

**THE RELATIONSHIP BETWEEN BODY MASS INDEX AND PREECLAMPSIA & GESTATIONAL HYPERTENSION****<sup>1</sup>Dr. Leela, <sup>2\*</sup>Dr. Mohan Lal Meena, <sup>3</sup>Dr. Varsha Sankhala, <sup>4</sup>Dr. Mona Rani and <sup>5</sup>Dr. Priyanka Meena**<sup>1</sup>Resident Doctor, Department of Obstetrics & Gynaecology, SMS Medical College & attached group of Hospitals, Jaipur, Rajasthan.<sup>2</sup>Senior Professor, Department of Obstetrics & Gynaecology, SMS Medical College & attached group of Hospitals, Jaipur, Rajasthan.<sup>3</sup>Resident Doctor, Department of Obstetrics & Gynaecology, SMS Medical College & attached group of Hospitals, Jaipur, Rajasthan.<sup>4</sup>Resident Doctor, Department of Obstetrics & Gynaecology, SMS Medical College & attached group of Hospitals, Jaipur, Rajasthan.<sup>5</sup>Senior Demonstrator, Department of Biochemistry, SMS Medical College, Jaipur, Rajasthan.**\*Corresponding Author: Dr. Mohan Lal Meena**

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Article Received on 06/02/2021

Article Revised on 26/02/2021

Article Accepted on 16/03/2021

**ABSTRACT**

**Background-**To compare the BMI in preeclampsia and normotensive women. **Methods-** The present study was a hospital based prospective observational study conducted on 500 pregnant women in early second trimester, attending the Department of Obstetrics & Gynaecology, SMS Medical College, Jaipur, Rajasthan. **Results-** Mean BMI of GTN group was  $22.43 \pm 0.34 \text{ kg/m}^2$  and mean BMI of normotensive group was  $21.33 \pm 1.76 \text{ kg/m}^2$ , which was significantly higher than normotensive group. **Conclusion-** BMI was significantly higher in preeclampsia as compare to normotensive women.

**KEYWORDS-** BMI, Preeclampsia, Normotensive.**INTRODUCTION**

Preeclampsia (PE) is a common hypertensive disorder specific to pregnancy occurring in 3-5% of all pregnant women that is diagnosed by new onset hypertension and proteinuria occurring after 20 weeks of gestation. Since preeclampsia is a multi-systemic disease that is characterized by adverse maternal and fetal outcomes, the emphasis for the current clinical diagnostic criteria is not to miss any cases of true preeclampsia so as to avoid morbidity and mortality and in some countries legal consequences. However, neither hypertension nor proteinuria is specific to the pathophysiology and disturbed histology of preeclampsia. As a result, women with other conditions such as diabetes, lupus and/or obesity that present with proteinuria and hypertension during pregnancy are often incorrectly classified as preeclampsia.<sup>[1,2]</sup>

A major part of the complications and some of the risk factors proposed for this disorder can be identified and prevented. Although the termination of pregnancy is considered as a definitive treatment of preeclampsia, careful prenatal care and appropriate treatment can improve the condition, and the outcome can be satisfactory for the mother and fetus in many cases.<sup>[3]</sup> Some studies have referred to obesity as a risk factor for

preeclampsia and showed that the relationship between maternal weight and preeclampsia is a progressive risk and varies from 4.3% in women with a BMI < 19.8 Kg/m<sup>2</sup>, up to 13.3% for women with a BMI ≥ 35 kg/m<sup>2</sup>.<sup>[4]</sup>

**MATERIAL AND METHOD****TYPE OF STUDY**

Hospital based observational study.

**STUDY DESIGN**

Prospective study.

**PLACE OF STUDY**

Department of Obstetrics and Gynaecology, SMS medical college and associated hospitals, Jaipur.

**DURATION**

From June 2019 to August 2020 for sample collection and including data analysis.

