Volume 20 Issue 20
Originally issued as E2

Global Journal of Medical Research: E
Gynecology and Obstetrics
Volume 20 Issue 2 Version 1.0 Year 2020
Type: Double Blind Peer Reviewed International Research Journal
Publisher: Global Journals
Online ISSN: 2249-4618 & Print ISSN: 0975-5888

A Study on Complications of Pregnancy Induced Hypertension

By Dr. Adarsh Preet & Dr. Tushar Palve

Abstract- *Background:* Hypertensive disorder is the second most common medical disorder seen during pregnancy. Hypertensive disorder contribute to maternal morbidity and mortality mainly due to its complications and not due to hypertension per sec. Thus, maternal mortality and these complications are preventable. The objective of the present study was to study the pattern of feto-maternal outcome and complications in cases of pregnancy-induced hypertension to identify them at the earliest.

Methods: A study was conducted over a period 8 months in the department of Obstetrics and Gynaecology, Cama and Albless Hospital, Mumbai. This study enrolled a total of 50 pregnant women with pregnancy-induced hypertension with inclusion-exclusion criteria. Necessary information such as Sociodemographic information, detailed clinic, and obstetric history, clinical examination, investigations, and fetal outcome was noted by using preformed proforma.

Results: In our study the majority of PIH mothers belonged to the age group of 20-25 years (46%); PIH is more prevalent among nulliparous (54%). Among PIH mother, the most common presenting clinical feature was pedal edema (44%), followed by headache (16%). The most prevalent complication among PIH patients was oligohydramnios (20%).

Keywords: *pregnancy-induced hypertension, blood pressure, foetal outcome.*

GJMR-E Classification: *NLMC Code: WQ 244*



Strictly as per the compliance and regulations of:

© 2020. Dr. Adarsh Preet & Dr. Tushar Palve. This is a research/review paper, distributed under the terms of the Creative Commons Attribution-Noncommercial 3.0 Unported License http://creativecommons.org/licenses/by-nc/3.0/), permitting all non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

A Study on Complications of Pregnancy Induced Hypertension

Dr. Adarsh Preet [α] & Dr. Tushar Palve[σ]

Abstract- Background: Hypertensive disorder is the second most common medical disorder seen during pregnancy. Hypertensive disorder contribute to maternal morbidity and mortality mainly due to its complications and not due to hypertension per sec. Thus, maternal mortality and these complications are preventable. The objective of the present study was to study the pattern of feto-maternal outcome and complications in cases of pregnancy-induced hypertension to identify them at the earliest.

Methods: A study was conducted over a period 8 months in the department of Obstetrics and Gynaecology, Cama and Albless Hospital, Mumbai. This study enrolled a total of 50 pregnant women with pregnancy-induced hypertension with inclusion-exclusion criteria. Necessary information such as Sociodemographic information, detailed clinic, and obstetric history, clinical examination, investigations, and fetal outcome was noted by using preformed proforma.

Results: In our study the majority of PIH mothers belonged to the age group of 20-25 years (46%); PIH is more prevalent among nulliparous (54%). Among PIH mother, the most common presenting clinical feature was pedal edema (44%), followed by headache(16%). The most prevalent complication among PIH patients was oligohydramnios (20%).

Conclusion: PIH is one of the medical conditions affecting pregnancy. We concluded that PIH is more prevalent in younger and nulliparous mothers. Early ANC registration, regular ANC visits and institutional management can improve feto-maternal outcome in PIH mothers.

Keywords: pregnancy-induced hypertension, blood pressure, foetal outcome.

I. Introduction

Hypertensive disorders remain among the most significant and intriguing unsolved problems in obstetrics. These disorders complicate 5 to 10% of all pregnancies, and together they are one of the deadly triad along with hemorrhage and infection that contributes greatly to maternal morbidity and mortality rates.[1] PIH is a pregnancy-specific, multisystem disorder characterized by the development of edema, hypertension, and proteinuria after 20 weeks of gestation.[2] World Health Organization estimates that at least one woman dies every seven minutes from complications of hypertensive disorders of pregnancy.[3] 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 haemorrhage, and maternal death.[4,5]

II. Methods

A study was conducted over a period 8 months in the Department of Obstetrics and Gynaecology at Cama and Albless Hospital, Mumbai, India. A total of 50 pregnant women who presented to our Hospital with pregnancy-induced hypertension during the study period from August-2019 to March-2020 are part of this study with following inclusion and exclusion criteria.

a) Inclusion criteria

1. Women with 30 or more than 30 weeks of gestation.
2. Women who were willing to participate in this study.

b) Exclusion criteria

Those pregnant women were having chronic hypertension and those who were not willing to participate in this study.

