

# Postnatal Recovery of Blood Pressure in Women with Hypertension in Pregnancy



## Medical Science

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### ABSTRACT

*Background: Hypertension complicating pregnancy is one of the common outcomes with unknown etiology. How pregnancy incites or aggravates hypertension remains unsolved despite decades of intensive research. Treatment remains a challenge as the exact etiology is unknown.*

*Objectives: To assess the incidence of persistent hypertension in a lady with pregnancy induced hypertension, postpartum and also to assess the risk factors for chronicity.*

*Methods: The study was an analytical cohort study conducted at Lady Goshen hospital Mangalore, Karnataka, India. From august 2011 to September 2012. 226 Women with pregnancy induced hypertension were recruited for the study and were followed up for a period of 3 months postpartum.*

*Results: 181 subjects were followed up for a period of 3 months. All subjects who developed eclampsia were primigravidas. The spectrum of hypertensive disorders in pregnancy ranged from gestational hypertension to preeclampsia to eclampsia. Gestational hypertension dominated the spectrum of hypertensive disorders in our study. Early onset of hypertension had more complications. Severe the hypertension and earlier the onset, longer the duration of antihypertensives was required postnatally. The incidence of chronic hypertension in our study is 6.3%. Those with severe preeclampsia required antihypertensives for a longer duration compared to those with gestational hypertension emphasizing regular follow up of hypertensive women following delivery.*

### Introduction:

Hypertensive disorders of pregnancy remain as an important cause of maternal and fetal morbidity and mortality. Approximately 5-7% of all pregnancies are complicated by hypertensive disorders in pregnancy.<sup>1,2</sup> It is an idiopathic multisystem disorder specific to pregnancy and puerperium.

A significant proportion of women having hypertensive disorders in pregnancy develop chronic hypertension. This study aims to identify that proportion of women, developing chronic hypertension by regular BP recording.

### Aims and objective :

- To assess the incidence of persistent hypertension in a lady with hypertension in pregnancy, in postnatal period.
- To assess the time taken for BP to normalize in the post partum period.
- To assess the period of usage of antihypertensive drugs in puerperium.

### Methodology:

This was an analytical cohort study done in LGH Mangalore . Sample size for analysis was 181 as 45 subjects lost follow up. This study was done from august 2011-september2012.

### Study subjects :

Inclusion criteria - women in antenatal period over 20 wks pe-riod of gestation with BP>= 140/90 mmHg with or without pro-teinuria.

Exclusion criteria – chronic hypertension.

Statistical analysis was done using SPSS software version 17.0.

### Materials and Methods:

Hypertension was defined according to the working group of the National high blood pressure education program (2000)<sup>3</sup>

- BP was measured in the postpartum period on day 1, day2, 1wk, 6wk and 3 months postpartum with women in sitting position.
- Patient was instructed to go to near by PHC or hospital for BP monitoring in between, in case they could not report back to our hospital.
- Analysis of women requiring antihypertensives postnatally was done
- Relation of hypertension with age, parity, onset during pregnancy, severity and its relation to chronicity was studied .

### Results:

226 subjects were recruited for the study. 45 subjects could not be followed till 3 months. Sample size for final analysis was 181 subjects.

**Table 1:Parity**

Parity	Number	Percentage
Primi	100	44.2%
Multi	126	55.8%

There was equal distribution of Primi and multigravidas among the subjects.

**Table 2: Age distribution**

Age interval	Number	Percentage
<20	16	7.07%
21-25	65	28.76%
26-30	100	44.24%
31-35	33	14.6%
>35	12	5.3%

The subjects in the age group of 26-30yrs constitute the majority of the study population being 44.24%.

**Table 3: Hypertension category distribution in study subjects**

Category	Number	Percentage
Gestational HTN	76	55%
Mild PE	10	14%
Severe PE	28	29%
Eclampsia	10	0
Severe PE with impending signs	2	2%

All subjects with eclampsia were primigravida.

