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COMPARSION OF EFFICACY OF T.LABETALOL AND T.NIFEDIPINE AND ITS FETOMATERNAL OUT COME IN HYPERTENSIVE DISORDERS OF PREGNANCY

Obstetrics & Gynaecology

Dr. K. Vaishnavi Postgraduate, Department of OBGY Alluri Sitarama Raju Academics of Medical Sciences, Eluru, West Godavari District, Andhra Pradesh, India

Dr. P. Sri Tanaya Professor, Department of OBGY, Alluri Sitarama Raju Academics of Medical Sciences, Eluru, West Godavari District, Andhra Pradesh, India

Dr. K. Vandana Professor, Department of obstetrics & Gynaecology, Alluri Sitarama Raju Academics of Medical Sciences, Eluru, West Godavari District, Andhra Pradesh, India

ABSTRACT

About 10% of pregnancies are complicated by hypertensive problems. 3.9% of pregnancies are found to have preeclampsia (Williams 26th). Along with haemorrhage and infection, hypertension forms the deadly triad. Notably, half of these fatalities may have been preventable. Hence identify pregnant women with any one of the hypertensive disorders, manage them and thereby prevent adverse maternal and neonatal outcomes. In India Labetalol & Nifedipine are the commonly used anti-hypertensive in India in pregnancy.

Objectives: To compare the antihypertensive efficacy of Labetalol& T.Nifedipine in terms of dosage of drugs for control of BP and side-effects in hypertensive disorders of pregnancy, postnatal follow up. To compare the maternal & perinatal outcome

Materials & Methods

- This study was conducted at Alluri Sitarama Raju Institute of medical sciences, Eluru from August 2022 –May 2024 in department of OBGY. 100 antenatal women with BP >140/90 mmHg were selected. 50 women treated with Labetalol& 50 women treated with T.Nifedipine. thorough history, clinical examination was made, all patients were admitted with respective. Investigations .
- Antihypertensive efficacy, disease progression, gestational age at delivery, drug side effects and neonatal complications are documented in both groups.

Conclusion : Labetalol has lower side effect profile than Nifedipine it is therefore 1 st choice in our study.

KEYWORDS

INTRODUCTION

About 10% of pregnancies are complicated by hypertensive problems. Along with haemorrhage and infection, hypertension forms the deadly triad Notably, half of these fatalities may have been preventable. According to (ACOG) Hypertension in pregnancy is defined as:

Systolic pressure level of 140 mm Hg or higher 90mmHg or greater diastolic blood pressure. Confirmed on two occasions 4–6 hours apart with the patients in an upright position with their right arm supported in horizontal position at the level of the heart, after a 10-minute or longer rest period.

ACOG (2020) classifies four types of hypertensive disease in pregnancy:

1. Preeclampsia and Eclampsia syndrome
2. Chronic hypertension of any etiology
3. Preeclampsia superimposed on chronic hypertension
4. Gestational hypertension.

Complications of hypertension in pregnancy , include preeclampsia , HELLP syndrome, Eclampsia , Abruption ,cerebrovascular accidents, it is essential to prevent progression of this disease.

Hence we are committed to identify pregnant women with any one of the hypertensive disorders, manage them and thereby prevent adverse maternal and neonatal outcomes.

In India recent times Methyldopa largely replaced by Labetalol & T.Nifedipine, because of its slower onset of action and side effects& Non availability in some places.

This study is to compare the anti-hypertensive efficacy of Labetalol and T.Nifedipine in hypertensive disorders of pregnancy & study its feto maternal outcome.

MATERIALS & METHODS

This study was conducted at Alluri Sitarama Raju Academy of medical sciences, Eluru from August 2022 –May 2024 in department of OBGY , after taking approval from ethics committee & informed consent from study subjects .

Inclusion Criteria:

- All antenatal women with blood pressure recordings are >140/90 mm Hg more than 4 hours apart.
- Gestational Hypertension
- Preeclampsia
- Chronic hypertension
- Chronic hypertension with superimposed preeclampsia.

