International Journal of Community Medicine and Public Health
Bharti et al. Int J Community Med Public Health. 2019 Oct;6(10):4267-4270
http://www.ijcmph.com
pISSN 2394-6032 | eISSN 2394-6040

DOI: http://dx.doi.org/10.18203/2394-6040.ijcmph20194478

Original Research Article

Perinatal outcome in hypertensive disorder of pregnancy in a rural community of Haryana

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Received: 14 March 2019
Revised: 04 September 2019
Accepted: 05 September 2019

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ABSTRACT

Background: Pregnancy in hypertension may complicate pregnancies with variable incidence among different settings. Pregnancies complicated with hypertensive disorders are associated with increased risk of adverse fetal, neonatal and maternal outcome including preterm birth, intrauterine growth retardation (IUGR), perinatal death etc. The present study was undertaken to study the perinatal outcome of hypertension in pregnancy in a rural block of Haryana.

Methods: This cross-sectional study was carried out in the all the 20 subcenters under Community Health Center, Chiri, Block Lakhanmajra. All the pregnant women registered at the particular subcenter at a point of time of visit were included in the study. Pregnancy outcome was followed-up by contacting the health worker of respective sub-center or mother. Information regarding stillbirth, abortion, maturity, birth weight, mode of delivery and early neonatal death was collected. Appropriate statistical tests were used for analysis.

Results: A total of 931 pregnant women were included in the present study. Prevalence of hypertension in pregnancy was found to be 6.9%. Hypertension in pregnancy is significantly associated with premature births still births (6.7% vs 1.4%; p=0.003), low birth weight (26.7% vs 4.9%; p=0.000) and early neonatal deaths (8.3% vs 2.8%; p=0.017).

Conclusions: Perinatal mortality is significantly high in mothers with hypertensive disorders. Early diagnosis and treatment through regular antenatal checkup is a key factor to prevent hypertensive disorders of pregnancy and its complications.

Keywords: Hypertension, Outcome, Pregnancy

INTRODUCTION

Pregnancy in hypertension may complicate pregnancies with variable incidence among different settings.[1] Following the hypertensive disorders during pregnancy, 12-22% of all pregnancies, have a tragic story.[2,3] Increased mortality and morbidity as a result of hypertension during pregnancy is not only a terror to the mother but also to the fetus.[4] Pregnancies complicated with hypertensive disorders are associated with increased risk of adverse fetal, neonatal and maternal outcome including preterm birth, intrauterine growth retardation (IUGR), perinatal death, antepartum hemorrhage, postpartum hemorrhage and maternal death.[5,6] No community based data was available to assess the outcome of hypertension in pregnancy, hence present study was undertaken with the objective to study the perinatal outcome in a rural block of Haryana.

METHODS

Study area and study period

This cross-sectional study was carried out during the period of July 2011 to June 2012 in all the 20 subcenters

under Community Health Center, Chiri (block Lakhanmajra), the rural field practice area of Department of Community Medicine, Post Graduate Institute of Medical Sciences, Rohtak. Ethical approval to conduct the study was taken from institution review board.

Study population

All the pregnant women registered at the particular subcenter at a point of time and those who gave informed written consent were included.

Data collection method

A pretested, semi-structured interview schedule (by principal investigator) was used for interviewing the study subjects. Prior to the first visit to each subcenter, the health worker was contacted and was asked to prepare a list of all pregnant women registered in the subcenter at that point of time.

Pregnancy outcome was followed-up by contacting the health worker of respective sub-center or mother. Information regarding still-birth, abortion, maturity, birth weight, mode of delivery and early neonatal death was collected.

Data analysis

Collected data were entered in the Excel spreadsheet and analysis was carried out using Statistical Package for Social Sciences (SPSS) version 20.0. Pearson's Chi-square test was used to evaluate differences between groups for categorized variables.

RESULTS

During the study period, a total of 1,104 antenatal women were registered at the subcenters. Out of them, 804 antenatal women attended the subcenters and 127 pregnant women were contacted and examined by home visit. One hundred and seventy-three pregnant women, who could not be contacted even after two home visits, were excluded from the study. Therefore, a total of 931 pregnant women were included in the present study. So, the overall response rate was 84.3% (931/1104).

A total of 64 study subjects were found to be hypertensive (BP ≥140 mm of Hg systolic and/or ≥90 diastolic). Thus, hypertension was found in 6.9% of pregnant women (Table 1).

Out of 931 pregnant women, 32 women had abortions {5 (7.8%) in hypertensive group and 27 (3.1%) in non-hypertensive group}. Remaining 899 pregnant women was followed for perinatal outcome.

Table 1: Distribution of study participants by presence of hypertension (n=931).

Category	No. of study participants
	N (%)
Hypertension	64 (6.9)
Non-hypertension	867 (93.1)

Twenty-two (2.3%) mothers had twin deliveries [1 (1.6%) in hypertensive group and 21 (2.4%) in non-hypertensive group].

