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Role of Postpartum Curettage in the Control of Hypertension in Severe Pre-eclampsia

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Abstract

Introduction: *Pre-eclampsia affects 3-7% of pregnancies and is a major contributor to maternal morbidity and mortality. Termination of pregnancy is the definitive management to abate the pathophysiology of pre-eclampsia. However during post-partum period also patient is at risk of eclampsia, worsening of hypertension and venous thromboembolism. Post-partum curettage immediately following delivery is technically an easy procedure which will remove the trophoblast and can accelerate the recovery from the disease process.*

Materials and Methods: *We assessed the effect of post-partum uterine curettage on the maternal recovery from pre-eclampsia. This was a case control study involving 100 patients. They were randomized and allocated to either the study arm or the control arm. Immediately following delivery gentle curettage of the uterine cavity was done to remove the trophoblast. Blood pressure was monitored 4th hourly for first 48 hours. Protienuriaand uric acid levels were also assessed before and 48 hours after delivery in both the study and control groups and the data were compared.*

Observations and Results: *Among the patients who were curreted, 93% normalized their blood pressure to less than 140/90 mm of Hg, while in the control group only 37% had normal blood pressure on third post-natal day. Regarding the need for postpartum anti hypertensives, 32% in group 1 needed anti hypertensives compared to 98% in group 2.Regarding post-partumprotienuria, 48 hours after delivery 22% in group1 and 43% in the control group had protienuria. The mean fall in uric acid levels in group 1 was 2.4mg against 1.48mg in control group.*

Conclusions: *We conclude in our study post-partum uterine curettage was found to accelerate the recovery from severe pre-eclampsia in post-partum period. This cost effective easy to perform intervention need to be tested in a larger sample so that the same can be considered for routine management of severe pre-eclampsia.*

Introduction

Normal pregnancy is a period of blissful, expectation for the parents. However, all pregnancies are potentially at risk of increased maternal mortality or morbidity and perinatal mortality. Pre-eclampsiais one of the common complications affecting 3-7% of all pregnancies. And it directly contributes to 10%–15% of maternal deaths[1].

Pregnancy induced hypertension (PIH) remains one of the unsolved mysteries of obstetrics. Many theories have been suggested regarding its

aetiopathogenesis, which range from genetic predisposition[2] to defective trophoblastic invasion of spiral arterioles[3]. It is a multisystem disorder with a propensity to affect almost all major organ systems of our body. Usually it is stated that it is adisorder peculiar to pregnancy and ultimately reversal of all pathophysiology will revert to normal after termination of pregnancy. Basic management objectives for any pregnancy complicated by pre-eclampsia are

- Termination of pregnancy with the least possible trauma to the mother and fetus.
- Birth of an infant who subsequently thrives
- Complete restoration of the health of the mother

Severe pre-eclampsia demands anticonvulsant and antihypertensive therapy followed by delivery. After delivery, there is usually rapid improvement, although at times, hypertension may worsen transiently[4]. It may necessitate anticonvulsants and antihypertensive in the post-partum period to bring down the diastolic BP of 110 mm of Hg or higher. The mother is at risk of postpartum eclampsia and other complications like intra cerebral bleeding, renal failure etc. if post-partum BP control is not adequate[5]. Women can be safely discharged only after severe hypertension has abated and patient is otherwise well. Discharging the patient while she is still on anti-hypertensive like nifedipine has the danger of profound and symptomatic hypotension at home as the hypertension spontaneously abates during the first two weeks post-partum[6].

In this context, comes the importance of a method that will help in bringing down the blood pressure in the immediate post-partum period thereby decreasing the maternal morbidity, decreasing the necessity of post-partum anti-hypertensive and enabling early discharge of patients from the hospital. Post-partum curettage is a safe, effective and inexpensive method of tackling the problem. It can be done with no extra discomfort to the patient immediately following delivery and can be of use in rapid control of BP in the immediate postpartum period. We conducted a randomized controlled trial to assess the efficacy of postpartum curettage in controlling BP and other parameters that point to the severity ofpre-eclampsia.

Objectives

1. To assess whether post-partum curettage in severe pre-eclampsia will help in bringing down the blood pressure rapidly in the post-partum period.
2. To see how it affects post-partum proteinuria and the serum uric acid levels.

Study design -Prospective case control study

Study setting- Department of Obstetrics and Gynaecology, Govt. Medical College, Thiruvan-anthapuram.

