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A COMPARATIVE STUDY BETWEEN LABETALOL AND METHYLDOPA IN MANAGEMENT OF PREECLAMPSIA IN A TERITIARY CARE TEACHING HOSPITAL

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ABSTRACT
Preeclampsia complicates 3 to 10% of pregnancies in primigravida and is variable and less in multipara. It is the second common cause for maternal morbidity, mortality and iatrogenic preterm deliveries. To compare the efficacy and safety of labetalol versus Methyldopa in the management of preeclampsia. The study was conducted in Rajiv Gandhi Institute of Medical Sciences, Kadapa for 2 years (2013-2015) on 100 pregnant women with preeclampsia were randomly assigned, 50 were treated with two different anti-hypertensives Labetalol (Group A) and 50 with Methyldopa (Group B) randomly with matching distribution. The results shown that Labetalol is effective & early onset of action with fewer side effects compared to Methyldopa on the study patients. The chances of spontaneous onset of labor was greater, those who were induced had better Bishops score. On concluding the study, Labetalol is safe, quicker control of blood pressure and lesser side effects and thus advantageous over Methyldopa in the management of preeclampsia.

KEYWORDS: Preeclampsia, Labetalol, Methyldopa.

INTRODUCTION
Preeclampsia complicates 3 to 10% of pregnancies in primigravida and is variable and less in multipara. It is the second common cause for maternal morbidity, mortality and iatrogenic preterm deliveries. Early diagnosis and treatment can prevent Eclampsia and neonatal complications, and helps in prolongation of pregnancy. Methyldopa is time tested and most commonly used drug with good efficacy and safety but takes longer time to act. Labetalol is effective, has early onset of action and available as both oral and injectable form. So we compared both these drugs with regards to control of BP, prolongation of pregnancy and control of convulsions.

METHODOLOGY
This study is a prospective study conducted at Rajiv Gandhi Institute of Medical sciences, Kadapa for 2 years (2013- 2015). Informed consent was taken from the patient and the patient representatives for willing participation of study. A total of 100 pregnant women with preeclampsia (BP>140/100) were included in the study. Gestation of 20 weeks to term. They were randomly assigned to 2 groups of 50 each. At the time of admission detailed history of the patient was taken, Blood Pressure recorded, Investigations included complete Haemogram, platelet count, Blood Urea, Serum Creatinine, Uric acid, LFT, Fundoscopy, USG and Doppler in some cases.

Group A received Tab Labetalol 100mg twice daily to start with and dose was increased every 3 days if required up to a maximum of 2400mg. Group B were given methyldopa 250 mg thrice daily and was increased once in 3 days till a max. Dose of 2000mg / day. If the blood pressure was not controlled after maximum dose, additional drug was added and treatment was considered as failure. All women with gestation less than 34 weeks were given steroid prophylaxis for fetal lung maturity. Those with impending eclampsia were given MgSO4. Then the patients were followed till delivery. Various data noted.

STATISTICAL METHODS
Descriptive and inferential statistical analysis is used. Student t test for on continuous scale and Chi-square/Fisher Exact test for parameters on categorical scale between two groups.

RESULTS

Distribution based on age

All patients were distributed based on age factors between ages of 20 – 40 years being admitted in Gynacology department, RIMS Hospital, Kadapa.

Table 1: Distribution based on age

Age group	Number of patients	Percentage
20 – 25	62	62%
26-30	32	32%
30 -35	4	4%
35-40	2	2%

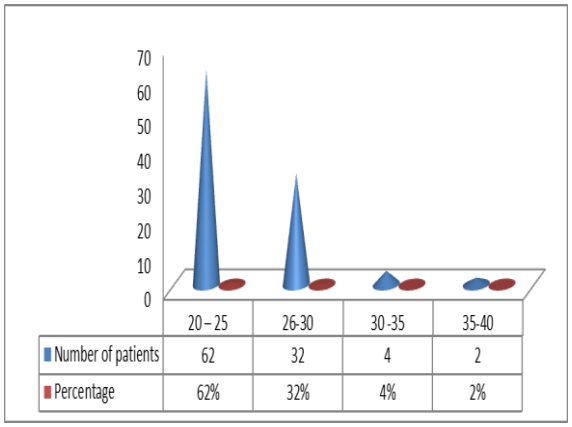

Figure 1: Distribution based on age

The mean age of patients in group A was 26.42±4.59 and group B was 26.4±4.10 which was similar. Primis were 29 (58%) in group A and 25 (50%) in group B (Table 2).