Table 2: Association of hypertension in pregnancy with mode of delivery (n=899).

Mode of delivery	Hypertension	Non-hypertension	Total
	N (%)	N (%)	N (%)
Caesarian section	9 (15.3)	61 (7.3)	70 (7.8)
Normal vaginal delivery	50 (84.7)	779 (92.7)	829 (92.2)
Total	59 (100)	840 (100)	899 (100)

Chi-square value- 4.904, p=0.027.

Table 3: Association of hypertension in pregnancy with fetal outcome.

	Hypertension (n=60)	Non-hypertension (n=861)	Total (n=921)	Chi-square value	P value
	N (%)	N (%)	N (%)		
Preterm					
Yes	9 (15.0)	22 (2.6)	31 (3.4)	26.708	0.000
No	51 (85.0)	839 (97.4)	890 (96.6)		
Still birth					
Yes	4 (6.7)	12 (1.4)	16 (1.7)	9.136	0.003
No	56 (93.4)	849 (9.9)	905 (98.3)		
Early neonatal death				5.657	0.017
Yes	5 (8.3)	24 (2.8)	29 (3.1)		
No	55 (91.7)	837 (97.2)	892 (96.9)		

Continued.

	Hypertension (n=60)	Non-hypertension (n=861)	Total (n=921)	Chi-square value	P value
	N (%)	N (%)	N (%)		
Low birth weight					
Yes	16 (26.7)	42 (4.9)	58 (6.3)	45.127	0.000
No	44 (7.3)	819 (95.1)	863 (93.7)		

Deliveries by caesarian section were significantly higher among hypertensive women as compared to non-hypertensive women (15.3% vs 7.3%, p=0.027) (Table 2).

Hypertension in pregnancy is significantly associated with premature births (15% vs 2.6%, p=0.000), still births (6.7% vs 1.4%, p=0.003) and early neonatal deaths (8.3% vs 2.8%, p=0.017) as compared to non-hypertensive women (Table 3).

Table 3 also shows that the prevalence of LBW was 6.3% (58/931) in the study population. Also, prevalence of LBW was significantly higher in hypertensive women (26.7%) as compared to non-hypertensive women (4.9%) (p=0.000).

DISCUSSION

Over the study period of one year from July 2011 to June 2012, 931 registered pregnancies were screened for hypertension. Then perinatal outcome of pregnancy was followed-up by contacting the health worker of respective sub-center or mother. The prevalence of hypertension during pregnancy was found to be 6.9% in this study.[7]

In our study operative delivery was significantly higher among hypertensive women as compare to non-hypertensive women (15.3% vs 7.3%, p=0.027). Hypertension in pregnancy is significantly associated with premature births (15% vs 2.6%, p=0.000), still births (6.7% vs 1.4%, p=0.003), low birth weight (26.7% vs 4.9%; p=0.000) and early neonatal deaths (8.3% vs 2.8%, p=0.017) as compared to non-hypertensive women. Similarly, Nirmalan et al reported significant association between hypertension in pregnancy and operative delivery (p<0.001) and also with preterm delivery (p<0.001), stillbirth (p<0.001), low birth weight (p<0.001) and neonatal death (p=0.06).[8] Other studies conducted by various authors in India also reported similar findings.[9-12] A hospital based study conducted by Nisar et al in Pakistan identified operative delivery was significantly higher among hypertensive (66.7% vs 21.0%) as compared to non-hypertensive (p=0.001).[13] This study also reported statistically significant difference between hypertensive and non-hypertensive groups for mean gestational age (p<0.001), mean birth weight of baby (p<0.001), preterm birth (p<0.001), still born (p<0.001), and neonatal death (p<0.001).

In our study, the perinatal mortality was found to be higher among babies born to hypertensive mothers (150/1000 live births) as compared to babies born to non-hypertensive mothers (42/1000 live births). In accordance with our study, Nadkarni et al.[10] Perinatal mortality rate was higher in hypertensive group (159/1000 births) as opposed to non-hypertensive group (30/1000 births). Nisar et al also reported higher perinatal mortality in hypertensive group (230/1000 births) as compare to in non-hypertensive group (40/1000 live births).[13]

CONCLUSION

Hypertensive disorder of pregnancy is significantly associated with increased risk of adverse maternal and perinatal outcome. The various complications seen are still birth, prematurity, low birth weight and early neonatal deaths. Perinatal mortality is significantly high in mothers with hypertensive disorders. There is room for improvement in ensuring that women at risk of a poor outcome deliver in hospitals where the most appropriate level of care can be provided. Early diagnosis and treatment through regular antenatal checkup 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.

Funding: No funding sources
Conflict of interest: None declared
Ethical approval: The study was approved by the Institutional Ethics Committee

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Cite this article as: Bharti, Chawla S. Perinatal outcome in hypertensive disorder of pregnancy in a rural community of Haryana. Int J Community Med Public Health 2019;6:4267-70.