International Journal of Advances in Medicine
Gandhi MR et al. Int J Adv Med. 2015 May;2(2):152-155
http://www.ijmedicine.com
pISSN 2349-3925 | eISSN 2349-3933
DOI: 10.5455/2349-3933.ijam20150515

Research Article

Perinatal outcome in pregnancy induced hypertension cases at GMERS Medical College, Dharpur-Patan, North Gujarat region, India: a prospective study

Mayur R. Gandhi[1], Parul S. Jani[1], Uday M. Patel[1], C. R. Kakani[1], Nilesh C. Thakor[2]*, Nidhi Gupta[3]

[1]Department of Obstetrics and Gynecology, GMERS Medical College, Dharpur-Patan-384265, Gujarat, India
[2]Department of Community Medicine, GMERS Medical College, Dharpur-Patan-384265, Gujarat, India
[3]District Child Survival Officer, UNICEF, Dahod, Gujarat, India

Received: 21 March 2015
Revised: 31 March 2015
Accepted: 21 April 2015

***Correspondence:**
Dr. Nilesh C. Thakor,
E-mail: drnileshthakor@yahoo.co.in

ABSTRACT

Background: Pregnancy Induced Hypertension (PIH) is one of the common conditions of unknown etiology which increases risk of maternal and perinatal morbidity and mortality. Objectives: To study the maternal and perinatal outcome in pregnancy induced hypertension.
Methods: A prospective study was carried out from February 2014 to January 2015 in the Department of obstetrics and gynecology of GMERS medical college and hospital, Dharpur-Patan, North Gujarat, India. A total of 95 pregnant women with PIH were enrolled in the study. A pre-tested interview tool was used to collect necessary information such as detailed history, clinical examination findings and investigations performed. Results were analyzed using SPSS 17.0 (Trial Version).
Results: In the present study, the overall incidence of PIH was 12.8%, which includes preeclampsia in 11.4% and eclampsia in 1.4%. Out of total 95 cases, 69 (72.6%) were emergency cases. 72 (75.7%) cases were from rural area. The most common symptoms were labour pains (48.4%) followed by eclampsia (11.5%). 51 (53.7%) women delivered normally. Eclampsia was the commonest maternal complication affecting 11.6% of cases. Out of total 95 births, perinatal deaths were occurred in 22 (23.15%) cases. Out of 22 perinatal deaths, 13 (61.2%) were still births and 9 (42.8%) were neonatal deaths.
Conclusions: Pregnancy induced hypertension is a common medical disorder seen associated with pregnancy especially among young primigravidas, who remain unregistered during pregnancy. Maternal and fetal morbidity and mortality can be reduced by early recognition and institutional management.

Keywords: PIH, Preeclampsia, Eclamsia, Perinatal mortality, LBW

INTRODUCTION

Pregnancy is a physiological phenomenon for most women. However, some develop problems during its evolution, putting both the mother's and the conceptus' health at sake. Pregnancy-induced hypertension is one of the maternal diseases that cause the most detrimental effects to the maternal, fetal, and neonatal organisms. Pregnancy-induced hypertension is the general classification for hypertension diseases during pregnancy, which include pregnancy-induced hypertension (without proteinuria), preeclampsia (with proteinuria), and

eclampsia (preeclampsia with convulsions). This disease is responsible for high maternal and perinatal morbidity and mortality rates, and is one of the main public health problems.[1,2]

In developing countries they rank second only to anaemia with approximately 7-10% of all pregnancies complicated by some form of hypertensive disorder.[3] In India incidence of pregnancy induced hypertension as recorded from hospital statistics vary widely from 5-15%.[4]

Most deaths in PIH occur due to its complications and not due to hypertension per se. Thus, we can reduce the maternal mortality by prevention and proper management of these complications. Hence, the present study was conducted to find out the incidence, high risk factors, and the maternal and perinatal outcome associated with PIH.

METHODS

A prospective randomized study was carried out for a period one year from February 2014 to January 2015 in the department of obstetrics and gynecology of GMERS medical college and hospital, Dharpur-Patan, North Gujarat, India. A consecutive 95 pregnant women including, both booked and unbooked, who presented to hospital with pregnancy induced hypertension during the study period, were enrolled for the study.

Inclusion criteria: 1) Preeclampsia was diagnosed, when there was hypertension (BP ≥140/90 mmHg) with proteinuria and 2) Eclampsia was diagnosed, when preeclampsia occurred along with convulsions.

