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HYPERTENSION IN PREGNANCY: CURRENT PHARMACOLOGIC TREATMENT- A REVIEW

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ABSTRACT

Hypertension in pregnancy is a syndrome of hypertension with or without proteinuria and oedema with the clinical manifestation usually occurs in late pregnancy. It is a major pregnancy complication, causing premature delivery, foetus growth retardation, foetal death and maternal morbidity and mortality. The use of antihypertensive drugs in pregnancy and the prevention and the treatment of the preeclampsia, eclampsia with intravenous MgSO₄ is also highlighted in this article.

Key Words: Hypertension, Pregnancy, Preeclampsia, Foetus.

INTRODUCTION

Hypertension complicates approximately one out of ten pregnancies and its a leading cause of maternal and foetal morbidity, particularly when the elevated blood pressure is due to preeclampsia either alone or superimposed on chronic vascular diseases [1,2]. The complications of uncontrolled high blood pressure during pregnancy affect multiple organ systems and can be detrimental to both mother and foetus [3]. Maternal complications of preeclampsia include seizures activity, placental abruption, stroke, HELLP syndrome (Haemolysis, Elevated liver enzymes and low platelets), liver haemorrhage, pulmonary oedema, acute renal failure and disseminated intravascular coagulation (DIC) [4]. The complications of hypertension in pregnancy can be caused to foetal and neonatal complications include intrauterine growth retardation, preterm birth, low birth weight, neonatal respiratory distress syndrome, increased admission to neonatal intensive care unit and foetal death.

Hypertension in Pregnancy:

Hypertension is defined as the systolic blood pressure is greater than 140mmHg or the diastolic blood pressure is greater than 90mmHg. The measurements

should be confirmed by repeated over several hours. It is a multi system disorder characterised by hypertension and the involvement of one or more organ systems and /or the fetes. Proteinuria is also common but should not be considered mandatory to make the clinical diagnosis. The patients that are coming under high risk of hypertension in pregnancy include multiple pregnancies such as twins or triplets. And also there are some other factors that can be cause hypertension and its following complications including pre existing chronic conditions increases the risk such as diabetes mellitus, gestational diabetes, obesity, chronic kidney disease and vascular or connective tissue disorder [5]. Women over the age of 30 years are considered more at the risk for developing preeclampsia.

TREATMENT OF HYPERTENSIVE PREGNANCY DISORDERS

Non Pharmacological Approach

The lifestyle modifications such as weight loss and a reduction in salt intake are the proven benefit in non pregnant hypertensive patients. Currently there is no clear evidence for the physical activity (eg: walking) during pregnancy is effective in preventing preeclampsia and other complications in pregnancy.

Pharmacological Approach

The objective of treating hypertension in pregnancy is to protect the women from dangerously high

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blood pressure and to permit continuation of the pregnancy, foetal growth and maturation.

Mild to Moderate Hypertension

Some women with treated chronic hypertension are able to stop their medication in the first half of pregnancy; because of the physiological fall in blood pressure during this period.

FIRST LINE AGENT

Methyldopa

The most commonly prescribed drug for hypertension in pregnancy. It is a centrally acting agent and remains the drug of first choice for treating hypertension in pregnancy. It has longest safety track record in randomised trials. This drug has a side effect of sedative action and the pregnant lady should be warned of the side effect of this drug. And the women should take proper care. Methyldopa will result in an elevation of enzyme the Liver Transaminases (up to 5%). The drug should be avoided in women with a prior history of depression because of the increased risk of postnatal depression.

SECOND LINE AGENTS

Nifedipine

This drug is widely used and safe at any trimester. Hypotension is the one of main adverse effect of this drug when we used as sublingual, so the use of this drug as sublingual should be avoided. Headache is common side effect.

Hydralazine

Hydralazine is safe throughout the gestation period. The adverse effect such as occurrence of maternal and neonatal lupus like syndrome is reported. Hydralazine is used as an infusion for the treatment of acute severe hypertension in pregnancy [6].

THIRD LINE AGENTS

Alpha and beta Blockers

REFERENCES

1. Marshall DL, Sandra J Taler, FGary C. Hypertension in Pregnancy. *Journal of American Society of Hypertension*, 2(6), 2008, 484-494.
2. Coy S and Baldwin K. Pharmacotherapeutic Options for the treatment of Preeclampsia. *Am J Health Health Systa Pharma*, 66(4), 2009, 337-344.
3. Ghulmiyyah L and Sibai B. Maternal Mortality from Preeclampsia/Eclampsia. *Semin Perinatol*, 36(1), 2012, 56-59.
4. Andrea G and Vesna D. The Management of Hypertension in Pregnancy. *Adv.Chronic Kidney Diseases*, 20(3), 2013, 229-239.
5. Vest AR, Cho LS. Hypertension in Pregnancy. *Cardiol Clin*, 30(3), 2012, 407-423.
6. Report of National High Blood Pressure Education Program Working Group on High Blood Pressure in Pregnancy. *Am J Obstet Gynecol*, 183(1), 2000, S1-S22.
7. RachelJames P, Catherine N. Management of Hypertension Before, During and After Pregnancy. *Heart*, 90(12), 2014, 1499-1504.

β -blockers are still avoided in the first half of the pregnancy because of the intra uterine growth retardation. And hence viewed as third line agents for the treatment of hypertension in pregnancy. Labetolol and Oxeprenolol are the β - blockers safely used throughout pregnancy. Labetolol has side effects of bradycardia, bronchospasm and headache.

Thiazide Diuretics

Thiazide diuretics are used in frequently in pregnancy. These drugs do not appear to be teratogenic and although such drugs abbreviate the plasma volume expansion associated with normal pregnancy, this has not been proven to impair foetal growth [7].

CONCLUSION

Pregnancy Induced Hypertension and preeclampsia present a unique challenge for practioners who care for these patients. Numerous studies have validated the efficacy of Hydralazine, Labetalol, Methyldopa, Nicardipine and Nifedipine in managing the blood pressure of women with hypertensive disorders during pregnancy, but none are without risk, these medications can reduce progression of disease for the mother and improve foetal and neonatal outcomes. In conclusion, treatment threshold recommend initiation of pharmacologic therapy at similar elevated blood pressure values. Various antihypertensive medications exist; however the severity of blood pressure elevation decides the choice of the agent. In treating hypertension in pregnancy, methyldopa is a choice of drug. In instance, should ACE inhibitors, ARBs or diuretics be used in pregnancy due to their teratogenic or volume depleting properties.

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CONFLICT OF INTEREST

The authors declare that they have no conflicts of interest.