

DOI: <http://dx.doi.org/10.18203/2320-1770.ijrcog20203066>

Original Research Article

A study of hypertensive disorders of pregnancy and the fetal outcome in a tertiary care hospital: a prospective study

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Received: 29 June 2020

Accepted: 03 July 2020

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ABSTRACT

Background: Pregnancy induced hypertension is one of the major causes of foeto maternal morbidity and mortality in pregnancy. The exact cause of PIH is unknown certain factors are known to increase the risk of PIH such as risk factor includes that young women with first pregnancy.

Methods: The objective of this study was to assess the socio-demographic and clinico-pathological profile of the patients with hypertensive disorders of pregnancy and its associated fetal outcomes. A prospective study was conducted in department of obstetrics and gynecology Shri B. M. Patil Medical College, Hospital and Research Centre, BLDE (Deemed to be University), Vijayapura Karnataka from 15th July to 15th December 2018. All women admitted to labour ward with diagnosis of hypertensive disorders of pregnancy were included in the study after ruling out the exclusion criteria and thorough history, examination and laboratory evaluation were done and followed till delivery.

Results: A total of 123 pregnant women with hypertensive disorder of pregnancy were enrolled in the study. Most of the participants were in the age group of 20 to 30 years. The PIH was seen mostly in primigravida, lower socioeconomic status and with lower educational levels. Emergency LSCS is the most common mode of delivery.

Conclusions: The hypertensive disorder in pregnancy affects the majorly younger age group. It is most commonly seen in low socio-economic and uneducated population. Hence, there should be provided with proper antenatal care, early detection of hypertensive disorders for better foeto-maternal outcome.

Keywords: Pregnancy, Educational status, Foetal outcome, Pregnancy induced hypertension, Socio-economic status

INTRODUCTION

Pregnancy is a physiological phenomenon for most women. However, some develop problems during its evolution, putting both the mothers and the foetus health at stake.¹ Pregnancy induced hypertension (PIH) is one of the major causes of maternal morbidity and mortality leading to 10-15% of maternal deaths, especially in developing world.² As a result, an estimated 76,000 maternal and 500,000 foetal/new born deaths occur each year with more than 10 million pregnancy complications.³ The vast majority of deaths occur in low

and middle-income countries (LMICs), particularly in South Asia and Sub-Saharan Africa, due to deficiencies in early identification, triage, transport, and treatment, including provider competence, availability of basic supplies, and flawed care processes. Although the cause of PIH is unknown certain factors are known to increase the risk of PIH such as risk factor includes that young women with first pregnancy, pregnant women younger than 20 years and older than 40 years of age, having diabetes, pre-existing hypertension, previous episode of PIH etc. Pregnancies complicated with hypertensive disorders are associated with increased risk of adverse

foetal outcome including preterm birth, intrauterine growth retardation (IUGR), perinatal death, and maternal complications like ante partum haemorrhage, postpartum haemorrhage and maternal death.⁴

METHODS

In the view of above discussion, the objective of this study was to assess the socio-demographic profile, clinico-pathological profile of the patients having hypertensive disorders of pregnancy and its associated fetal outcomes.

The study was conducted in department of obstetrics and gynecology Shri B. M. Patil Medical College, Hospital and Research Centre, BLDE (Deemed to be University), Vijayapura Karnataka. It was a prospective study. The study was conducted from 15th July to 15th December 2018. All women admitted to labour ward of department of obstetrics and gynecology with diagnosis of hypertensive disorders of pregnancy were included in the study. The patients with history of previous caesarean section and with other associated medical disorders like anaemia, chronic hypertension, thyroid disorders, gestational diabetes etc., were excluded from the study.

All the patients included in study after taking the informed consent were subjected to complete obstetric and medical history, clinical examination and laboratory evaluation. The subjects were provided with appropriate obstetric medical care and followed till delivery. The fetal outcomes were recorded and the data was analysed.

RESULTS

In this study a total of 123 participants were enrolled after considering the inclusion and exclusion criteria. Most of the patients were in the age group of 20-30 years (83.7%) (Table 1).

