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PREVALENCE OF HYPERTENSIVE DISORDERS IN PREGNANCY AND ITS OUTCOMES

Gynaecology

Dr Deepthy Balakrishnan* Assistant professor, Department of obstetrics and gynecology, Government Medical College, Trivandrum.*Corresponding Author

Dr Asha Sreedhar Junior resident, Department of obstetrics and gynecology, Government Medical College, Trivandrum

ABSTRACT

Aim- to estimate the prevalence of hypertensive disorders in pregnancy and to assess the maternal and fetal outcomes in women with hypertensive disorders. Materials and methods- All antenatal women attending OPD and all antenatal in patients were screened for hypertension during the period of 4 months from January to April 2014. All patients identified to have hypertensive disorders were identified and Outcome of pregnancies with hypertensive disorders was assessed. Results- In the period of 4 months, out of 3367 deliveries, 480 patients with hypertensive disorders were identified. The prevalence was 14.2 %. Associated gestational diabetes mellitus was seen in 22.5% hypertensive patients. Eclamptic seizures were seen in 2.3 % of cases. 1.5% hypertensive patients had abruption. 32.4 % had preterm deliveries, 35.4% had intrauterine growth restriction and 4 babies died in the neonatal period. Conclusion- As we are striving to achieve the sustainable development goal target of an MMR of 70 by 2030, emphasis must be given to early detection and prompt treatment of hypertension to prevent morbidity and mortality related to hypertensive disorders in pregnant women.

KEYWORDS

hypertensive disorders of pregnancy, prevalence, Outcome

Introduction

Hypertensive disorders complicate almost 10 % of all pregnant women in the world and remain an important cause of maternal and fetal morbidity and mortality (1, 2). It predisposes to 10-15% of maternal deaths particularly in developing countries (5). The overall prevalence of gestational hypertension and preeclampsia are estimated to be 1.8-4.4% and 0.2-9.2% respectively (7). A hospital based study conducted in India showed the prevalence of hypertensive disorders in this developing country was 7.8 %(4).The prevalence of maternal and fetal complications associated with hypertensive disorders of pregnancy vary by region and health care facility type (3). A pregnant woman is considered to be hypertensive if her blood pressure is greater than or equal to 140/90 mmHg on two consecutive measurements. It includes – Gestation hypertension, pre-eclampsia, eclampsia, pre-eclampsia super imposed on chronic hypertension, chronic hypertension.

This study was done to estimate the prevalence of hypertensive disorders in pregnancy and to assess the maternal and fetal outcomes in women with hypertensive disorders.

Materials and methods

Aim: - done to estimate the prevalence of hypertensive disorders in pregnancy and to assess the maternal and fetal outcomes in women with hypertensive disorders.

Study design: Hospital based prospective study

Study setting: - Department of obstetrics and gynecology, Sree Avittom Thirunal Hospital, Government Medical College, Trivandrum. Sree Avittom Thirunal hospital is the maternal and child facility attached to Government Medical College, Trivandrum, Kerala, India which is the major referral tertiary centre in southern part of Kerala. This facility conducts around 10000 deliveries annually.

Study population: - All antenatal women attending OPD and all antenatal in patients were screened for hypertension during the period of 4 months from January to April 2014. All patients identified to have hypertensive disorders were identified and managed according to the hospital protocol of management of hypertensive disorders. Fetal monitoring was also done using standard protocols. Outcome of pregnancies with hypertensive disorders were assessed.

During the study period, gestational hypertension was defined the denovo onset of hypertension(systolic blood pressure ≥ 140 mm of Hg and/ or diastolic blood pressure ≥ 90 mm of Hg)from 20 weeks gestation onwards and preeclampsia as denovo onset of hypertension from 20 weeks gestation onwards accompanied by proteinuria(6). Eclampsia was defined as occurrence of seizures in a woman with preeclampsia. Hypertension detected in the booking visit before 20 weeks of gestation or those who were hypertensive before pregnancy were classified as chronic hypertension.

Statistical analysis

The values of categorical variables were reported as absolute numbers and percentages. SPSS version 17 (SPSS Inc; Chicago, Illinois, USA) was used for all analysis.

Results

In the period of 4 months, out of 3367 deliveries, 480 patients with hypertensive disorders were identified. The prevalence was 14.2 %.Out of this, 287 (59.8%) women had gestational hypertension, 149(31%) had preeclampsia while 11(2.2%) women had eclampsia and 31(6.4%) women had chronic hypertension.