Exclusion criteria: 1) Gestational hypertension [Hypertension (BP ≥140/90 mmHg) without proteinuria]. 2) Superimposed preeclampsia (on chronic hypertension) [New onset proteinuria in hypertensive women but no proteinuria before 20 weeks gestation]. 3) Chronic hypertension (BP ≥140/90 mmHg before pregnancy or diagnosed before 20 weeks not attributable to gestational trophoblastic disease). 4) Patients who were diagnosed with other causes of convulsions in pregnancy like cerebral malaria and epilepsy were excluded from study.

On admission, a detailed history was taken; thorough clinical examination and relevant laboratory investigations were performed. Informed consent of each pregnant woman was taken. The ethics committee of the institute approved the study.

Statistical analysis: Data was entered in MS Excel and analyzed using trial version of Statistical Package of Social Sciences (SPSS) 17.0 (Trial Version). Statistical significance was set at $P \leq 0.05$.

RESULTS

A total of 738 patients were admitted for deliveries during this period from February 2013 to January 2014. Out of 738 patients 95 patients were diagnosed as having Pregnancy Induced Hypertension (PIH). The overall incidence of PIH was 12.8%, which includes preeclampsia in 11.4% of cases and eclampsia in 1.4% of cases. Out of 95 patients, 23 (24.2%) had severe PIH.

Basic demographic and obstetrical data of the patients are shown in Table 1. Out of 95, 69 (72.6%) were emergency cases. 72 (75.7%) cases were from rural area. Main presenting features of cases are documented in Table 2. The most common symptoms in cases were labour pains followed by eclampsia. Out of 95 women, 51 (53.7%) women delivered normally. It was evident from Table 3 that, eclampsia was the commonest maternal complication affecting 11 (11.6%) cases out of 95. Abruptio placentae (5.26%), Post-Partum Hemorrhage (PPH) (5.26%) and HELLP syndrome (5.26%) were the next common complications affecting 15.78% of the women. The results regarding the perinatal conditions showed a prevalence of 76.8 % of live births. Out of total 95 births, perinatal deaths were occurred in 22 (23.15%) cases. Out of 22 perinatal deaths, 13 (61.2%) were still births and 9 (42.8%) were neonatal deaths. Out of total 738 births, 21 (2.84%) were still births in our institute and out of 21 still births, 13 (61.9%) still births were occurred in 95 PIH cases.

Table 1: Basic demographic data.

Variables	Ranges	No. of cases (n=95)	Percentage
Age groups (years)	<20	11	11.57
	21-25	46	48.42
	26-30	14	14.73
	>30	24	25.26
Parity	Primi	41	43.15
	Second	27	28.42
	Multi	27	28.42
Gestational age (weeks)	<28	10	10.6
	28-36	28	29.4
	>36	57	60.0

Table 2: Distribution of patients according to their presenting clinical features.

Clinical features presentation	No. of cases (n=95)	Percentage
Labour pains	46	48.4
Convulsions	11	11.6
No complaints	10	10.5
Edema feet	9	9.5
Headache	6	6.3
Bleeding per vagina	6	6.3
Visual complaints	3	3.2
Loss of fetal movement	3	3.2
Vomiting	1	1.1

Table 3: Distribution of patients according to their complications.

Complication	No. of patients (n=95)	Percentages
Eclampsia	11	11.57%
HELLP syndrome	5	5.26%
Abruptio Placenta	5	5.26%
Post-partum hemorrhage	5	5.26%
Disseminated intravascular coagulation	2	2.10%
Acute renal failure	1	1.05%
No Complication	66	69.47%

Neonatal variables were given in Table 4. Low birth weight (<2.5 kg) was seen in 67.3% of cases. 77.3 % perinatal mortality was observed in Low Birth Weight babies. 35.9% perinatal mortality was observed in normal delivery. 40.9% perinatal mortality was observed in preterm babies. Neonatal intensive care unit admissions were seen in 28 (29.4%) cases. It was evident from table: 4 that mode of delivery, gestational age and perinatal mortality was significantly associated. Perinatal mortality rate increased as severity of PIH increased (Table 5).

Table 4: Neonatal variables.

Variables	Ranges	No. of cases (n=95)	Perinatral mortality (n=22)	P value
Mode of delivery	Caesarean Section	44 (46.3)	4 (18.2)	0.0031
	Normal delivery	51 (53.4)	18 (81.8)	
Gestational age (weeks)	<28	10 (10.6)	9 (40.9)	0.0001
	28-36	28 (28.4)	8 (36.4)	
	>36	57 (60.0)	5 (22.7)	
Birth weight (kg)	<2.5	64 (67.3)	17 (77.3)	0.3
	≥2.5	31 (32.7)	5 (22.7)	

Table 5: Degrees of PIH and perinatal mortality.