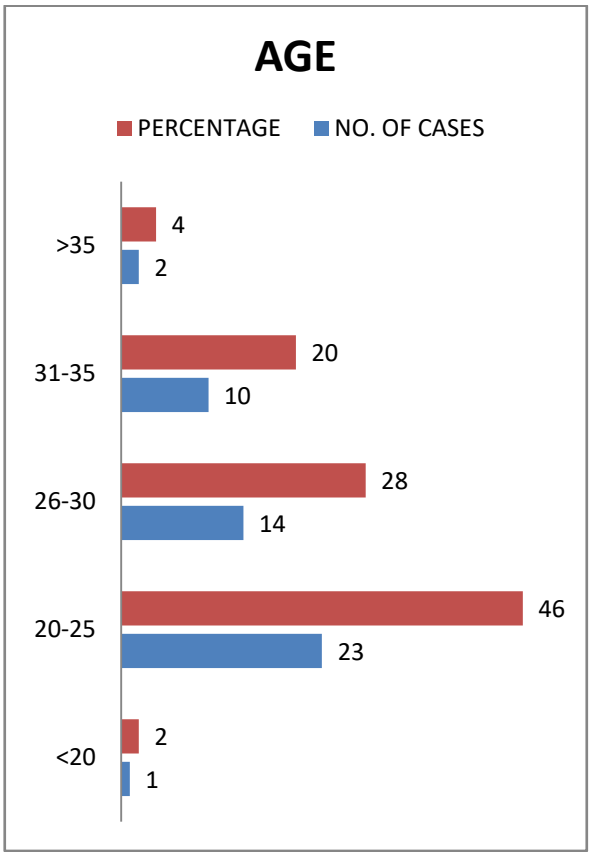
Study participants Informed gave consent to be part of this study. A detailed history was taken, BP of PIH patient was noted, thorough clinical examination, and relevant laboratory investigations were performed on admission. Information about maternal complications like CCU admission, imminent eclampsia, eclampsia, abruption placentae, CVA, DIC, etc and fetal complications like IUGR, birth asphyxia, prematurity etc, was captured. Fetal outcomes like LBW, SGA, NICU admissions were also noted down.

III. Results

A total of 50 pregnant women with PIH participated in these study and we noted the following observations in our study.

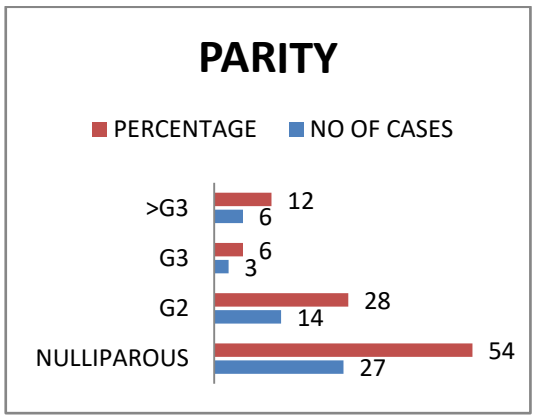
Author α σ: Department of Obstetrics and Gynaecology, Cama and Albless Hospital, Mumbai, India. e-mail: preetadarsh007@gmail.com

© 2020 Global Journals



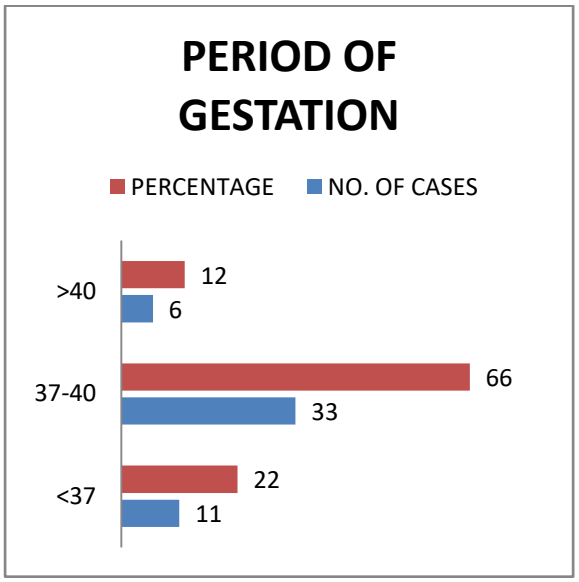
Graph 1: Age-wise distribution of PIH patients