Materials and Methods

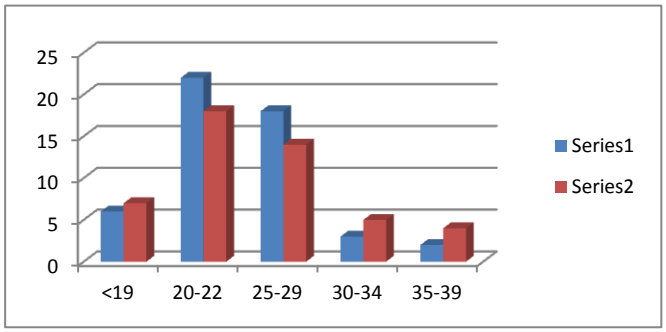
100 patients who were admitted to the SAT Hospital labour wards with severe pregnancy induced hypertension during the period March 2013-March 2014 were selected randomly for the study.50 of these subjects were selected to undergo post-partum curettage and they were designated as cases (Group 1) and the rest 50 served as controls or Group 2. Selection was by random sampling. Random numbers were sealed in an envelope which was unsealed after recruitment. All patients had blood pressure >160/110 with or without proteinuria of 1+ or more. All were cases of singleton pregnancies. Those with history of preexisting renal disease, chronic hypertension and history of chronic vascular disease were excluded. Besides detailed history, early dating information all the patients were evaluated with essential investigations including liver function tests, renal function tests, platelet counts, Hb, PCV and urine for proteins. All of them were on anti hypertensives. Informed consent was taken before recruitment into the study.

Intervention

The 50 cases in the study arm were subjected to gentle post-partum curettage with the blunt edge of the curette immediately after delivery irrespective of the mode of delivery. During LSCS it was done prior to uterine closure.50 patients in the control arm were managed in the conventional manner. Post-partum BP was recorded 4th hourly for the first 48 hours and daily thereafter in both groups. Post-partum uric acid and persistent proteinuria was also measured after 48 hours post-partum. The data was analyzed using SPSS software.

Observations and Results

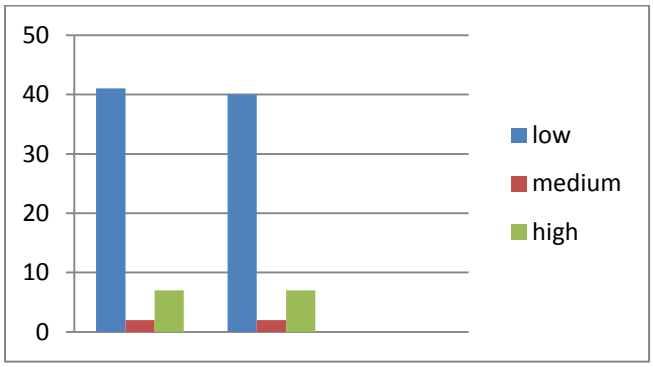
Distribution according to age



t=1.3; p=> 0.05

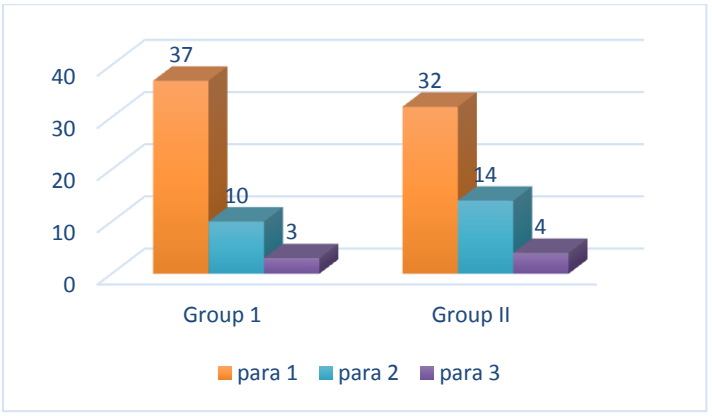
Mean age in group I is 24.4 years and in group II is 25.6 years with a standard deviation of 4.1 and 5.1 respectively.

