

A Study on Postpartum Hypertension in A Tertiary Care Centre.

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Background: Postpartum blood pressure (BP) is highest three to six days after birth when most women have been discharged home. A significant rise in BP may be dangerous (e.g., lead to stroke), but there is little information about how to prevent or treat postpartum hypertension.

Aims And Objectives

To analyse the trends of blood pressure in the postnatal period in patients with hypertensive disorders of pregnancy. To emphasise the significance of vigilant monitoring of blood pressure in the postpartum period atleast for 6 weeks.

Place And Period Of Study

At Coimbatore medical college hospital for a period of three months from July to September 2016.

II. Materials And Methods

A prospective study involving around 100 inpatients of hypertensive disorders of pregnancy who delivered in our hospital were included in our study. Strict vigilant monitoring of blood pressure every 6 hours was done for these patients and were documented for fourteen days postpartum.

III. Review Of Literature

Hypertensive disorders of pregnancy are a major cause of maternal mortality and morbidity, especially in developing countries.¹ Hypertension may be present before or during pregnancy or postpartum.² Postpartum hypertension can be related to persistence of gestational hypertension(GH), preeclampsia, or preexisting chronic hypertension, or it could develop de novo secondary to other causes and continue to pose a risk to maternal well-being. These risks are magnified as many patients present after hospital discharge and go unrecognized because of decreased medical surveillance after delivery.

Incidence

Research studies dealing with postpartum hypertension are usually limited by analysis of data from a single center, focused on inpatients in the immediate postpartum period (2-6 days), or describing patients who were readmitted because of preeclampsia-eclampsia,severe hypertension, or complications related to hypertension.¹²⁻¹⁷ Despite the limitations, the reported prevalence of de novo postpartum hypertension or preeclampsia ranges from 0.3 to 27%.

Etiology And Differential Diagnosis

The etiology and different diagnosis of postpartum hypertension is extensive, but it can be focused based on clinical and laboratory findings as well as response to treatment of BP. GHT-preeclampsia(new onset or preexisting prior to delivery) is the most common cause, however, other life-threatening conditions such as pheochromocytoma and cerebrovascular accidents should also be considered..

New Onset Postpartum Hypertension And Preeclampsia

Normal pregnancy is characterized by increased plasma volume in association with sodium and water retention in the interstitial tissue. This is further aggerated in women with multifetal gestation. In addition, many women receive intravenously a large volume of fluids during labor, delivery, and postpartum. Large volumes of fluids are also given because of regional analgesia-anesthesia or during cesarean section. In some women, acute or delayed mobilization of large volume of fluid into the intravascular space, particularly in association with suboptimal renal function, can lead to a state of volume overload resulting in hypertension.

In women with preeclampsia,there is a decrease in BP within 48 hours, but BP increases again between 3-6 days postpartum.²⁰ In some patients,cerebral manifestations and/or deterioration in maternal laboratory findings will manifest for the first time postpartum leading to the development of eclampsia or HELLP syndrome.

Complications

The potential complications of postpartum hypertension are serious and can be lifethreatening and include eclampsia,stroke,congestive heart failure,renal failure and permanent disability..this risk may persist for 4 weeks postpartum. Therefore emphasis has shifted to continue close monitoring of patients for a longer period of time.,as well as patient and provider education regarding the signs and symptoms of postpartum hypertension and preeclampsia.

Current Recommendations

Recommendations take into account that blood pressure that initially decreases after delivery may increase 3 to 6 days postpartum in patiens with preeclampsia. The current hypertension guidelines suggest blood pressure monitoring for for 72 hours postpartum and then again 7 to 10 days postpartum as well.patients should be evaluated for other causes of hypertension (eg,thyroid disease , adrenal disease, cardiomyopathy ,lupus, hemolytic uremic syndrome).patients with persistent postpartum hypertension beyond 24 hours should have any medications that could be exacerbatng blood pressure. (eg.vasoconstrictive medications, NSAIDS) discontinued.Patients with signs and symptoms with preeclampsia or HELLP syndrome should be treated with magnesium prophylaxis for 24 hours. Antihypertensives must be started for 150/100 mm of Hg..

IV. Tables And Discussion

Table 1

Age Of Presentation	No.Of Patients With Hypertensive Disorders.
< 20	28
21-30	60
31-35	10
>36	2

In our study ,we found that 60% of hypertensive patients were found in the age group of 21 to 30 years.

Table 2

Age	Ght	Pet	Sev Pet	Ecl
<20	7	4	14	3
21-30	27	6	24	3
31-35	4		6	-
>36	-	1	1	-

The incidence of preeclampsia and postpartum hypertension were higher in the age group of 21-30 years.