A higher percentage of PIH was noted among 20-25 years of age group (46%) followed by 26-30 years of age group (28%), 31-35 years of age group (20%), >35 years of age group (4%) and <20 years of age group (2%)



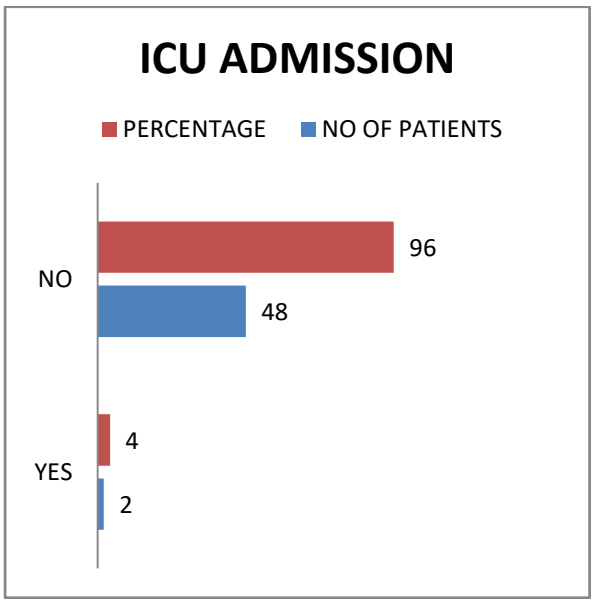
Graph 2: Parity-wise distribution of PIH patients

A higher percentage of PIH was among nulliparous (54%), followed by G2 (28%), >G3 (12%), and G3 (6%).



Graph 3: Period of Gestation wise distribution of PIH patients

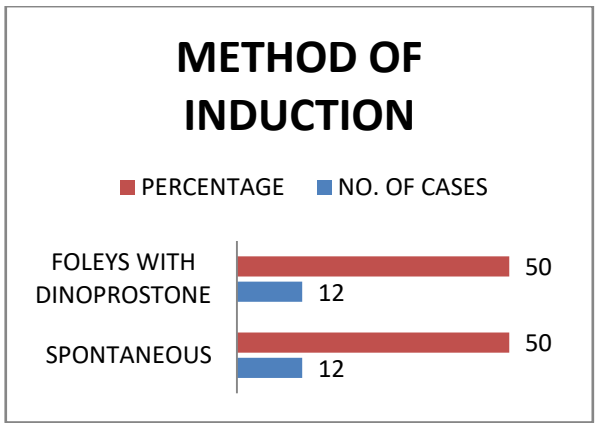
In our study, 66% of PIH patients delivered between 37-40weeks period of gestation followed by less than 37 weeks (22%) and more than 40 weeks (12%).



Graph 4: ICU admission wise distribution of PIH patients

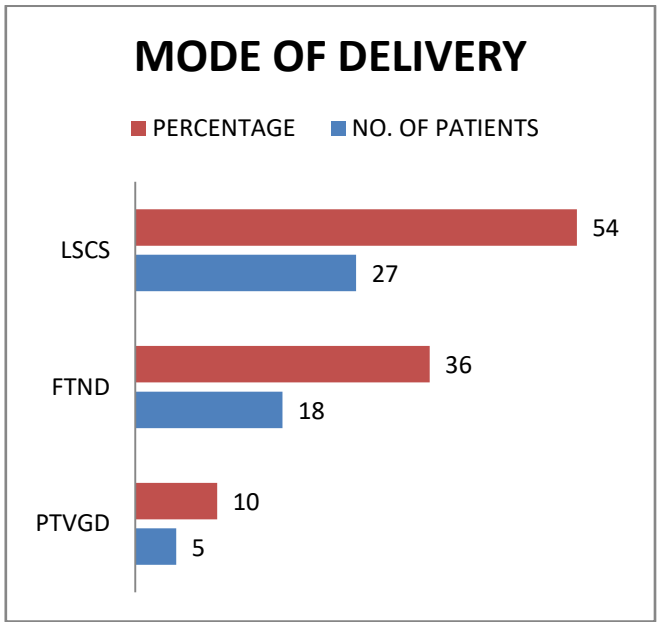
Out of 50 patients, just two patients (4%) were admitted to ICU for monitoring and proper management. The first case had HELLP syndrome, and the patient was given blood and FFP with supportive care. The second case had eclampsia. Both these patients delivered in ICU.