Table 1: Distribution of age.

Age	No. of patients	Percentage
<20	7	5.6%
20-30	103	83.7%
30-40	13	10.5%
>40	1	0.8%

Table 2: Education of the participants.

Education	No. of patients	Percentage
Illiterate	6	4.9%
Primary	21	17%
High school	70	56.9%
College	26	21.1%

Maximum participants had education up to high school (56.9%) (Table 2). Most of the participants belonged to socioeconomic class 4 (45.5%) followed by class 3

(41.5%). The participants presented most commonly at term (52%) followed by in gestational age of 33 to 37 weeks (43%) (Table 3).

Table 3: Distribution according participants according to gestational age.

Gestational age in weeks	No. of patients	Percentage
Less than 28	1	0.8%
28-32	4	3.2%
33-37	53	43%
38-41	64	52%
>41	1	0.8%

Table 4: Distribution according to the type of PIH.

Category	No. of patients	Percentage
Eclampsia	50	40.6%
Pre-eclampsia	30	24.4%
GHTN	34	27.7%
HELLP syndrome	9	7.3%

Imminent signs of convulsions were the most common presentation at admission (60.8%), which includes headache, blurring of vision, nausea and vomiting. Most of the participants were primigravida (73%) eclampsia was the most common type of PIH among the participants (Table 4). Authors found no significant abnormality in the laboratory parameters in patients with PIH, which includes Hb levels, WBC count, platelet counts, Urine albumin, SGOT, SGPT levels, total bilirubin, total S. Proteins, S. Albumin, Serum uric acid and serum creatinine levels.

Table 5: Mode of delivery.

Mode of delivery	No. of patients	Percentage
Emergency LSCS	90	73.1%
Elective LSCS	15	12.1%
Vaginal delivery	17	13.8%
VBAC	1	0.8%

Table 6: Distribution according to birth weight of the babies.

Birth weight	No. of patients	Percentage
Normal (2.5-3.5)	59	47.9%
LBW (1.5-2.5)	57	46.3%
VLBW (1-1.5)	5	4.1%
ELBW (less than 1)	2	1.63%

Emergency LSCS was the most common mode of delivery among the participants (73.1%) (Table 5). Most of the babies born were of the normal weight (47.9%) followed by low birth weight (46.3%) (Table 6). The NICU admission was seen in 29.2% of the participants and 9% of the babies were intrauterine deaths.

DISCUSSION

This study has been conducted in a tertiary care teaching hospital and 123 participants were enrolled. In this study most of the participants were in the age group of 20 to 30 years (83.7%), similar to this study the study done by Khosravi et al, shows the PIH was most commonly seen in the age group of 21 to 30 years (55.6%), in the study by Gandhi et al, the participants were in mostly in the age group of 21 to 25 years (48.42%) whereas the study by Parmar et al, had PIH patients mostly aged less than 20 years.⁵⁻⁷ In a study by Patel R et al PIH was seen mostly in the age group of 18 to 22 years.⁸

In this study PIH was seen in patients with education up to high school (56.9%) similarly in a study done by Youssef AA et al, the preeclampsia was seen more commonly and sever form in low education status.⁹

In this study most of the patients belonged to low socio economic status-class 4 (45.5%) similarly study done by Youssef AA et al, showed the prevalence of PIH was more common in patients with very low socioeconomic status (52.9%) where as in the study done by Parmar et al 751% of the patients with PIH belonged to low socioeconomic status.⁹

This study observed that the patients of PIH were mainly primigravida (73%) which is similar to study done by Youssef AA et al, which showed PIH the incidence was seen mainly in primigravida (67.6%) and study done by Parmar et al which shows that the incidence is more common in primigravida (55%).^{7,9} In contrast this study observations studies done by Gandhi et al (56.84%) Khosravi et al (67.2%) reported the incidence of PIH being more common in multi gravida.^{5,6}

