

## Comparative Study of Maternal and Perinatal Outcome In Normotensive And Hypertensive Mothers

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**Abstract:** Background and objectives: Hypertensive disorders of pregnancy are the most common causes of adverse maternal & perinatal outcomes. Such investigations in resource limited settings help to have great design strategies in preventing maternal and perinatal morbidity and mortality. This study will evaluate and compare Feto-Maternal Outcomes in Patients of Hypertensive and Normotensive Pregnancies. Method: This was a prospective study conducted at the tertiary centre. 100 normotensive patients and 100 hypertensive patients were randomly selected. Patients beyond 20 weeks with singleton pregnancy were included and chronic hypertensive cases were excluded from the study. Result: The magnitude of pregnancy related hypertensive disorder was 46% patients were primi in hypertensive group and 32% in normotensive group. 63% hypertensive patients and 32% normotensive patients had delivered between 28-36 weeks of gestation. Perinatal mortality rate was 21% in hypertension and 3% in normotensive patients. Neonatal complications like IUGR, sepsis, RDS and birth asphyxia were 37%, 14%, 15% and 10% in hypertensive patients and 2%, 3%, 4% & 3% in normotensive patients respectively. Incidence of APH 6%, PPH 2%, DIC 7%, HELLP Syndrome 2%, renal failure 2%, respiratory complication 2% in hypertension and APH 1% in normotensive patients. Interpretation and Conclusion: Early diagnosis, proper management and selective termination will improve maternal and perinatal outcome in hypertensive mothers. Termination of pregnancy is the primary treatment for severe Hypertension. [Jimmy c NJIRM 2017; 8(5):19-21]

**Key Words:** Caesareansection, maternal, perinatal, pregnancy induced hypertension

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**Introduction:** Hypertensive disorders complicating pregnancy are common and form one of the deadly triad, along with haemorrhage and infection that results in much of the maternal morbidity and mortality related to pregnancy.<sup>1</sup>

In India, Gestational Hypertension continues to be responsible for the largest proportion of perinatal deaths resulting from prematurity and IUGR and is a major contributor to perinatal and maternal morbidity and mortality. How pregnancy incites or aggravates hypertension remains unsolved despite decades of intensive research. It is hence a challenge to be addressed and overcome if there is to be any significant improvement in maternal and perinatal health<sup>2</sup>. Recent research, in offering the possibility of prophylaxis as well as improved methods of medical and obstetric management has given us a better understanding of the etiopathology of PIH.

Currently there are exciting prospects of preventing PIH through the modulation of vasoactive, intravascular events using relatively simple medical therapy. The management of gestational hypertension, pre-eclampsia and eclampsia has gone through many changes and has achieved good results with the introduction of Newer Antihypertensive,

Different regimes of Anticonvulsants and also increased awareness among the population. The present study is undertaken to analyse the cases of pregnancy complicated by hypertensive disorders, consequences in relation to preterm delivery, IUGR, IUD, still birth and management aspect of the same. The high perinatal mortality in women with high diastolic pressure is mainly due to premature delivery and growth restriction<sup>3-4</sup>.

A secondary analysis from the World Health Organization (WHO) multicounty survey has shown that there were about 3 to 5 fold increased risk of perinatal death in women with preeclampsia and eclampsia, respectively, as compared to women with no preeclampsia or eclampsia<sup>5</sup>.

**Methods:** This was a prospective study conducted at the tertiary centre. 100 normotensive patients and 100 hypertensive patients were randomly selected. Approval was taken from AMCMET Institutional Review Board (AMCMETIRB) for publication of this study.

**Inclusion criteria:** Patients beyond 20 weeks of singleton pregnancy with hypertensive disorders and normotensive pregnancy were selected.

**Exclusion criteria:** All chronic hypertensive cases were excluded from the study.

**Operational Definitions:** Pregnant women with a systolic blood pressure (BP) < 140 mmHg and diastolic BP < 90 mmHg were categorized as normotensive. A systolic BP ≥ 140 mmHg and diastolic BP ≥ 90 mmHg measured twice six hours apart defined mild to moderate hypertension. A single record of systolic BP ≥ 160 mmHg and diastolic BP ≥ 110 mmHg was enough to define severe hypertension. Headache, blurred vision, epigastric pain, and vomiting were taken as severity symptoms.

All foetal deaths in utero (stillbirth) and all early neonatal deaths (deaths that occurred in the first week of neonatal life before discharge from the study hospital) after 28 weeks of gestation were included in the perinatal mortality. The perinatal mortality rate (PMR) was determined out of 1000 total births among women included in this study.

**Result:**

**Table 1: Incidence of Booked And Emergency Cases**

	Booked	Emergency
Hypertensive	40	60
Normotensive	70	30

**Table 2: Parity**

Gravida	Hypertensive	Normotensive
Primi	46	32
Two	20	41
Three Or More	34	27

**Table 3: Gestation Age At Which Pregnancy Terminated**

Gestation Age	Hypertensive (%)	Normotensive (%)
28 weeks-32 weeks	21	9
33 weeks-36 weeks	42	23
37 weeks or more	37	68

**Table 4: Mode of Delivery**

Mode of Delivery	Hypertensive (%)	Normotensive (%)
Vaginal	61	75
LSCS	39	25

**Table 5: Maternal Morbidity**

	Hypertensive (%)	Normotensive (%)
APH	6	1
PPH	2	0
DIC	7	0
HELLP SYNDROME	2	0
Renal failure	2	0
Pulmonary edema	1	0
Aspiration pneumonia	1	0