© 2020 Global Journals



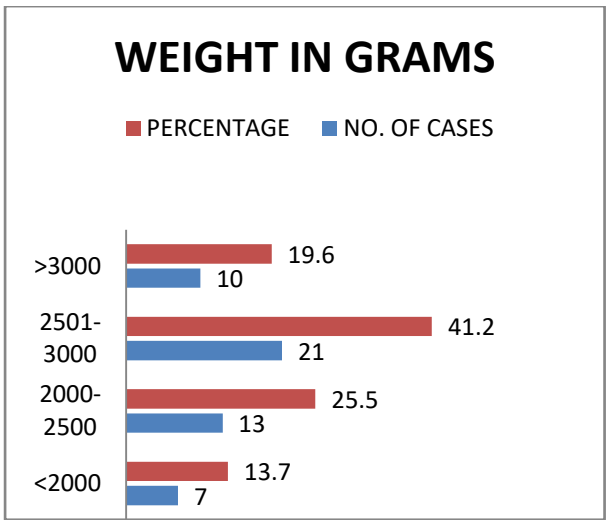
Graph 5: Method of induction wise distribution of PIH patients

50% of PIH patients went into spontaneous labor, and 50% induced with Foleys with dinoprostone.



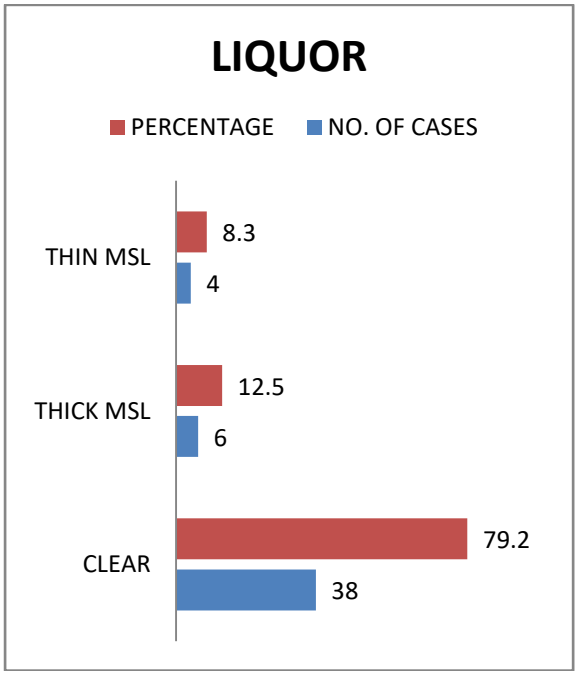
Graph 6: Mode of delivery wise distribution of PIH patients

A high percentage of PIH patients were delivered by LSCS (54%), followed by FTND (36%) and PTVGD(10%).



Graph 7: Weight of the outcome wise distribution of PIH patients

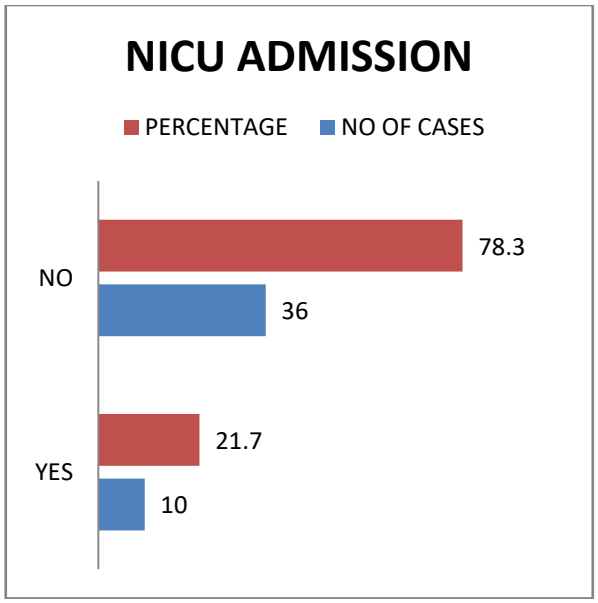
In our study it was noted that higher percentage of outcome of PIH patients weighed between 2501-3000gms (41.2%) followed by 2000-2500gms (25.5%), more than 3000gms (19.6%) and less than 2000gms (13.7%).