Degrees of PIH	No. of cases (n=95)	Maturity	No. of cases (n=95)	Perinatal mortality (n=22)	%
Mild	61	Pre term	13	2	15.3
		Full term	48	2	4.1
Severe	23	Pre term	9	7	77.7
		Full term	14	4	28.5
Eclampsia	11	Pre term	6	6	100
		Full term	5	1	20

DISCUSSION

In the present study, the overall incidence of PIH was 12.8 %, which includes preeclampsia (mild as well as severe PIH) in 11.4% and eclampsia in 1.4%. Similarly study by Bhattacharya S.[5] had reported the overall incidence of PIH to be 15.5% and Shalini K et al.[6] had reported the incidence of preeclampsia and eclampsia to be 7-10% and 0.5 to 1.8% respectively. In the present study, out of 95 cases of PIH, majority 72.6 % cases were unbooked. Out of these, 74.35% of mild PIH, 80.95% of severe PIH and 89.47% of eclampsia cases and had not received any kind of antenatal care during the entire pregnancy. Studies by Sudarsan S. et al.[7] and Tukur et al.[8] had also reported similar findings.

The present study revealed that, PIH was more common among primigravidas and constituted 43.15 % of the total cases. Study by Bhattacharya S.[5] reported that 65.6% cases were primigravidas. Jose Villar et al.[9] and Duckitt et al.[10] also reported that primigravida was a risk factor for preeclampsia and eclampsia. In the present study, the incidence of PIH and eclampsia was 11.5% in the age group of 15-20 years and higher (48.4%) in the age group of 21-25 years. Audrey et al.[11] concluded that maternal age less than 20 years was the strongest risk factor for both preeclampsia and eclampsia. Jiménez et al.[12] concluded that eclampsia was more common (54.5%) in less than 19 years of age. Sudarsan S. et al.[7] concluded that eclampsia involves young primigravidas and 87.6% of eclamptic patients were below 25 years of age in his study. Duckitt et al.[10] observed teenage pregnancy to be one of the risk factors for PIH and eclampsia. In the present study, rate of caesarean delivery and vaginal delivery were 46.3% and 53.7% respectively. Similar studies by Oladokun A et al.,[13] Miguil M et al.[14] and Dissanayake VH et al.[15] revealed caesarean section rates as 60%, 71% and 78% respectively. Al-Mulhim AA.[16] observed that the deliveries were more likely to be induced (22.8%) or be performed by caesarean section (14.9%). In the present study, eclampsia was the commonest maternal complication affecting 11 (11.6%) cases out of 95. Abruptio placentae (5.26%), Post-Partum Hemorrhage (PPH) (5.26%) and HELLP syndrome (5.26%) were the next common complications affecting 15.78% of the women. One (1.05%) case had renal failure and required dialysis. Similar study by Farid M et al.[17] reported that in the entire cohort of women with eclampsia, major maternal complications included abruptio placentae (10 percent), HELLP syndrome (11percent), disseminated intravascular coagulopathy (6 percent), neurological deficits and aspiration pneumonia (7 percent), pulmonary oedema (5 percent), cardiopulmonary arrest (4 percent), acute renal failure (4 percent) and death (1 percent). Al-Mulhim AA et al.[14] stated that placental abruption was the most common maternal complication (12.6%) in women with preeclampsia, followed by oliguria (7.9%), coagulopathy (6.0%), and renal failure (4.1%). In a descriptive study by Igberase GO et al.[18] most of the deaths (89.5%) were in unbooked women and the most common causes of death were acute renal failure, cardiopulmonary failure, disseminated intravascular coagulopathy and cerebrovascular accident. In the present study, prematurity was the commonest fetal complication seen. In the study by Shaheen et al.[19] perinatal mortality was

41.6 percent and prematurity was the main risk factor. Kapoor et al.[20] concluded that, the incidence of premature babies was 23 percent and prematurity was one of the major risk factors for increasing the perinatal mortality.

CONCLUSION

Pregnancy Induced hypertension is largely a preventable condition and is responsible for high morbidity and mortality. Perinatal mortality rate increases as the severity of PIH increases. The causes for high perinatal mortality are mainly prematurity and low birth weight. The adverse maternal and perinatal outcome can be improved by early registration, health education of couple, regular antenatal checkups, early identification of hypertension, and timely referral to tertiary care hospital, timely decision regarding mode of delivery and availability of specialist care during labour and after birth.