**Table 6: Fetal Complications**

	Hypertensive (%)	Normotensive(%)
IUD	10	2
Early neonatal death	11	1
Preterm	63	32
IUGR	37	2
Sepsis	14	3
Respiratory distress syndrome	15	4
Birth asphyxia	10	3

**Table 7: Perinatal Mortality**

	Hypertensive (%)	Normotensive (%)
Perinatal Mortality (IUD + Expired within 7days)	21	3
IUD	10	2
Expired within 7days	11	1

**Discussion:** Study suggests that more cases (60%) of hypertension are detected in emergency cases. In Parmar M T<sup>6</sup> (2012) study 58% cases of hypertensive patients are emergency case .46% patients were primi in hypertensive group and 32% in normotensive group. In Abalas E et al<sup>7</sup> (2014) study in hypertensive group 42% patients were primi.63% hypertensive patients and 32% normotensive patients had delivered between 28-36 weeks of gestation. In Ablas E et al<sup>7</sup> (2014) 30.64% hypertensives patients had delivered between 28-36 weeks of gestation. In present study LSCS is mode of delivery in hypertensive 39% as compare to 25% in normotensive mothers. This is comparable to Sachan R et al<sup>8</sup> (2013) with LSCS in

43.75% in hypertension. The rate of LSCS more between 28-36 weeks of pregnancy because of induction failure and for prevention of foetal demises. Incidence of APH 6%, PPH 2%, DIC 7%, HELLP Syndrome 2%, renal failure 2%, respiratory complication 2 % in hypertension and APH 1% in normotensive patients. In Abalos E et al<sup>7</sup> (2014) incidence of APH and PPH 10.3%, renal failure 16.8%, pulmonary edema 24.8% in hypertensive patients. Neonatal complications like IUGR, sepsis, Respiratory distress syndrome and birth asphyxia were 37%, 14%, 15% and 10% respectively in hypertensive patients and 2%, 3%, 4% & 3% in normotensive patients respectively. In Yildirim G et al<sup>9</sup> (2011) complications like IUGR, sepsis, RDS and birth asphyxia were 53.4%, 6.7%, 13.2% and 6.1% respectively in hypertensive patients. Perinatal mortality rate was 21% in hypertension and 3% in normotensive patients. This is comparable in Zenebe et al<sup>10</sup> (2011) 25% had perinatal mortality in hypertension with causes being IUGR, low birth weight babies.

**Conclusion:** Pregnancy induced hypertension is a disorder of complex origin. Exact pathophysiology is unknown. Hypertension is not a totally preventable disease. But its incidence can be decreased by proper antenatal care. Early diagnosis, proper management and selective termination will improve maternal and perinatal outcome in hypertensive mothers.

Termination of pregnancy is the primary treatment for severe Hypertension. If vaginal delivery fails Caesarean section is also a safe option. Incidence of complication in Caesarean section has become very low due to better operative techniques, proper anaesthesia, skilful surgeon, availability of blood products. Planned delivery in the tertiary centre, under expert obstetrician's care and well equipped NICU set up can reduce maternal and perinatal mortality.

**References**

1. Cummingham, F. Gray et al. "Williams Obstetric" 21st edition McGrawHill Medical Publishing Division, Chapter 24, Hypertensive disorder in pregnancy, p : 567-618
2. Cummingham, F. Gray et al. "Williams Obstetric" 22nd edition McGrawHill. Medical Publishing Division, Chapter 24, Hypertensive disorder in pregnancy pg: 761-808.

3. Dutta DC. "Textbook of obstetrics". 6th edition, Central Publishers; Chapter 17; Hypertensive disorders in pregnancy. Pg. 221-242.
4. Sibai Baha M. "Hypertension in pregnancy". Clinical Obstetrics and Gynaecology 199; 422-562.
5. Usha Krishna, Nozer K. Sheriar. OBG in perspective, pregnancy induced hypertension. Orient longman publications.
6. Mehul T. Parmar: "study of risk factor of perinatal death in pregnancy induced hypertension" (Oct-Dec 2012) National Journal of community medicine. Volume 3 Issue 4.
7. Abalos E et al: "per-eclampsia, eclampsia and adverse maternal and perinatal outcomes. A second analysis of World Health Organization Multi country survey on maternal and newborn health". BJOG 2014; 121 (Suppl. 1): 14-24.
8. Sachan R et al: "outcomes in hypertensive disorders of pregnancy in the north India population". International Journal of Women's Health 2013; 5 101-108.
9. Yildirim et al, composition of perinatal and maternal outcomes of severe pre-eclampsia, eclampsia and HELLP syndrome" J Turkish German Gynecol Assoc 2011; 12: 90-6.
10. Zenebe W et al: "hypertensive disorders of pregnancy in JIMMA University specialized hospital". Ehiop J Health Sci. November 2011 Vol. 21; No 3.
11. Ugwu et al "outcomes of severe pre-eclampsia in enugu, Nigeria. Nigerian Journal of clinical practice. Oct-Dec 2011. Volume 14. Issue 4.
12. Nankali A. et al; "maternal complication associated with severe pre-eclampsia "(2013) the Journal of obstetrics and gynaecology of India (March-April 2013) 63(2):112-115.
13. Nadkarni J et al: "perinatal outcomes in pregnancy associated hypertension". Indian Paediatrics 2001; 38:174-178.

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