Graph 8: Amniotic fluid findings of PIH patients

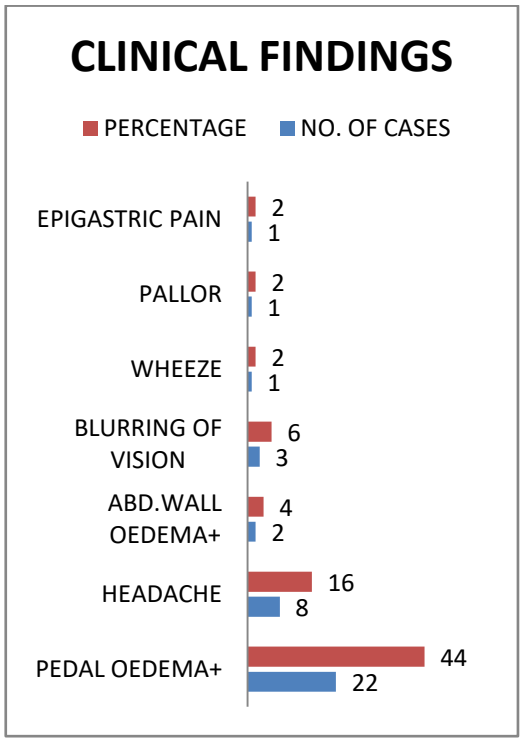
In most of the patients, liquor was clear (79.2%) followed by thick MSL (12.5%) and thin MSL (8.3%).

© 2020 Global Journals



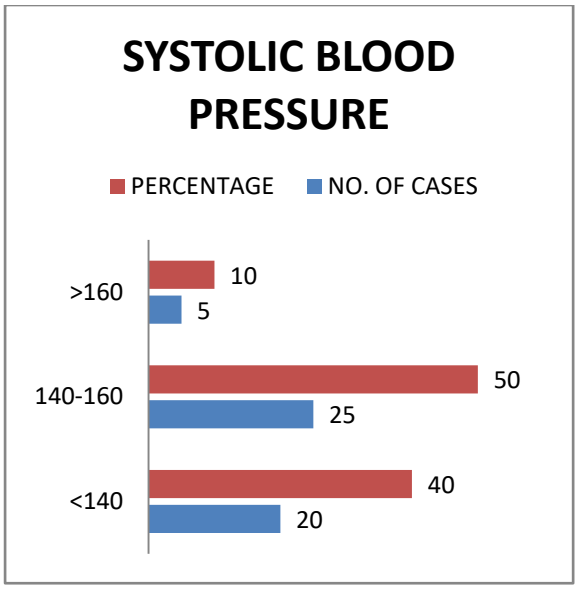
Graph 9: NICU admission wise distribution of PIH patients

In our study, it was noted that out of 50 deliveries, ten babies (21.7%) were required NICU admission for various causes, and 36 babies (78.3%) did not require NICU admission.



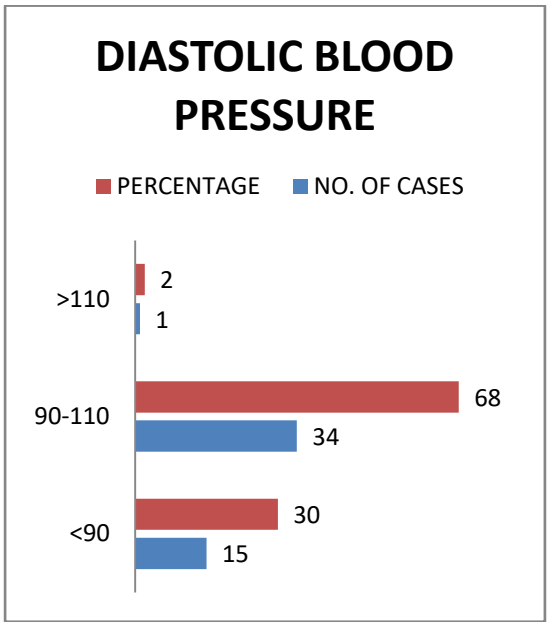
Graph 10: Clinical findings wise distribution of PIH patients

In our study, it was noted that the most common clinical finding was pedal edema (44%), followed by headache (16%).