Exclusion Criteria:

- Women with preexisting medical disorders
- Multifetal pregnancy
- Eclampsia
- After thorough history, clinical examination hypertensive disorder is confirmed & Investigations like CBP with peripheral smear, LFT'S, blood sugar, fundus examination of eye, RFT'S, ultrasound abdomen, Coagulation profile, CUE were done.
- Patients with blood pressure > 140/90 were treated.
- In group A Labetalol is started at a dose of 100mg and dose is at 100mg until target BP of < 140/90 mmHg is achieved . Max of 600mg is was given .
- In group B T.Nifedipine is started at a dose of 10mg and dose increased by 10mg until target BP of <140/90 mmHg achieved max dose of 30mg was given.
- Patients were followed up every week & were admitted at 37 weeks &Pregnancy terminated at 37 weeks gestation .Patients with severe preeclampsia were terminated immediately irrespective of gestational age in both groups.
- Antihypertensive efficacy, disease progression, gestational age at delivery, drug side effects and neonatal complications are documented in both groups.
- The antihypertensive is continued if the blood pressure is>140/90 mmHg in postpartum period in both groups.

RESULTS

Most of patients in GrA & Gr B were between 21-25 yrs & BMI between 18.5- 24.9. Hence Both groups are comparable & no stastatical difference.

Most of the patients were primigravida in both groups.

Majority of patients required Labetalol dose between 200-400mg & dose of Nifedipine between 20-30 mg for control of B.P.

Table 1 - Progression To Severe preeclampsia

	Group A No=50	%	Group B No=50	%	Total	%	Statistical inference
							X2=1.725

Progression							Df=6
To severe							0.943>0.05
preeclampsia	9	18%	14	28%	23	23%	Not significant

Progression to severe preeclampsia like protenuria, uteroplacental insufficiency like oligohydramnios, IUGR, IUD & papilledema, imminent eclampsia.

In group A 80% delivered at term and group B 78 % delivered at term . There was no stastatical difference in between two groups in terms of gestational age at delivery.

Table 2– Side Effects Of Drugs

Drug side effects	Group A		Group B		Total		Statistical inference
	(n=50)	(%)	(n=50)	(%)	(n=100)	(%)	
Giddiness	0	0%	1	2.00%	1	1.00%	
							X2=7.527 Df=1
							.006<0.05
palpitation	0	0%	2	4.00%	2	2.00%	Significant
headache	0	0%	4	8.00%	4	4.00%	

Acc to table 2–Patients on Nifedipine developed giddiness, headache, palpitation.

There was no difference in mode of delivery between two group

No stastical difference was observed in terms of gestational age at delivery.

In Group A 78 % had birthweight> 2.5 kg & In groupA out of 50 - 11 preterm children. In Group B 82% had birthweight > 2.5 kg & Out of 9 preterm 6 had birthweight between 2-2.5 kg & 3 had birth weight < 2kg. No differences in terms of birthweight noted in between two groups.

Most of the babies were admitted due to RDS & TTN & Preterm care.

In Group A 5 patients out of 50 had postnatal follow up and used anti-hypertensive postanatally. In Group B 6 patients out of 50 had postnatal followup and used nifedipine postnatally. & no stastatical significance observed.

DISCUSSION

High blood pressure issues complicate between5 and 10 of pregnancies.

The evaluation, safety, and effectiveness of oral labetalol and oral nifedipine, as well as the effects on the mother and fetus, are the main aims of our research.

Both groups had similarity in BMI, age group and gestational age at diagnosis.

The average dose of Labetalol was 200-400 mg & Nifedipine was 20-30mg in our study for adequate control of BP. From this study both the drugs achieved adequate control of B.P.

According to a study by Reha Sahai, Compared to labetalol, patients taking oral nifedipine reached their target blood pressure more quickly. There was statistical significance in the result. Because of nifedipine's quick onset, oral bioavailability, and extended duration of action, less time and dose were needed.

Patel NK et al[66]. in contrast to this study, that labetalol is more effective than nifedipine in treating non-severe preeclampsia.

In both groups few patient progressed to severe preeclampsia with adequate blood pressure control as the disease process can't be altered with these antihypertensive medictions.

Even though the rate of disease progression is higher n GroupB compared to Group A the difference is not statistically significant.

Coming to side-effects of the drug , Group A none of them have any side-effects& In Group B 14% developed side-effects the most common being headache which accounted for 8% , followed by palpitation accounting for 4% & giddiness accounting for 2% .Thus Labetalol was tolerated better than T.Nifedipine& with less side-effects than Nifedipine.

Table 9 : Comparision Of Various Studies On Sideeffects Of Drugs

In study by Delphin T Rose etal[62] in Nifedipine group head ache was common complaint followed by palpitations f/b by dizziness.