Socio-Economic status



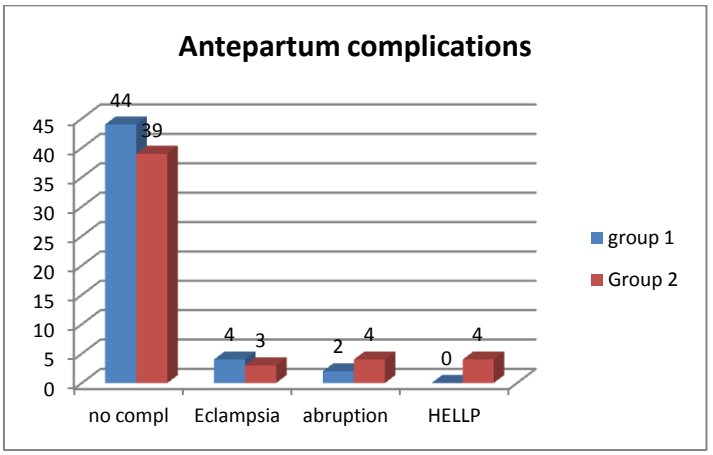
Chi-square = 0.21: p=>0.05

Parity

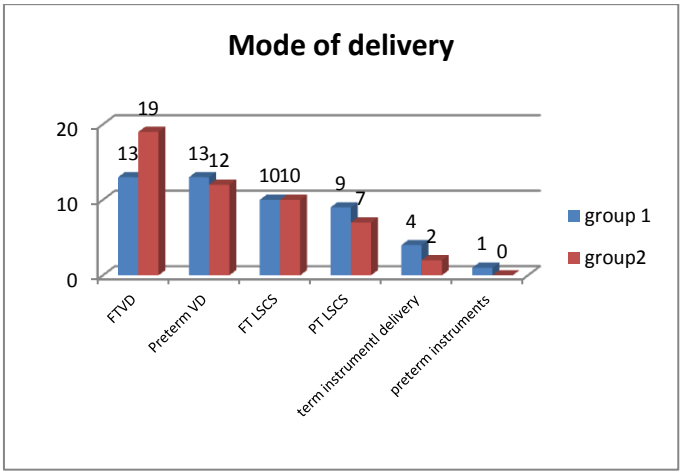


Chi-square = 1.16; p=>0.05

Mean gestational age at onset of hypertension in group 1 is 30 weeks and in group 2 is 30.2 weeks, with a standard deviation 3.1 in each group. Mean gestational age of termination of pregnancy is 36.1 in group 1 and 35.6 in group 2 with a standard deviation of 1.6 and 2.2 respectively. There is no statistically significant difference in the demographic data between two groups.



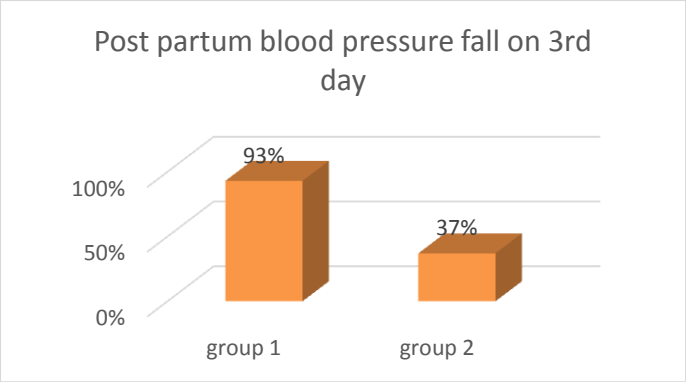
Mode of termination of pregnancy



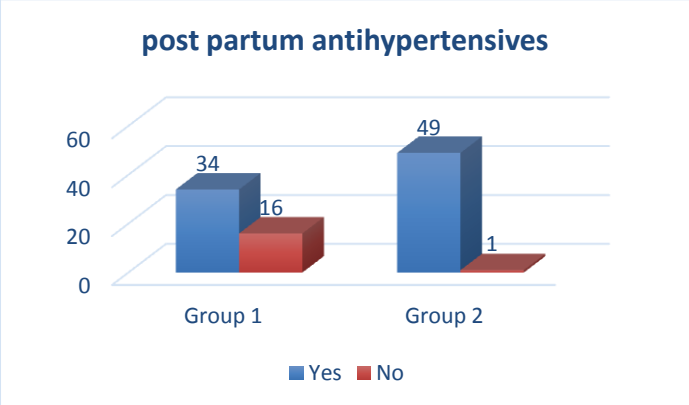
The reasons for termination between the two groups were more or less similar with no statistically significant difference between them. The most common reason for termination was uncontrolled BP.

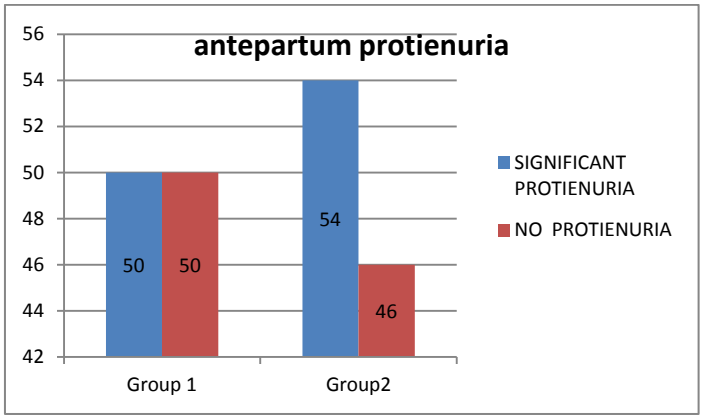
There was no statistically significant difference between the two groups regarding the mode of delivery

Post-natal day on which BP came down- 93% of case group BP came down to <140/90 mmHg on 3rd post-natal day compared with control group in which only 37% had the BP becoming normal.