Graph 11: Systolic Blood pressure wise distribution of PIH patients

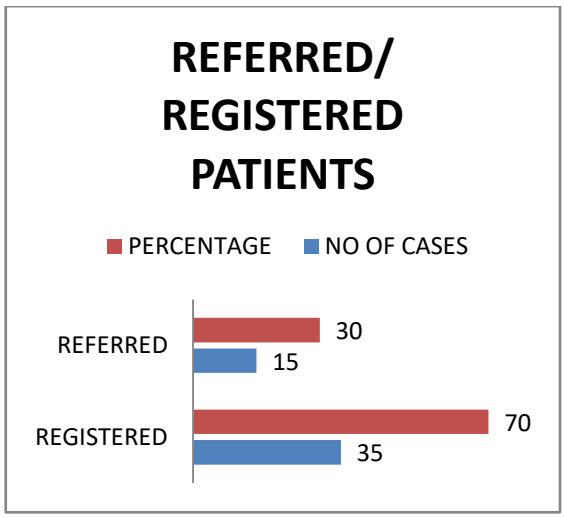
Maximum patients had systolic blood pressure ranging between 140-160mmhg (50%) followed by less than 140mmhg (40%) as these patients were on medication and more than 160mmhg (10%).



Graph 12: Diastolic Blood pressure wise distribution of PIH patients

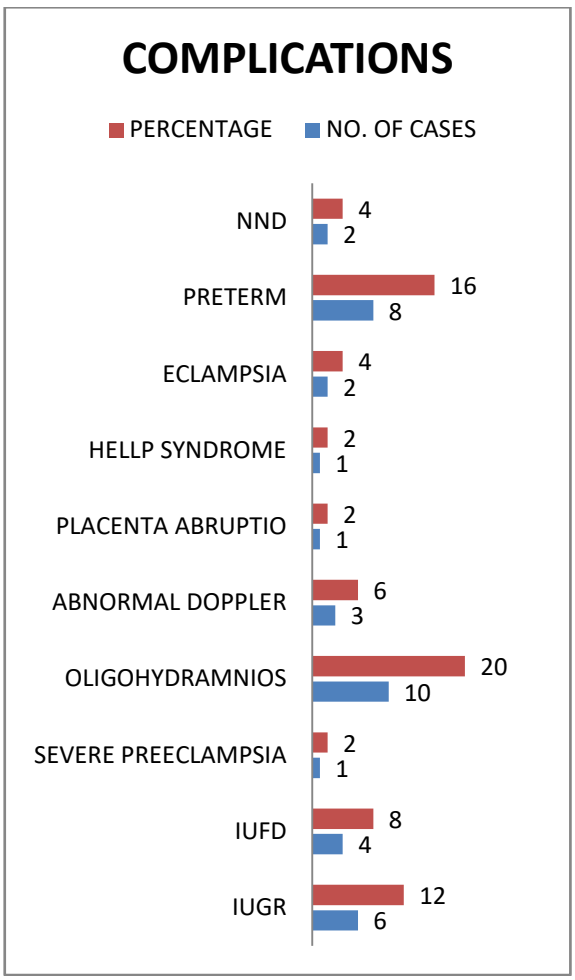
Maximum patients had diastolic blood pressure ranging between 90-110mmhg (68%) followed by less than 90mmhg (30%) and more than 110mmhg (2%).

© 2020 Global Journals



Graph 13: Referred/registered wise distribution of PIH patients

Out of 50 patients, 35 were registered (70%), and 15 were referred (30%). The two patients admitted to ICU were referred patients with no old record of ANC.



Graph 14: Complications wise distribution of PIH patients

Higher percentage of patients suffered from oligohydramnios (20%) followed by preterm (16%), IUGR (12%), IUFD (8%), abnormal Doppler (6%), eclampsia (4%), NND (4%), HELLP syndrome (2%), placenta abruption (2%), severe preeclampsia (2%).

