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To evaluate maternal outcome in hypertensive disorders of pregnancy at tertiary care Centre

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Abstract
Method: Registration details of all the patients including their OPD number, name, age, sex were noted. Consent of each patient was taken and details of clinical examination and all the tests report will also be included in to the proforma. A thorough history of each patient including age, parity, duration of pregnancy, obstetric history, family history and any complication she faced in present or past pregnancy.
Result: On analyzing the maternal outcome association with in these women. 70% (140/200) reported cases presented no complication. However, significant morbidity was noted in 30% (60/200) cases. There were 4 maternal deaths, one in mild PE and three in both sever PE and eclampsia group, both probably due to intra cerebral hemorrhage. All these maternal complications were observed only in the two groups of severe pre-eclampsia and eclampsia. None of the women with gestational hypertension or mild pre-eclampsia had complications. This difference was statistically significant with p value of 0.001. We found that anaemia was the most commonly associated medical disorder in these women (16.4%). Three women had GDM (Gestational diabetes mellitus) with HDP, of which one presented with gestational hypertension and two developed severe pre-eclampsia in last trimester. Eleven women had twin pregnancies.
Conclusion: In our study it has shown that it is more common in younger age group between 18-27 years followed by 28-37 years. it is more common in multigravida that is not supported by various studies but due to increased age preeclampsia superimposed on chronic hypertension. Number of cesarean deliveries are more as compared to vaginal. This study found that hypertensive disorders of pregnancy is most commonly assosciated with poor maternal outcome but in patient management good antenatal care, good critical care unit in collarabaration with multispeciality approach reduces fetomaternal mortality & morbidity to a great extent.
From the study conducted it is concluded that severe preeclampsia & eclampsia are more complicated form of hypertensive disorders of pregnancy & poses a great maternal morbidity & mortality.

Keywords: Maternal, hypertensive, pregnancy & eclampsia

Introduction
Hypertensive disorders are the most common medical complication encountered in pregnancy, affecting between 7 to 15% of the gestation & account for approximately a quarter of all antenatal patients. They are associated with significant feto-maternal morbidity and mortality and have a wide spectrum of presentation varies from mild to severe form. Together with hemorrhage & infection, hypertension forms a deadly triad that contributes to morbidity & mortality during pregnancy & childbirth [1]. Hypertensive disorders diagnosed during pregnancy when systolic blood pressure is more than or equal 140mmhg & diastolic blood pressure is more than or equal to 90mmhg on two different sittings 6 hours apart after 20 weeks of pregnancy. Among the hypertensive disorders, the pre-eclampsia syndrome & eclampsia or preeclampsia superimposed on chronic hypertension is the most dangerous. Eclampsia is presence of convulsion associated with preeclampsia & to rule out other causes of convulsions. New onset non proteinuric hypertension diagnosed during pregnancy after 20 weeks of pregnancy, termed gestational hypertension, is followed by signs and symptoms of pre-eclampsia. Women who develop pre-eclampsia in pregnancy are at greater risk of cardiovascular and cerebrovascular event during antenatal or postpartum period. Hypertension complicating pregnancy affects both mother & fetus. In developing countries the incidence varies from 4% to 18%[2] WHO estimates the incidence of preeclampsia to be seven times higher in developing countries (2.8% of live births) than in developed countries (0.4%).[3] Incidence of eclampsia in developing nations varies widely, ranging from 1 case per 100 pregnancies to 1 case per 3448 pregnancies. For patients obtaining prenatal care, the incidence is about 1 in 800 patients.[4]

The incidence of maternal mortality due to hypertensive disorder of pregnancy is estimated at 20-33% [5].

Material & Method

This study was conducted at Sri Aurobindo Medical College and P.G Institute, Indore, Madhya Pradesh, India, of Department of Obstetrics & Gynaecology with Sample Size of 200 the OPD in our hospital from Oct 2017 to June 2018.

Inclusion Criteria

All Anc patients with 2o Wks of pregnancy with

- All pregnant women with BP 140/90 minimum two readings 4 to 6 hours apart
- All pregnant women who are giving consent
- All pregnant women with BP 140/90 & WITH Proteinuria
- Pregnant women with eclampsia

Exclusion Criteria

- Patient with protienuria due to other causes
- Patient who are not giving consent.
- Patient with convulsions due to any other causes like epilepsy, cerebral malaria
- Patient with other co morbidities.