In this study, the participants were mainly presented at term (38-41 weeks of gestation; 52%). In other studies, by Gandhi et al most of participants were >36 weeks of gestation (60%), Khosravi et al showed that the most commonest gestational age was 32-36 weeks (57.4%), Alaa el-deen et al study states that 39.4% of participants were in the ≥ 36 weeks of gestation.^{4,5,6,9}

Out of 123 patients in this study, 50 cases (40.6%) presented with features of eclampsia. A study by Gandhi et al only 12% of the patients had eclampsia and another study by Singh V et al, showed an incidence of 14.3% of eclampsia showed lower incidence than this study.^{6,10}

In the present study, 105 of 123 patients underwent LSCS, 17 had vaginal delivery and 1 had VBAC. In a study by Gandhi et al rate of caesarean was 46.3% and vaginal delivery was 53.4% among the PIH patients.⁶ In a study by Parmar et al 63% had vaginal delivery and 37% underwent caesarean section.⁷

In this study, most of the babies born were of the normal weight (47.9%) followed by low birth weight (46.3%).

The NICU admission was seen in 29.2% of the participants and 9% of the babies were intrauterine deaths. A study by Patel R et al, out of 64 delivery 18.75% of babies were required NICU admission for various causes with 1.56% were IUFD and 1.56% of neonatal death.⁸ A study by Khosravi S et al had 9 cases of IUFD and/or neonatal deaths, all of which took place in hypertensive mothers who had proteinuria.⁵

CONCLUSION

The hypertensive disorder in pregnancy affects the majorly younger age group with deleterious effects on feto-maternal health. It is most commonly seen in low socio-economic and uneducated population. Hence, there should be provided with proper antenatal care, early detection of hypertensive disorders for better feto-maternal outcome.

Funding: No funding sources

Conflict of interest: None declared

Ethical approval: The study was approved by the Institutional Ethics Committee

REFERENCES

1. Chaim SRP, Oliveira SMJV, Kimura AF. Pregnancy-induced hypertension and the neonatal outcome. *Acta Paul Enferm.* 2008;21(1):53-8.
2. Vigil-De Gracia P, Montufar-Rueda C. Expectant management of severe preeclampsia and preeclampsia superimposed on chronic hypertension between 24 and 34 weeks' gestation. *Ruiz J Eur J Obstet Gynecol Reprod Biol.* 2003;107(1):24-7.
3. Kuklina EV, Ayala C, Callaghan WM. Hypertensive disorders and severe obstetric morbidity in the United States. *Obstet Gynecol.* 2009;113(6):1299-306.
4. National high blood pressure education program working group. Report of the National high blood pressure education program working group on high blood pressure in pregnancy. *Am J Obstet Gynecol.* 2000;183:1-22.
5. Khosravi S, Dabiran S, Lotfi M, Asnavandy M. Study of the prevalence of hypertension and complications of hypertensive disorders in pregnancy. *Open J Prevent Med.* 2014;4:860-7.
6. 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.
7. Parmar MT, Solanki HM, Gosalia VV. Study of risk factors of perinatal death in pregnancy induced hypertension. *National J Community Med.* 2012;3:703-7.
8. Patel R, Baria H, Patel HR, Nayak S. A study on pregnancy induced hypertension and foetal outcome among patient with PIH at tertiary care hospital,

- Valsad. *Int J Community Med Public Health.* 2017;4:4277-81.
9. Mostafa HM, Youssef AE, Samia SM, Dina M. Effect of socioeconomic status on preeclampsia cross sectional study. *Med J Cairo Univer.* 2018;86:4227-34.
 10. Singh V, Srivastava M. Associated risk factors with pregnancy-induced hypertension: a hospital-based KAP study. *Int J Med Public Health.* 2015;5:59-62.

Cite this article as: Mathapati SS, Biradar AM, Sangolli LS, Mangalwadi NA, Gamini BS, Sridevi HS. A study of hypertensive disorders of pregnancy and the fetal outcome in a tertiary care hospital: a prospective study. *Int J Reprod Contracept Obstet Gynecol* 2020;9:3275-8.