IV. Discussion

In our study higher prevalence of PIH was noted among 20-25 years of age group (46%) followed by 26-30 years of age group (28%), 31-35 years of age group (20%), >35 years of age group (4%) and <20 years of age group (2%). Similar results were found in a study conducted by Patel R at GMERS medical college and hospital, Valsad where higher prevalence of PIH was found in 18-22 years age group (51.56%), followed by 23-27 years age group (28.12%), and 28-32 years of age group (17.18%).[6]

A higher percentage of PIH was among nulliparous (54%), followed by G2 (28%), >G3 (12%), and G3 (6%). Similar results found in a study conducted by Patel R where the prevalence of PIH was noted more among nulliparous (57.81%) as compared to multiparous (42.18%).[6]

A high percentage of PIH patients delivered between 37-40 months (66%) followed by less than 37 months (22%) and more than 40 months (12%).

50% of PIH patients went into spontaneous labor, and 50% induced with Foleys with dinoprostone.

In our study, it was noted that a high percentage of PIH patients were delivered by LSCS (54%), followed by FTND (36%) and PTVGD (10%). Similarly in a study conducted by Jayaraman L LSCS was observed to be a more common mode of delivery.[7]

In our study it was noted that higher percentage of outcome of PIH patients weighed between 2501-3000gms (41.2%) followed by 2000-2500gms (25.5%), more than 3000gms (19.6%) and less than 2000gms (13.7%). Twenty outcomes (40%) had weight less than 2500gm (low birth weight) out of which three had weight less than 1500gms (very low birth weight). Similar results found in study conducted by Patel R where 53.12% of outcome was low birth weight.[6]

In most of the patients liquor was clear (79.2%) followed by thick MSL (12.5%) and thin MSL (8.3%).

In our study, it is noted that out of 50 deliveries, ten (21.7%) babies required NICU admission for various causes, and 36(78.3%) babies did not require NICU admission. Similarly in a study conducted by Patel R 18.75% of babies required NICU admission.[6]

In our study it is noted that higher percentage of patients suffered from oligohydramnios (20%) followed by IUGR (12%), IUFD (8%), abnormal Doppler (6%), eclampsia (4%), NND (4%), preterm (4%), HELLP syndrome (2%), placenta abruption (2%), severe preeclampsia (2%).

© 2020 Global Journals

Maximum patients had systolic blood pressure ranging between 140-160mmhg (50%) (mild PIH) followed by less than 140mmhg (40%) and more than 160mmhg (10%) (severe PIH) and maximum patients had diastolic blood pressure ranging between 90-110mmhg (68%) (mild PIH) followed by less than 90mmhg (30%) and more than 110mmhg (2%) (severe PIH).

Out of 50 patients, just two patients (4%) were admitted in ICU, and out of 50 patients 35 were registered (70%) and 15 were referred (30%). The two patients admitted to ICU were referred patients with no old record of ANC, and most of the complications were in referred patients.

The most common clinical finding is pedal edema (44%), followed by headache (16%).

V. Conclusion

PIH is one of the medical conditions affecting pregnancy. We concluded that PIH is more prevalent in younger and nulliparous mothers. Early ANC registration, regular ANC visits and institutional management can improve feto-maternal outcome in PIH mothers. Regular ANC checkups help in early recognition of PIH, thus improving feto-maternal outcome.

References Références Referencias

1. Williams Obstetrics, 25th edition, Hypertensive disorders.
2. Jye CJ. Challenges of obstetrician in the management of severe preeclampsia. Obs and Gynae Today. 2009; 16(8):348-51.
3. Dadelszen P, Magee L. What matters in preeclampsia are the associated adverse outcomes: the view from Canada. Current Opinion Obstetr Gynaecol. 2008; 20:110-5.
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. Brown MA, Hague WM, Higgins J. The detection, investigation and management of hypertension in pregnancy: full consensus statement. Aust N Z J Obstet Gynecol. 2000; 139-55.
6. 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
7. Jayaraman L, Khichi SK, Singh A, Goel S, Karkala J, Goyal P, Shankar V. Pattern of feto-maternal outcome and complications in pregnancy induced hypertension from a tertiary level health care teaching institution of Tamil Nadu, India. Int J Res Med Sci 2016; 4:1402-6.

© 2020 Global Journals