

Retrospective Study of Complication Associated with Hypertensive Disorders of Pregnancy at GMCH: A Tertiary Referral Centre

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Abstract

Hypertensive disorders of pregnancy (HDP) are a group of commonest medical complication in pregnancy and it is also a major cause of maternal mortality and morbidity. This study aims to determine the prevalence of fetomaternal complication and correlation with severity of HDP. *Material and Method:* This was a retrospective study from January 2016 to December 2016 of ante-partum, intra-partum and post-partum cases of HDP with associated complication admitted at GMCH. *Result:* Fetomaternal complications increases with severity of HDP. Early onset of HDP was also associated with increasing complication and poor fetal outcome. *Conclusion:* HDP leads to progressive deterioration of fetal and maternal health which is only relieved by termination of pregnancy. Early detection and treatment can improve the fetomaternal outcome.

Keywords: PIH; Pre-Eclampsia; Eclampsia.

Introduction

Hypertensive disorder of pregnancy is one of the most common causes of both maternal and fetal morbidity and mortality. HDP is a pregnancy specific, multisystem disorder characterized by development of hypertension, edema and proteinuria after 20 weeks of gestation [8].

Gestational hypertension is defined as Blood pressure $\geq 140/90$ mm Hg for the first time during pregnancy, which returns to normal within 12 weeks postpartum, not associated with proteinuria [1,2,3].

Preeclampsia is defined as Blood pressure $\geq 140/90$ mmHg after 20 weeks gestation associated with proteinuria ≥ 300 mg/24 hours or $>1+$ dipstick [1,2,3]. Preeclampsia associated with seizures that cannot be attributed to other causes is known as Eclampsia [1,2,3].

Although the cause of HDP still remains unknown evidence for its manifestation begins early in pregnancy. Covert pathophysiological changes occur that gain momentum across gestation and eventually become clinically apparent. Unless delivery supervenes, these changes ultimately result in multi-organ involvement with a clinical spectrum ranging from barely noticeable to one of cataclysmic deterioration.

Maternal complications can be eclampsia, disseminated intravascular coagulopathy, acute renal failure, HELLP syndrome, intracerebral haemorrhage, ante-partum haemorrhage and even maternal death. Fetal risk includes severe IUGR, hypoxemia, acidosis, premature birth, low birth weight and increased need for NICU admission or Intra uterine death.

Risk factors for preeclampsia include multi-parity, multi-fetal gestation, black race, young age, obesity, family history of preeclampsia, or preeclampsia in previous pregnancy. In India incidence of preeclampsia as recorded from hospital statistics vary widely from 5-15%.

Most death in HDP occurs due to its complications and not due to hypertension per se. Thus we can reduce the maternal

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Received on 24.08.2017,
Accepted on 01.09.2017

mortality and fetal complications by prevention and effective management of these complications. Hence the present study was conducted to find out the incidence, high risk factors, and maternal and fetal outcome associated with HDP in a tertiary referral centre.

Material and Method

This was a retrospective study from January 2016 to December 2016 of ante-partum, intra-partum and post-partum cases of HDP with associated complication admitted at GMCH after clearance from ethical committee. 100 patients with hypertension with pregnancy more than 20 weeks were studied. They were divided into 3 categories mild pre-eclampsia, severe pre-eclampsia and eclampsia. The cases with systolic BP >140-160 and diastolic BP >90-110 with protein-urea were classified as mild pre-eclampsia. Cases with systolic BP >160 and diastolic BP >110 with protein-urea were classified as severe pre-eclampsia. Cases with pre-eclampsia with convulsions were classified as eclampsia.

Different maternal and neonatal parameters were obtained and statistical test like chi-square and mannwhitney test were applied. A p value <0.05 was taken as a significant. Results obtained were compared with other studies from textbook and journals.

Result

There were 100 patient included in the study 29 of them are case of HDP, 38 patient are of mild pre-eclampsia, 19 case are of severe pre-eclampsia and 14 were of eclampsia.

Out of 100 patient 35 were in 16-25 year age group, 50 were in 26-35 year age group, 15 were in 35-45 year age group, 3 were in >45 year age group. 53 patients were primi-gravida, 18 patients were second-gravida, 18 patients were third-gravida, 11 patients were forth-gravida. 23 patients were diagnosed with HDP at the gestational age of 24-30 weeks and remaining 77 diagnosed after 30 weeks of gestation.

From 100 cases 11 patients developed hepatic complication, 4 (10.53%) are of mild pre-eclampsia,

Tables 1: Distribution of characteristics of pregnant women with mild and severe hbd

Variables	N
AGE (Years)	
16-25	35
26-35	50
36-45	12
>45	03
Gravida	
Primi	53
Gravida 2	18
Gravida 3	18
Gravida 4	11
Diagnosis gestation (weeks)	
24-30	23
>30	77
Total	100

Table 2: Maternal complications

S. No.	Complications	Number N =100
1	Pre eclampsia	57
2	Eclampsia	14
3	Hepatic	11
4	Abruption	3
5	Coagulopathy	10
6	HELLP	11
7	Renal insufficiency	3
8	Isolated Low PLT count	15
9	DIC	2
10	Pulmonary Edema	5
11	Maternal death	1

Table 3: Maternal complication and pregnancy according to mild pre Eclapmsia, severe pre Eclapmsia and eclampsia

Complications	Mild Pre eclampsia N = 38	Severe Pre eclampsia N = 19	Eclampsia N = 14	P value
Renal insufficiency	2(5.26%)	0	1(7.14%)	0.008 (S)
DIC	1(2.63%)	0	1(7.14%)	0.757(NS)
Pulmonary Edema	2(5.26%)	0	3(21.43%)	
Maternal death	1(2.63%)	0	1(7.14%)	
Abruption	1(2.63%)	1(5.26%)	1(7.14%)	
Hepatic	4(10.53%)	1(5.26%)	6(42.86%)	
HELLP	5(13.16%)	1(5.26%)	5(35.71%)	
Coagulopathy	4(10.53%)	1(5.26%)	5(35.71%)	
Isolated Low PLTcount	9(23.68%)	2(10.53%)	7(50.00%)	