Distribution of the women with hypertensive disorders according to the socio demographic features

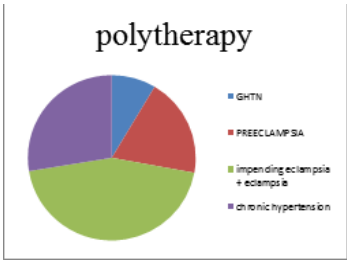
Age	GHTN N=287(%)	Preeclampsia N=138(%)	Impending eclampsia + Eclampsia N =24(%)	chronic HTN N=31(%)
<25	111(38.7)	60(43.5)	11(45.8)	18(58.1)
25-29	122(42.5)	60(43.5)	9(37.5)	8(25.8)
30-34	34 (11.8)	15(10.9)	4(16.7)	5(16.1)
>35	20 (7)	3(2.2)	0	0
Parity				
Primi	152(53)	78(56.5)	13(54.2)	8(25.8)
Multi	135(47)	60(43.5)	11(45.8)	23(74.2)
Socioeconomic status				
High	26(9.1)	2(1.4)	0	2(6.5)
Medium	175(61)	93(67.4)	15(62.5)	21(67.7)
Low	86(30)	43(31.2)	9(37.50	8(25.8)
Booking status				
Booked	224(78)	87(63)	11(45.8)	25(80.6)
Referred	63(22)	51(37)	13(54.2)	6(19.4)
Gestational age at which hypertension was detected				
≤28 weeks	42(14.6)	21(15.2)	6(25)	31(≤12 weeks -24)
28-32	92(32)	67(48.6)	10(41.6)	
32.1-36	100(34.8)	32(23.1)	8(33.3)	
>36	53(18.4)	18(13)	0	
Mode of delivery				
LSCS	100(34.8)	93(67.4)	20(83.3)	18(58)
Vaginal delivery	187(65.2)	45(32.6)	4(16.7)	13(41.9)
BMI				
19-24.9	16 (5.5)	15(10.8)	4(16.6)	1(3.2)
25-29.9	264(91.9)	115(83.3)	18(75)	28(90.3)
30-39.9	3(1%)	8(5.7)	0	1(3.2)
≥40	4(1.3)	0	2(8.3)	1(3.2)

41.7 % of the women with hypertensive disorders were less than 25 years, while only 4.8% were above 35 years. Maximum numbers of patients with gestational hypertension were in the older age group of 25- 29 years while most of the patients in impending eclampsia-eclampsia group and those patients with chronic hypertension

belonged to less than 25 years.

Majority of patients (52.3%) were primi gravidas and 67.7% belonged to middle socioeconomic status. Gestational hypertension, preeclampsia and eclampsia were more in primigravid women while chronic hypertension was more common in multigravid women. Patient was considered as booked if she had her booking visit in the first trimester in our hospital. 72.3 % of the hypertensive patients were booked in our hospital. The most prevalent hypertensive disorder was gestational hypertension (59.8 %) followed by preeclampsia (28.8%). Hypertensive disorders were found to be high in overweight women with a BMI of 25-29.9.

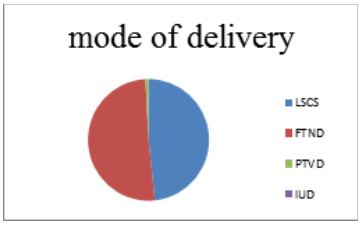
27.5 % of the women were on more than one drug for treatment of hypertensive disorders. 72.5 % of the hypertensive women required only methyl dopa for control of hypertension.



Associated gestational diabetes mellitus was seen in 108 (22.5%) hypertensive patients. As none of the patients with hypertension smoked, association with hypertension could not be assessed.

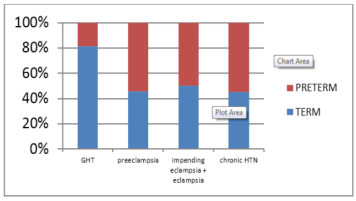
Maternal outcome

Maternal outcomes included an increase in seizures. Eclamptic seizures were seen in 11 (2.3 %) of cases. 7(1.5%) hypertensive patients had abruption. There was no maternal death in the study group. Around 48.1 % of hypertensive women were delivered through LSCS whereas around 60.8 % were vaginal deliveries. Out of the vaginal deliveries, there were 0.8 % preterm deliveries and 0.4 % IUD expulsions.

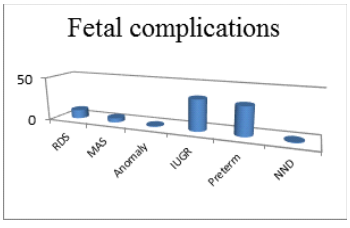


Fetal outcomes

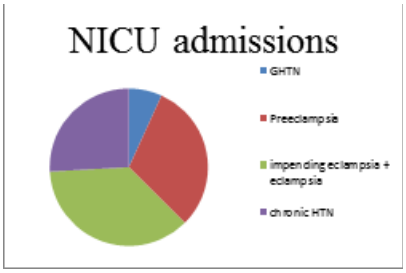
Only 2 patients with hypertensive disorders had intrauterine death of the fetus. Among 480 cases, 156 patients (32.4 %) had preterm deliveries. Women with chronic hypertension and preeclampsia had the maximum number of preterm deliveries.



245 babies suffered from one or other complications. Among the 245 babies, 48(10%) babies had respiratory distress syndrome, 23 had Meconium aspiration syndrome, 170 (35.4%) had intrauterine growth restriction and 4 babies died in the neonatal period.