Funding: No funding sources
Conflict of interest: None declared
Ethical approval: The study was approved by the institutional ethics committee

REFERENCES

1. Chen XK, Wen SW, Smith G, Yang Q, Walker M. Pregnancy-induced hypertension is associated with lower infant mortality in preterm singletons. BJOG. 2006;113(5):544-51.
2. Brown MA, Hague WM, Higgins J, Lowe S, McCowan L, Oats J, et al. Australasian Society of the Study of Hypertension in Pregnancy. The detection, investigation and management of hypertension in pregnancy: full consensus statement. Aust N Z J Obstet Gynaecol. 2000;40(2):139-55.
3. Barrilleaux PS, Martin JN. Hypertensive therapy during pregnancy. Clin Obstet Gynecol. 2002;45(1):22-34.
4. Dutta DC. Hypertensive disorders in pregnancy. In: Dutta DC, eds. Text book of Obstetrics Including Perinatology and Contraception. 6th ed. Calcutta: New Central Book Agency; 2004: 221-242.
5. Bhattacharya Sudhindra Mohan. Pregnancy induced hypertension and prior trophoblastic exposure. J Obstet Gynecol India. 2004;54(6):568-70.
6. Shalini K, Ruchi Sehgal. Management of obstetric hypertensive crisis. Obstet Gynaecol Today. 2007;12:450-2.
7. Sudarsan Saha, Samir Ghosh Roy, R. P. Ganguly, A. Das. Comparative study on the efficacy of magnesium sulphate and diazepam in the management of eclampsia in a peripheral rural medical college (A cross over study of 440 cases). J Obstet Gynecol India. 2002;52(3):69-72.
8. Tukur J, Umar BA, Rabi'u A. Pattern of eclampsia in a tertiary health facility situated in a semi-rural town in Northern Nigeria. Ann Afr Med. 2007 Dec;6(4):164-7.
9. Villar J, Carroli G, Wojdyla D, Abalos E, Giordano D, Ba'aqeel H, et al. Preeclampsia, gestational hypertension and intrauterine growth restriction, related or independent conditions? Am J Obstet Gynecol. 2006;194:921-31.
10. Duckitt K, Harrington D. Risk factors for preeclampsia at antenatal booking: systematic review of controlled studies. BMJ. 2005;330:565-77.
11. Audrey F. Sastlas, David R. Olson, Adele L. Franks, Hani K. Atrash, Robert Pokras. Epedimiology of preeclampsia and eclampsia in the United States, 1979-1986. Am J Obstet Gynecol. 1990;163:460-5.
12. Jiménez R, Cazenave H, Perucca E, Pavez A, Loyola E. Eclampsia at the Rancagua regional hospital. Rev Chil Obstet Ginecol. 1992;57(2):67-71.
13. Oladokun A, Okewole AI, Adewole IF, Babarinsa IA. Evaluation of cases of eclampsia in the University college hospital, Ibadan over a 10 year period. West Afr J Med. 2000;19(3):192-4.
14. Miguil M, Chekairi A. Eclampsia, Study of 342 cases. Hypertens Pregnancy. 2008;27(2):103-11.
15. Dissanayake VH, Samarasinghe HD, Morgan L, Jayasekara RW, Seneviratne HR, Pipkin FB. Morbidity and mortality associated with preeclampsia at two tertiary care hospitals in Sri Lanka. J Obstet Gynaecol Res. 2007;33(1):56-62.
16. Al-Mulhim AA, Abu-Heija A, Al-Jamma F, El-Harith el-HA. Preeclampsia: maternal risk factors and perinatal outcome. Fetal Diagn Ther. 2003;18(4):275-80.
17. Farid Mattar, Baha M. Sibai. Risk factors for maternal morbidity. Am J Obstet Gynecol. 2000;182:307-12.
18. Igberase GO, Ebeigbe PN. Eclampsia: ten-years of experience in a rural tertiary hospital in the Niger delta, Nigeria. J Obstet Gynaecol. 2006;26(5):414-7.
19. Shaheen B, Hassan L, Obaid M. Eclampsia, a major cause of maternal and perinatal mortality: a prospective analysis at a tertiary care hospital of Peshawar. J Pak Med Assoc. 2003;53(8):346-50.
20. Kapoor M, Agrawal N, Jain PK, Sethi RS, Gupta U, Goyal Latika. Perinatal outcome in hypertensive disorders in pregnancy. J Obstet Gynecol India. 1991;41:162-5.

DOI: 10.5455/2349-3933.ijam20150515
Cite this article as: Gandhi MR, Jani PS, Patel UM, Kakani CR, Thakor NC, Gupta N. Perinatal outcome in pregnancy induced hypertension cases at GMERS Medical College, Dharpur-Patan, North Gujarat region, India: a prospective study. Int J Adv Med 2015;2:152-5.