Investigation Details

Routine investigations like CBC with blood grouping, Serology investigations like RFT, LFT, Coagulation profile in selected cases.

Special investigation

- Serial monitoring by Usg (Obs doppler) for fetal growth monitoring.
- Serial monitoring by twice weekly non stress test
- Usg whole Abdomain fundus examination

Methodology

Registration details of all the patients including their OPD number, name, age, sex were noted. Consent of each patient was taken and details of clinical examination and all the tests report will also be included in to the proforma. A thorough history of each patient including age, parity, duration of pregnancy, obstetric history, family history and any complication she faced in present or past pregnancy.

Gynaecologcal examination

After familiarizing the patient about the study we proceed to general examination. We record her weight, height, blood pressure, pulse, pallor, oedema. Followed by systemic examination. We then record size of uterus, adequacy of liquor on per abdomen examination.

TSH T3 T4 examination was carried out for the status hypertension., cervical status or was there any evidence of leaking or bleeding. necessary investigation were done. ultrasound examination was done for the assessment of fetal well being.

Results

Table 1: Sociodemographic characteristics of the study population

Age in years	Frequency	Percent	Mean±SD	p value
18-27	126	63.0	23.42±2.45	0.0001
28-37	63	31.5	31.19±2.68	
38-42	11	5.5	40.90±2.70	
Total	200	100.0	27.00±5.52	

The age of the HDP patients ranged between 18 and 45 years with a median of 26.00 and a mean of 27.00±5.52 years. Those below the age of 27 formed 126(63.0%) of the hypertensive patients which is highest among all, the age of 28 to 37 formed 63(31.5%) and while those above 38 years accounted for 11(5.5%). This difference was statistically highly significant with p value of 0.0001.

Table 2: Incidence of gravida

Gravida	Frequency	Percent	p value
Primi gravida	87	43.5	0.009
Multigravida	113	56.5	
Total	200	100.0	

The HDP were more common in among multigravida (56.5%) and multiple parity (51.5%). The difference in gravida and parity was not statistically significant (p=0.009 and 0.548)

Table 3: Mode of Delivery

Mode of Delivery	Frequency	Percent	p value
Normal	48	24.0	0.0001
Caesarean	151	75.5	
Operative	01	0.5	
TOTAL	200	100.0	

Of the total deliveries in HDP patients, 48(24%) women had normal vaginal delivery, 01(0.5%) had vacuum operative and 151 (75.5%) women underwent caesarean section. The most common indication of caesarean delivery was foetal distress. The difference in the number of women who had vaginal deliveries and caesarean deliveries was statistically significant with p value of 0.0001.

Table 4: Hypertensive disorders of pregnancy

HDP	Frequency	Percent
GH	28	14.0
Mild PE	27	13.5
Severe PE	87	43.5
Eclampsia	54	27.0
Chronic HTN	4	2.0

Of these HDP patients, 14.0% (28/200) women had gestational hypertension (GH), 13.5% (27/200) women had mild pre-eclampsia (PE), 43.5% (87/200) had severe pre-eclampsia (PE) and 27.0% (54/200) women presented with eclampsia. Only four women had preeclampsia superimposed on chronic hypertension and hence this group was not included for statistical analysis and calculation of p value

Table 5: Complication profile

Complications	Frequency	Percent
Morbidity	60	30
Mortality	4	2
ICU	36	18
Ventilator	4	2
ARF	19	9.5
DIC	5	2.5
HELLP	15	7.5
PPH	4	2
CHF	3	1.5
ARDS	4	2

The complication profile of the study population shown in table 30% had morbidity, 2% had mortality, 18% stay in ICU, 2%

required ventilator, 9.5% had ARF, 2.5% had DIC, 7.5% had HELLP, 2% had PPH, 1.5% had CHF and 2% had ARDS.

Table 6: Maternal outcome in various groups of PIH (n=200).