**Table 4: classification of hypertensive disorders according to severity**

Category	Number	Percentage
Gestational HTN	131	57.96%
Mild PE	24	10.61%
Severe PE	57	25.22%
Severe PE with impending signs	4	1.76%
Eclampsia	10	4.24%

Gestational hypertension dominated the spectrum of hypertensive disorders.

**Table 5: Average gestational age at diagnosis of hypertension**

Category	Number	Mean gest. Age	Std. deviation
Gestational HTN	131	36.92	2.657
Mild PE	24	36.79	2.670
Severe PE	57	33.44	3.433
Severe PE with impending signs	4	28.5	7.141
Eclampsia	10	30.8	3.584

Subjects with early onset of hypertension had more complications.

**Table 6: Antihypertensive drug required in postpartum period**

Category	Number	Percentage
Gestational HTN	99	75%
Mild PE	20	83.33%
Severe PE	51	89.47%
Severe PE with impending signs	4	100%
Eclampsia	10	100%

Severe the hypertension and earlier the onset , longer the duration of antihypertensive requirement.

**Table 7: Subjects requiring antihypertensive drugs 3 months postpartum**

Category	Number	Percentage
Gestational HTN	3	2.85%
Mild PE	1	5.55%
Severe PE	7	14.89%

The above data emphasizes on regular follow up of cases of hypertensive women following delivery as 3 subjects of gestational hypertension had persistence of hypertension and required antihypertensive drug 3 months following delivery.

**Table 8: persistence of hypertension 3 months following delivery**

Category	Number	Percentage
Gestational HTN	3	2.85%
Mild PE	1	5.55%
Severe PE	7	14.89%

As the severity of hypertension increases, tendency for chronicity also increases.

**Discussion:**

Hypertensive disorders can develop during pregnancy labour and puerperium. Very little information is available regarding the incidence, risk factors, optimal management and subsequent outcome of postnatal hypertensive disorders. It is recognized that the post partum period continues to pose a risk of preeclampsia, with upto 44% of eclamptic convulsions occurring during this period. Most will occur within 48 hrs after delivery while only 26% develop seizures after 48hrs of delivery. Therefore women with preeclampsia should be closely monitored initially in the postpartum period with four hourly observations. Early discharge from hospital is to be discouraged. This study was conducted to know the incidence of chronic hypertension, in the postpartum period, as it would help us further to educate the women better about the associated risks, even after delivery

Predisposition to develop hypertension in pregnancy	our study	Others	others
Age group	26-30 yrs	Isra university Hyderabad 30-40yrs	
Parity	Primi for developing gestational HTN and eclampsia	Jimma et al Primi	K Khoo C K & Kwek et al nullipara
Gestational age at diagnosis of severe pre eclampsia	33.44 wks	Berek et al 36 wks	

The study conducted at Lady Goschen Hospital, Mangalore, included 226 subjects, among them 44.2% were primigravidas and 55.8% were multigravidas. The subjects in the age group of 26-30 yrs constitute majority of the study population being 44.24%, where as a study done by Naheed parveen<sup>4</sup> et al at Isra university Hyderabad, showed that women in the age group of 30-40yrs were at high risk of developing hypertensive disorders of pregnancy. Hypertensive disorders are more common in primiparas. A study conducted by wolde Z et al<sup>5</sup> at the jimma university hospital also showed preponderance of hypertensive disorders in primiparas in comparison to multiparas. In our study primigravidas were more prone to develop gestational hypertension and eclampsia. All subjects with eclampsia were primigravidas, whereas multigravida were more prone to develop mild and severe preeclampsia. Another study done by Loi K, Khoo C.k and Kwek K<sup>6</sup> et al in 2007 at Singapore, found severe preeclampsia to be higher in nulliparous women than in multiparas, but the difference was not statistically significant. Out of the subjects studied 57.96% had gestational hypertension, thus constituting the majority group. Earlier the onset of hypertension, severe the disease as noted in literature. Our study subjects with early onset hypertension also had more complications. In a study done in Singapore<sup>6</sup>

