age at delivery as compared to primigravida. This was statistically significant. Hence women with recurrent disease had a significantly lower gestational age at delivery as compared to primigravida with disease.

Among primigravida group 27 cases were induced with prostaglandins or Oxytocin, the main indication for induction being completion on 37 weeks. 3 cases went into spontaneous labor. Ten cases were delivered by LSCS without prior induction, the indications being fetal distress, abnormal Doppler indices or severe IUGR with oligamnios. 35% of all the cases in primigravida group delivered vaginally the remaining 65% were delivered by abdominal route (LSCS). There was one case of outlet forceps delivery in this group, the indication being failure of bearing effort. There was one case of stillbirth in primigravida group due severe IUGR, fetal hypoxia and oligamnios which was delivered vaginally.

Among recurrent group 12 cases were induced. The main reason for induction in this group was the presence of fetal compromise as evidenced by severe IUGR with Oligohydramnios on ultrasound (9 cases). Spontaneous onset of labour was seen in 2 cases. These cases reported to hospital after the onset of preterm labour. 30% delivered vaginally and the remaining 70% were delivered by LSCS.

Fetal distress was the main indication for LSCS in both the groups of patients. It accounted for 53.8% of cases of LSCS in the primigravida group and 46.4% of cases of LSCS in the recurrent group. One patient underwent hysterectomy in the recurrent group due to adherent placenta and PPH. There were 2 maternal deaths in the recurrent group the reason being HELLP syndrome and DIC in one patient and postpartum cardiomyopathy in the second patient. Among cases of LSCS done for cephalopelvic disproportion in the primigravida, 3 cases also showed evidence of fetal heart rate decelaration.

CONCLUSION

- Mean age of incidence in primigravida group was 26.5 years and in recurrent group was 29.9 years
- Women with recurrent disease had earlier gestational age at onset of disease
- 72.5% of women in the primigravida group delivered beyond 37 weeks of gestation as compared to 50% in recurrent group.7.5% of women in recurrent group delivered before 28 weeks as compared to 0% in primigravida group.

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