	GH	Mild PE	Severe PE	Eclampsia	Chronic HTN
	(n=28)	(n=27)	(n=87)	(n=54)	(n=4)
Normal	28	27	47(23.5%)	49(24.5%)	4
Morbidity	0 (0%)	0 (0%)	42(21%)	15(7.5%)	3(1.5%)
Mortality	0(0%)	0(0%)	1(0.5%)	3(1.5%)	0(0%)
ICU	0(0%)	0(0%)	18(9.0%)	16(8%)	2(1%)
Ventilator	0(0%)	0(0%)	3(1.5%)	1(0.5%)	0(0%)
ARF	0(0%)	0(0%)	13(6.5%)	5(2.5%)	1(0.5%)
DIC	0(0%)	0(0%)	3(1.5%)	2(1%)	0(0%)
HELLP	0(0%)	0(0%)	8(4%)	7(3.5%)	0(0%)
PPH	0(0%)	0(0%)	2(1%)	2(1%)	0(0%)
CHF	0(0%)	0(0%)	1(0.5%)	2(1%)	0(0%)
ARDS	0(0%)	0(0%)	2(1%)	2(1%)	0(0%)

Maternal outcome in various groups of PIH

On analyzing the maternal outcome association with in these women shown in Table. 70% (140/200) reported cases presented no complication. However, significant morbidity was noted in 30% (60/200) cases. There were 4 maternal deaths, one in mild PE and three in both sever PE and eclampsia group, both probably due to intra cerebral hemorrhage. All these maternal complications were observed only in the two groups of severe pre-eclampsia and eclampsia. None of the women with gestational hypertension or mild pre-eclampsia had complications. This difference was statistically significant with p value of 0.001. We found that anaemia was the most commonly associated medical disorder in these women (16.4%). Three women had GDM (Gestational diabetes mellitus) with HDP, of which one presented with gestational hypertension and two developed severe pre-eclampsia in last trimester. Eleven women had twin pregnancies.

Discussion

On analyzing the maternal outcome in various group of hypertensive disorders of pregnancy 140(70%) had no complication. however significant morbidity was noted in 60(30%), 4 maternal deaths two in severe preeclampsia & 1 in eclampsia. most of the maternal complications are seen in severe preeclampsia & eclampsia. severe preeclampsia & eclampsia increases the need for critical care management & emergence of many complications like pulmonary edema, DIC, PPH & sometimes the need for ventilator support & lead to multiple organ dysfunction syndrome.a study conducted by charu *et al.* [6] shows similar results in which morbiditywas noted in 17.3% of cases. There were 2 maternal deaths in severe preeclampsia & eclampsia due to intracerebral haemorrhage. bangal VB study also shows that major part of hypertensive disorders contributed by severe preeclampsia & affects both maternal & perinatal outcome. Study conducted by wolde z segni *et al.* [7] also shows 51.9% had severe preeclampsia with 23.4% had HELLP, 27.6% had mild preeclampsia & 5.1% had gestational hypertension.

In present study we found that out of 200 women 151 (75.5%) had lower segment caesarean section, 48(24%) had normal vaginal delivery & 1(0.5%) had operative vaginal delivery. optimal route of delivery is yet to be identified in hypertensive disorders of pregnancy. In study conducted by LD Levine *et al.* [8] for mode of delivery & labor induction shows similar result as in the present study & also suggests that elective cesarean section in preeclampsia so as to reduce the chances of prolonged induction & good perinatal outcome. Although it may increase the morbidity. In present study p=0.0001 that is statistically Significant.

Out of 200 patient 28(44%) women had gestational hypertension, 27 (13.5) had mild preeclampsia, 87(43.5%) had severe preeclampsia, 54(27%) had eclampsia & only 4 patient had chronic hypertension & so this group is not included in our study. A study conducted by Wolde Z [9] shows similar result & most common complication is severe preeclampsia followed by eclampsia.

Conclusion

This study found that hypertensive disorders of pregnancy is most commonly assosciated with poor maternal outcome but in patient management good antenatal care, good critical care unit in collarabaration with multispeciality approach reduces fetomaternal mortality & morbidity to a great extent.

From the study conducted it is concluded that severe preeclampsia & eclampsia are more complicated form of hypertensive disorders of pregnancy & poses a great maternal morbidity & mortality.

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