Similar study was found with NirmalaDetal.Thus Labetalol was better tolerated than Nifedipine.

Majority in both groups delivered at term & no statistically difference between gestational age at delivery between both groups.

The reason for indication of C-Section in our study in both groups are Previous LSCS in labour, Failed induction, severe oligo with fetal distress, previous LSCS and CPD. So no difference in Neonatal outcome was observed between two groups.

In Group A 18% were admitted in NICU & In GroupB 22% were admitted in NICU mainly due to respiratory distress & TTN & for preterm care. Many of the neonates have 7,9 APGAR score in both groups .

Thus comparing both groups there is no significant difference In both groups in terms of neonatal outcome.

In our study in Group A5 patients out of 50 patients , which accounts for 10 % had postnatal follow-up& 12 % in group B had postnatal follow-up for hypertension and used antihypertensive. The difference was not significant.

Further,there were no progression of cases to cerebrovascular accidents, abruption, eclampsia ,disseminated intravascular coagulation & no maternal mortality occurred. All patients responded to antihypertensive in our study.

CONCLUSION

It is wise to assume that labetalol and T.Nifedepine are equally effective in controlling hypertension based on the findings of this study.

In spite of adequate control of BP, an average of 23 % in both groups progressed to severe preeclampsia. Demonstrating that there was no discernible change in the disease's patho physiology in either group.

The tolerance & side effects of labetalol were good and less when compared to T.Nifedipine

The neonatal outcome did not significantly differ between two groups.

Labetalol has lower side effect profile than Nifedipine it is therefore 1 st choice in our study.

But Nifedipine is inexpensive and readily available medicine even in poor resource settings and used as a tocolytic too.

REFERENCES

1. Dashe JS, Bloom SL, Spong CY, Hoffman BL. Williams obstetrics. McGraw Hill Professional; 2018 Jun 1.
2. Khan KS, Wojdyla D, Say L, Gülmezoglu AM, Van Look PF. WHO analysis of causes of maternal death: a systematic review. The lancet. 2006 Apr 1;367(9516):1066-74.
3. Berg CJ, Harper MA, Atkinson SM, Bell EA, Brown HL, Hage ML, Mitra AG, MoiseJr KJ, Callaghan WM. Preventability of pregnancy-related deaths: results of a state-wide review. Obstetrics &Gynecology. 2005 Dec 1;106(6):1228-34.
4. Magee LA, Sharma S, Nathan HL, Adetoro OO, Bellad MB, Goudar S, Macuacua SE, Mallapur A, Qureshi R, Sevene E, Sotunsa J. The incidence of pregnancy hypertension in India, Pakistan, Mozambique, and prospective population-level analysis. PLoS medicine. 2019 Apr 12;16(4):e1002783.
5. Espinoza J, Vidaeff A, Pettker CM, Simhan H. Gestational hypertension and preeclampsia. Obstetrics and gynecology. 2020 Jun 1;135(6):E237-60.
6. Elawad T, Scott G, Bone JN, Elwell H, Lopez CE, Filippi V, Green M, Khalil A, Kinshella ML, Mistry HD, Pickerill K. Risk factors for pre eclampsia in clinical practice guidelines: Comparison with the evidence. BJOG: An International Journal of Obstetrics &Gynaecology. 2024 Jan;131(1):46-62.
7. Espinoza J, Vidaeff A, Pettker CM, Simhan H. Gestational hypertension and preeclampsia. Obstetrics and gynecology. 2020 Jun 1;135(6):E237-60.
8. Sibai BM, Mercer B, Sarinoglu C. Severe preeclampsia in the second trimester: recurrence risk and long-term prognosis. American journal of obstetrics and gynecology. 1991 Nov 1;165(5):1408-12.
9. CAMPBELL DM, MacGILLIVRAY IA, Carr-Hill RO. Pre-eclampsia in second

pregnancy. BJOG: An International Journal of Obstetrics &Gynaecology. 1985 Feb;92(2):131-40.
10. Roberts JM, Redman CWG; Global Pregnancy Collaboration. Global Pregnancy Collaboration symposium: Prepregnancy and very early pregnancy antecedents of adverse pregnancy outcomes: Overview and recommendations. Placenta. 2017 Dec;60:103-109. doi: 10.1016/j.placenta.2017.07.012. Epub 2017 Jul 19. PMID: 28781143; PMCID: PMC5730538.