24.2 % of babies born to women with hypertensive disorders with apgar scores <7 at 5 minutes had neonatal ICU admissions.54.5 % of babies born to mothers with impending eclampsia-eclampsia and 45.7 % of the babies born to mothers with chronic hypertension required admission to neonatal ICU.



4 neonatal deaths occurred in women who had very preterm delivery resulting in very low birth weight and respiratory distress.

Discussion

Hypertensive disorders of pregnancy are one of the major causes of maternal and fetal morbidity and mortality (4).The prevalence in the study conducted in our hospital was 14.2% which was high when compared to several previous studies with estimates of 1.5-7.5 %.(4,7,9). As our hospital is the major referral unit in the southern part of Kerala, most of our patients are those who have either referred or come as self referral due to medical problems or complications in previous pregnancies. This may be the reason for a high prevalence in the institution. Differences in races and socioeconomic status must have contributed to the increase in the prevalence (4).

The most common hypertensive disorder was gestational hypertension (59.8 %), 28.8% had preeclampsia and 6.4 % had chronic hypertension. Preeclampsia was found to be more in other studies but gestational hypertension was found to be more in the present study (4, 7). The overall prevalence of gestational hypertension was 8.5 %, preeclampsia was 4.4 % and eclampsia was 0.3 % in our study. This was comparable to the studies conducted in India which showed a prevalence of 5.4 % and 0.6% respectively for preeclampsia and eclampsia (4). Another study showed the prevalence of gestational hypertension and preeclampsia to be 1.8-4.4% and 0.2-9.2% respectively (8). Chronic hypertension had a prevalence of 0.9% in this study while it was around 0.15-0.17 % in various studies (4).

Majority of the women with gestational hypertension were between 25-29 years who were older to the women with preeclampsia, severe preeclampsia and eclampsia. These were comparable to other studies (4, 7).

Gestational hypertension, preeclampsia and eclampsia were more in primigravid women while chronic hypertension was more common in multigravid women. This was similar to the study conducted in India while disagrees with another study conducted in Oman where incidence of preeclampsia was higher in multigravida women (1, 2). According to Hellmann, incidence of eclampsia in primis and multigravidas were in the proportion of 3:1(10). Gestational hypertension was mainly detected after 32 weeks of gestation while majority of cases of preeclampsia were identified between 28-32 weeks. This was comparable to the study conducted in India where the mean gestational age at presentation was 32.7 weeks (4).

Obesity increases the risk of both gestational diabetes and gestational hypertension (11, 12). In the present study, hypertensive disorders were found to be high in overweight women with a BMI of 25-29.9. No association was identified in a study conducted in Oman (7).Majority of the women were asymptomatic with only 24 women showing impending signs of eclampsia. This is in line with a previous report that preeclampsia is likely to be detected in antenatal clinics in asymptomatic women with hypertension (13).

The American College of Obstetrics and Gynecology Practice Bulletin recommends methyl dopa and labetalol as the first line agents for treating hypertensive disorders of pregnancy. Monotherapy and polytherapy are used in our hospital for management of hypertensive disorders. In the present study, polytherapy was given in 27.5 % 0f the patients. 83.3 % of the women in the eclamptic group and 36.2% of women with preeclampsia required polytherapy. In a study conducted

in India, 67.31% of the hypertensive women required more than one drug for treatment of hypertension (4).

Caesarean sections were more prevalent in patients with hypertensive disorders (14) .But in our study, hypertensive patients had more vaginal deliveries, but caesarean sections were found to be increased in preeclampsia, eclampsia and chronic hypertension. In the study conducted in Oman, the patients with gestational hypertension and preeclampsia had an increased caesarean rate (7).

There was no maternal mortality in our study group.

Prematurity is common complication of hypertensive disorders of pregnancy (15) with an estimated prevalence of 31.6 %(16). This was similar to the number of preterm deliveries in our institution. Women with chronic hypertension and preeclampsia had the maximum number of preterm deliveries which was similar to the results in another study (7). 24.2 % of babies born to women with hypertensive disorders with apgar scores <7 at 5 minutes had neonatal ICU admissions and 64.6% of the babies had weight appropriate for their gestational age. A similar study reported that 59% of women born to hypertensive women age appropriate weight and 66% had good Apgar scores (17).

This study was conducted in a tertiary care which is the major referral unit catering population in the southern part of the state of Kerala and also from the border districts of the neighboring states of Tamilnadu. Hence the prevalence rates may be high and being a monocentre study, it may not represent the Indian population.

Conclusions

The incidence of hypertensive disorders in pregnancy is high in India. Nulliparity, overweight and younger age groups were associated with increased severity of hypertension. Majority of the women with the condition are asymptomatic. As we are striving to achieve the sustainable development goal target of an MMR of 70 by 2030, emphasis must be given to early detection and prompt treatment of hypertension to prevent morbidity and mortality related to hypertensive disorders in pregnant women.

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