Table 4: Neonatal complication according to Eclapmsia and Pre Eclapmsia

Complications	Mild Pre eclampsia N = 38	Severe Pre eclampsia N = 19	Eclampsia N = 14	P value
Low birth weight	21(55.26%)	14(73.68%)	11(78.57%)	0.698 (NS)
Still birth	2(5.26%)	1(5.26%)	1(7.14%)	0.574(NS)

1(5.26%) is of severe pre-eclampsia and 6 (42.86%) are of eclampsia.

11 patient developed HELLP syndrome 5 (13.16%) are of mild pre-eclampsia, 1(5.26%) is of severe pre-eclampsia and 5 (35.71%) are of eclampsia.

3 patient developed abruptio placenta, 1(2.63%) is of mild pre-eclampsia, 1(5.26%) is of severe pre-eclampsia and 1 (7.14%) are with eclampsia.

10 patient developed coagulopathy 4(10.53%) are of mild pre-eclampsia, 1 (5.26%) is of severe pre-eclampsia and 5 (35.71%) are of eclampsia.

3 patient developed renal insufficiency 2(5.26%) are of mild pre-eclampsia, 1(7.14%) is of eclampsia.

2 patient developed DIC 1 (2.63%) is of mild pre-eclampsia, 1 (7.14%) is of eclampsia.

18 patients had low platelet count 9 (23.68%) are of mild pre-eclampsia, 2 (10.53%) is of severe pre-eclampsia and 7 (50%) are of eclampsia.

5 patients developed pulmonary edema 2 (5.26%) are of mild pre-eclampsia and 3 (21.43%) are of eclampsia.

There were 2 maternal death 1 (2.63%) is of mild pre-eclampsia and 1(7.14%) is of eclampsia.

Out of 100 patients 4 patients delivered still birth baby 96 patients delivered live baby. Out of 96 live born babies 46 were low birth weight babies (<2.5 kg) and 50 babies have normal birth weight out of 46 low birth weight babies 21 (55.26) born to mother with mild pre-eclampsia, 14 (73.68%) born to mother with severe pre-eclampsia, 11(78.57%) born to mother with eclampsia.

Out of 4 still born 2(5.26%) born to mild pre-eclamptic mother, 1(5.26%) born to severe pre-

eclamptic mother and 1(7.14%) born to mother having pre-eclampsia.

Discussion

HDP is a pregnancy related multi-system disorder affecting both mother and fetus and it remains to be one of the primary cause of maternal and fetal morbidity and mortality all over the world.

GMCH have total 1440 admitted in the period of 1 year study 100 of them are diagnosed as a HDP, so the incidence in our study comes about 6.94 % which is slight high than in study conducted by Aabidha P et al [5] which came about 4.89%.

In our study we have studied 100 patients 29 of them are case of HDP, 38 patients are of mild pre-eclampsia, 19 cases are of severe pre-eclampsia and 14 were of eclampsia.

Fifty out of the patients are from age group 26-35, 3 patients were from age group above 45 and these patients developed severe HDP. 35 are below 25 years of age. previous report by Nankali et al [4] showed 80.2% are from 18-35 year age-group in our study 85% are from 16-35 year age group.

Nulligravida have high chances of developing HDP, in our study 50 patients were nulliparous. 11 patients were grand multipara. Aabidha et al [5] found 46.23% patients are nulliparous almost similar to our study.

In patients with early onset of HDP have poor fetal outcome and gave birth to low birth weight babies and stillbirth. In our study 23 patients developed HDP before 30 weeks of gestation these patients gave birth

to babies with birth weight less than 2.5 kg and 2 babies were still born.

Total maternal complications were seen in 25 patients which were higher than in study by Ahmed M et al [6] which is 18%, 14 patients suffered from eclampsia which is lower than and in study by Patel J et al [8] it is about 36%. 11 of them had hepatic complication 3 had abruptive placenta which is similar (2.5%) in study by Ngwenya S [7] and in study by Patel J et al [8] it is about 5%. 10 patients had deranged coagulation profile, 11 developed HELLP syndrome which is similar (9.1%) to the study by Ngwenya S [7] it is lower than in study by Singh A et al [10] where they noticed HELLP syndrome in 37.5% patients, 3 patients needed dialysis, 15 had low platelet count, 2 patient developed DIC it is similar with the study by Singh A et al [10] where DIC noticed in 3.6% patients, 5 patient needed ventilator support and 1 patient died due to MODS which correlate (1.7) with study by Ngwenya S [7].

In our study 50 babies born with birth weight <2.5kg out of them 5 were blow 1 kg birth weight and out of those 4 babies were still born which was similar to the data from the study by Ahmed M et al [6] in which 54.8% had birth weight lower than 2.5 kg and 6% had birth weight <1 kg. Leonard A et al [9] found 44.9% babies born with birth weight <2.5 kg which was lower than our study. There was a significant negative correlation of birth weight with severity.

There was significant correlation between severity of HDP and NICU admission. In case of severe HDP chances of baby getting admitted in NICU are higher.

In our study cases with early onset of HDP had more severe course and chances of fetal and maternal morbidity were higher as severe HDP in early gestation needs termination of pregnancy leads to poor fetal outcome and there was maternal death in one case were severe HDP diagnosed at 26 weeks of gestation and due to abruption and eclampsia babies born was a still born and mother died due to MODS.

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