to assess risk factors in women with hypertension complicating pregnancy, the mean gestational age at diagnosis in severe preeclampsia group was 33 weeks and in a study done by Berks et al<sup>7</sup>, the average gestational age at diagnosis of hypertension complicating pregnancy was 31 weeks, with the range of 21-42 weeks. In our study patients of severe pre eclampsia with impending signs were diagnosed earliest at 28 weeks, followed by patients with eclampsia i.e 30.80 weeks. The mean age for diagnosis of gestational hypertension was 36 weeks. The impending signs in women affected with severe preeclampsia, could have led to reporting of patients earlier, leading to earlier diagnosis of high blood pressure in these subjects, when compared to other study groups. Among the spectrum of hypertensive disorders, severe the hypertension, longer duration of antihypertensives were required. Three among 105 subjects of gestational hypertension, one among mild preeclampsia and seven in severe preeclampsia required antihypertensives in postpartum period for blood pressure's to normalize and p value was found to be significant statistically, necessitating regular follow up of case of hypertensive women following delivery. out of 131 subjects having gestational hypertension 26 lost followup and among 105 remaining subjects,

3 women developed chronic hypertension ( 2.85%). Among women with mild preeclampsia 6 lost follow up and out of 18 subjects, 1 developed chronic hypertension ( 5.55 % ) Amongst 67 subjects having severe preeclampsia, 10 lost followup and 7 developed chronic hypertension (14.89%) . Hence proving that , as the severity of hypertension increases tendency for chronicity also increases.

The incidence of chronic hypertension in the present study 6.3% whereas in a study done by Berks<sup>7</sup> et al it was 18% and in a study done by Ndayambagye EB<sup>8</sup> et al it was 27.7%. The difference in the incidence could probably be attributed to a more vigilant and longer duration of follow up.

#### Conclusion:

The incidence of persistent hypertension in the present study is 6.3%. Therefore there is a need for close monitoring of blood pressure, after childbirth and the need for regular follow up in puerperium at least for a period of two years, as these patients may progress to develop chronic kidney disease later on.

## REFERENCE

1. Ness RB, Roberts JM. Epidemiology of Hypertension. In: Lindheimer MD, Roberts JM, Cunningham FG, eds. Chesley's Hypertensive Disorders in Pregnancy. 2nd ed. Stamford, CT: Appleton & Lange; 1999:43-65 (3rd edition revision in press, May 2009, Elsevier). | 2. Villar J, Say L, Gulmezoglu AM, et al. Pre-eclampsia Eclampsia: a Health Problem for 2000 years. In: Critchly H, MacLean A, Poston L, Walker J, eds. Pre-eclampsia. London, England: RCOG Press; 2003:189-207. | 3. National High Blood Pressure Education Program Working Group Report on High Blood Pressure in Pregnancy. Am. J. Obstet. Gynecol. 1990;163 (5 Pt 1): 1691-712. | 4. Naheed Parveen, Gulfareen Haider, Imran Ali Shaikh, Ikram din Ujjan. Presentation of predisposing factors of pregnancy induced hypertension at Isra University Hospital, Hyderabad.J Liaquat Uni Med Health Sci Dec 2009;8(3):242-4. | 5. Wolde Z, Segni H, Woldie M. Hypertensive disorders of pregnancy in jimma university specialized hospital. Ethiop J Health Sci. 2012;21 (3): 147-54. | 6. Loi K, Khoo CK, Tan KH, Yeo GS, Kwek K et-al. A review of 93 cases of severe preeclampsia in Singapore: are there risk factors for complications?. Singapore Med J. 2007;48 (9): 808-12. | 7. Berks D, Steegers EA, Molas M, Visser W. et-al. Resolution of hypertension and proteinuria after preeclampsia. Obstet Gynecol. 2009;114 (6): 1307-14. | 8. Ndayambagye EB, Nakalembe M, Kaye DK. Factors associated with persistent hypertension after puerperium among women with pre-eclampsia/eclampsia in Mulago hospital, Uganda. BMC Pregnancy Childbirth. 2010;10 (1): 12. |