Need of Post-Partum Antihypertensive-There was a significant reduction in the need for post-partum antihypertensive in the study population compared to control group. 32% of the study group needed postpartum antihypertensive as against 98% in the control group. (P value <.001)

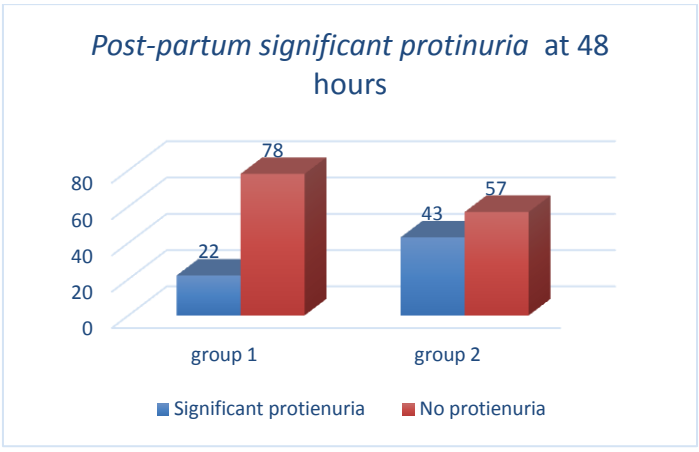




Chi-square value-2.34

P value>0.05

There was no statistically significant difference in proteinuria between the study and control group



Chi square vale-12.96

P value <.0.001

Antepartum uric acid levels

	Study group	Control group
>5.9	92 %	82 %
<5.9	8 %	18 %

P value >0.05

There is no statistically significant difference between the two groups. Mean serum uric acid level of the study group is 6.7 and the control group is 6.5 with a standard deviation of 0.5 and 0.6 respectively.

Post-Partum serum Uric Acid-87% of the sample population had raised uric. Acid levels above 5.9 mg%. The fall in the uric acid level in the case group was 2.4 mg% compared to1.48 mg% in control group. This is found to be statistically significant

Discussion

Severe pre-eclampsia and eclampsia are serious complications of pre-eclampsia which can lead to significant maternal morbidity and mortality. Hypertensive disorders of pregnancy is an important contributor to maternal mortality accounting to 8% of cases. Post-partum complic-ations include worsening hypertension, post-partum eclampsia, pulmonary oedema, stroke and thromboembollism.[5]. Up to 44% of cases of eclampsia develop during the postpartum period.[7] Pre-eclampsia is a multisystem disorder with endothelial activation acting as the key point in the pathogenesis[8]. Behind the endothelial activation is the defective placentation characte-rized by defective invasion of the maternal spiral arteries by the cytotrophoblast. As a result spiral arteries retain their muscular wall leading on to poor perfusion of the foetoplacental unit with resultant elaboration of inflammatory mediators which produces endothelial activation resulting in the multisystem involvement of pre-eclampsia.

As we all know, termination of pregnancy is the ultimate treatment of severe pre-eclampsia. And suitable time and mode of termination is individ-ualized taking into consideration the gestational age, maternal condition, fetal factors etc.

Sudden worsening of hypertension can occur in a subset of patients even after delivery and if not controlled properly can predispose to eclampsia. This may be due to the mobilization of edema fluid from peripheral tissues with redistribution to vascular component. Hence BP should be monitored closely during the post-natal period as well and antihypertensive therapy given as needed. In pre-eclampsia BP can take up to 3 months to return to normal. Alpha methyl dopa is a good choice during post-partum as it can produce postpartum depression[9]. Labetalol, nifidi-pine, atenolol, and captopril are currently used singly or in combination for control of postpartum hypertension[9].

Here lies the importance of gentle post-partum curettage to accelerate the recovery of mother from hypertensive and other biochemical markers of severity of pre-eclampsia. This randomized controlled trial shows that the patients had a statistically significant recovery regarding the parameters analyzed in the study. By 3rd postnatal day BP became <140/90 in 93% of study population compared to 37% in control group. Need of post-partum antihypertensive therapy was also significantly less (32% Vs 98% in control group.)

Initially there was no significant difference in the degree of protienuria in the study group compared to control(50vs 54%).On post-natal follow up after 48 hours there was a statistically significant difference in the degree of protienuria between study arm compared to control arm (.22%vs 43%). This was found to be statistically significant.

Magnan EF conducted a study in a subset of 32 pre eclamptic women[10]. They were randomly assigned to undergo ultrasound directed curettage following delivery or to have no curettage. There was a significantly decreased MAP at each 2 hour point for the first 24 hours compared with those who were not curetted. Similar outcome measures were also noticed regarding urine output and postpartum platelet counts.

Hema et al and colleagues have also reported a similar outcome in studies of postpartum curettage in severe pre eclamptic women[11]. So we recommend that post-partum curettage can be considered as a useful adjunct in the early recovery of pre eclamptic women in the post-partum period.

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