Table 3 Gestational Age At First Diagnosis

Gestational Age At Presentation	Gestational Hypertension	Severe Preeclampsia
24-28 Weeks	2	3
28-32 Weeks	12	14
32-36weeks	14	23
>36weeks	18	14

The incidence of preeclampsia was higher at the gestational age of more than 32 weeks.This may be due to the increased frequency of AN visits beyond this gestational age.

Table 4 Mode Of Delivery

	LSCS	NVD
Gestational Hypertension	21	19
Severe Preeclampsia	20	9
Imminent Eclampsia	15	13
Eclampsia	2	1

The outcome and mode of delivery in these patients were analysed and it was found that around 58% of patients ended up in Caeserean sections..

Table 5 Postpartum Hypertension

Blood Pressure	Day 3	Day 10
<140/90	55	69
140/90 -160/100	33	28
>160/100	12	03

Postdelivery, the blood pressure values were vigilantly monitored and documented for 14 days. On analysis we found that there was a significant (55%) fall in blood pressure values on the third day (ie after 48-72 hrs of delivery). But on keen observation we found that by day 10, only 69% of patients had normal blood pressure. remaining 31% still had high BP values, warranting the significance of continuing antihypertensive medications. Adding to this fact, among those 55 patients who had a fall in BP on the 3rd day, nine patients (16.3%) had a sudden rise in blood pressure on day 9 and day 10 which implies the importance of postpartum BP monitoring.

Table 6

	DAY 3		DAY 10	
	<140/90	>140/90	<140/90	>140/90
Ght	32	3	30	5
Preecl	6	5	7	4
Sev Pet/Ecl	17	37	32	22
	55	45	69	31

From this table, we infer that in severe preeclampsia patients, even on day 10, nearly 22% still recorded high BP values. This implies that BP monitoring has to be continued even after discharge for 6 weeks postpartum.

Table 7

Diagnosis-Termination Interval	Postpartum Hypertension >140/90		
	Day 3	Day 10	Ht Percent
>4 Weeks	20	16	80%
<4 Weeks	17	13	76%
Immediate	8	2	25%
	45	31	

From this table, we interpret that the longer the exposure to the pathology in the antenatal period, the higher the incidence of postpartum hypertension.

Table 8 Induction Delivery Interval Vaginal Delivery

Nvd	Postpartum Hypertension >140/90				
		Day 3	%	Day 10	Percent
>12 Hrs	16	13	81	10	62
6-12 Hrs	15	12	80	6	40
<6 Hrs	11	5	45	1	9
		30		17	

We also found that the induction – delivery interval was inversely proportional to the persistence of postpartum hypertension.

Table 9

Elective Lscs-16
Emergency Lscs-42

Em.Lscs	Postpartum Hypertension >140/90				
	Ind-Lscs Int	Day 3	%	Day 10	Percent
	16	7	43%	2	12.5%
< 6hrs	17	12	70%	5	29%
>6 Hrs	9	8	88%	7	77%

Similarly when the induction-LSCS interval is >6 hours, there was only 10% reduction in blood pressure by the 10th day.

V. Conclusion

From our study, we found that even on 10th day, many of the patients had elevated blood pressure in spite of a decreasing trend on the 3rd day. Thus, we infer that routine antihypertensive therapy must be continued for all patients with preeclampsia at least for 4 weeks postpartum. We also found that induction-delivery interval and diagnosis-termination interval were inversely proportional to the rate of fall in blood pressure. Hence, sooner the termination of pregnancy, better the prognosis in the postpartum period. Since many cases of postpartum hypertension are due to ‘residual’ preeclampsia or the effect of volume and/or NSAID therapy, reevaluation of patients in 2 to 4 weeks of hospital discharge is quite reasonable.

During this immediate postdischarge period, we also advocate regularly measured home or self-BP measurement as an important step to follow any transitions in BP that might occur in women with postpartum hypertension.

VI. Summary

In summary, there are several causes for postpartum hypertension; some may be benign (mild GH or mild chronic hypertension) whereas others can be life-threatening such as severe preeclampsia or stroke. Therefore, a high index of suspicion for secondary dangerous causes of hypertension should be considered when evaluating such women. By directing efforts and educating health care providers about the continued monitoring, reporting, and prompt evaluation of symptoms in the postpartum period, it is expected that some of the maternal complications will be avoided.

Evaluation and management of women with postpartum hypertension should be guided by obtaining a detailed history, careful physical examination, selective laboratory and imaging studies, and response to initial treatment. Until now, the focus of pregnancy-associated hypertension research has been on antepartum hypertension, with only a few studies and reviews addressing the postpartum period. There is no doubt that antepartum hypertension is a high-risk situation, and that delivery of a healthy, live baby is of utmost importance. Fortunately, maternal catastrophes such as death, stroke, and seizures are rare, but there is mounting evidence that the incidence of postpartum thrombotic and hemorrhagic strokes is increasing just as maternal hypertension is rising.

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