Table 2: Gravida distribution

Gravida	Labetalol (A)	Methyldopa(B)
Primi	29(58%)	25(50%)
G2	12(24%)	15(30%)
G3	05(10%)	08(16%)
G4	04(8%)	04(4%)

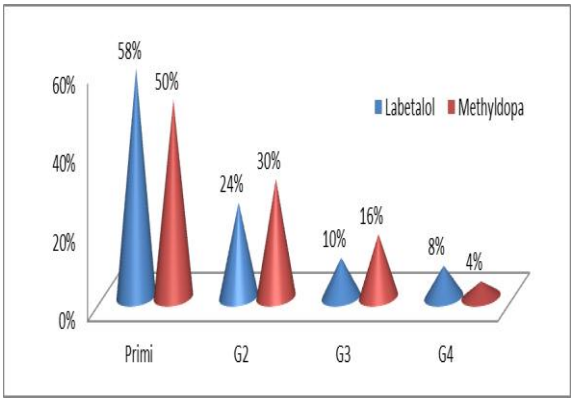

Figure 2: Gravida distribution

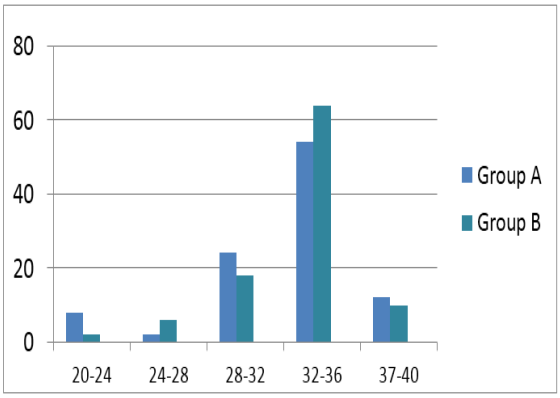

Figure 3: Gestational Age -weeks

Most patients were between 32-36 weeks gestation. 545 in Labetalol group and 645 in Methyldopa group. (Figure 3). Reena Verma et al, [1] Walker Jj et al, [2] also had most patients with gestation of 32 to 36 weeks.

Control of BP was significant in both the groups but more in labetalol. Mean systolic in labetalol group decreased from 148.4±4.58 to 137.3±7.3 and diastolic 98.72±4.49 to 88.92±96 in 72 hrs, in Methyl dopa it was from 148.2±44 to 140.4±7.9 and diastolic 90.97±6.04. Mean Arterial Pressure change was significant (0.008) in labetalol group when compared to Methyldopa group as shown in table 2.[1,2,3]

Table 4: Mean Arterial Pressure (MAP) in mmHg

Study	Drugs	Pre treatment	Post treatment
Our study	Labetalol Methyldopa	115.35±3.48 114.58±2.98	99.69±5.96 102.76±5.43
Reena Verma et al[1]	Labetalol Methyldopa	117.74±8.63 118.51±7.53	93.03±7.08 94.36±8.04
G. D. Lamming et al[4]	Labetalol Methyldopa	112.9 110	91.7 100.8

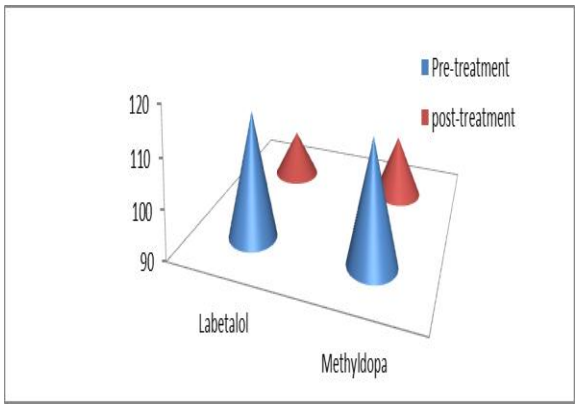

Figure 4: Mean Arterial Pressure (MAP) in mmHg

Need for additional drugs for control of BP was 16% in Labetalol and was 32% in Methyldopa group.[5,3] Adverse effects were seen in Methyldopa group such as postural hypotension in 1, drowsiness in 6 and headache in 4 patients whereas with Labetalol there were no side effects.-[4] 80% of patients in labetalol group delivered at 37 to 40 weeks and 28% had spontaneous vaginal delivery and 26% had to be induced where as in methyldopa group only 60% continued till term and only 14% had spontaneous deliveries and 32% had to be induced which is stastically significant. The birth rate of newborns did not differ in both groups. Perinatal deaths in both groups was 2 % due to RDS in preterm neonates.[6]

CONCLUSION

Preeclampsia in pregnancy is one of the major causes of maternal and foetal morbidity and mortality. Many drugs have been used for the treatment. Labetalol is very effective and early control of BP is seen so the need for additional drug is less pregnancy can be prolonged to achieve fetal maturity. The chance of spontaneous onset of labour is greater and reduces the induction rate. In emergencies injectable form of labetalol can be used. Labetalol has lesser side effects when compared to methyldopa. To conclude Labetalol is safe, early control of BP is seen and therefore has an advantage over Methyldopa.[1,2,3] This study requires further research to be continued.

CONFLICTS OF AUTHORS

There were no any conflicts between the authors.

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