**STUDY PARTICIPANTS**

Pregnant women in early second trimester, attending the Department of Obstetrics &amp; Gynaecology, SMS Medical College, Jaipur.

**INCLUSION CRITERIA**

Primi/multi gravida with singleton live pregnancy with gestational age 14-20 weeks.

**EXCLUSION CRITERIA**

- Multiple pregnancy
- Chronic hypertension
- Diabetes mellitus,
- Congenital anomalies
- Cardiovascular disease
- Chronic renal disease

**OBSERVATION & RESULTS**

The present study was a hospital based prospective observational study conducted on 500 pregnant women in early second trimester, attending the Department of Obstetrics & Gynaecology, SMS Medical College, Jaipur, Rajasthan. The observations and results of the study are presented as below.

**Table 1: Prevalence of gestational hypertension/pre-eclampsia.**

Variable	No.	%
Gestational hypertension or preeclampsia	43	8.60
Normotensive women	457	91.40
Total	500	100.00

Out of 500 pregnant women studied gestational hypertension was developed in 43 (8.60%) women.

**Table 2: Age wise distribution of pregnant women.**

	GTN Group (n=43)	Normotensive group (n=457)	P value
Age in years	26.77±4.27	26.39±3.75	0.58

Mean age of GTN group was 26.77±4.27 years while mean age of Normotensive group was 26.39±3.75 years.

No significant different was observed between both groups in term of age comparison.

**Table 3. Clinical parameters of study subjects at 1<sup>st</sup> visit.**

	GTN Group (n=43)	Normotensive group (n=457)	P value
SBP (mm Hg)	124.40±3.69	121.55±5.40	0.12
DBP (mm Hg)	83.26±4.72	81.96±4.96	0.28
Weight (kgs)	52.28±1.28	53.22±2.68	0.02
BMI (kg/m <sup>2</sup> )	22.43±0.34	21.33±1.76	<0.01
Waist circumference (cm)	75.16±1.17	76.71±6.26	0.10
Waist: Hip ratio	0.69±0.04	0.71±0.06	0.13

The above table shows the Mean ± SD of SBP and DBP of various group subjects. The mean SBP of GTN group was 124.40±3.69 mm Hg and normotensive group was 121.55±5.40 mm Hg at 1<sup>st</sup> visit. The mean DBP of GTN group was 83.26±4.72 and normotensive group was 81.96±4.96 at 1<sup>st</sup> visit.

It was observed that the mean SBP and DBP was comparable between GTN group and normotensive group during 1<sup>st</sup> visit.

Mean BMI of GTN group was 22.43±0.34 kg/m<sup>2</sup> and mean BMI of normotensive group was 21.33±1.76 kg/m<sup>2</sup>, which was significantly higher than normotensive group

**DISCUSSION**

Hypertension in pregnancy is one of the commonest and dangerous complications causing increased fetal and maternal morbidity and mortality. Pre-eclampsia is a multisystem disorder characterized by a blood pressure of 140/90 mm of Hg or more on two occasion at least 4

hours apart after 20 weeks of gestation in women with previously normal BP may be associated with proteinuria, thrombocytopenia, renal insufficiency, impaired liver function, cerebral and visual symptoms.<sup>[5]</sup>

Mean BMI of GTN group was 22.43±0.34 kg/m<sup>2</sup> and mean BMI of normotensive group was 21.33±1.76 kg/m<sup>2</sup>, which was significantly higher than normotensive group in our study. This indicates the importance of BMI in the incidence of pre-eclampsia. Rizwana S et al (2011)<sup>[6]</sup> also observed a higher BMI in pre-eclamptic group as compared to the controls. The mean BMI in pre eclamptic group was 27.36 ± 7.02 kg/m<sup>2</sup> as compared to the 22.7 ± 3.77 kg/m<sup>2</sup> in the control group.

**CONCLUSION**

BMI was significantly higher in preeclampsia as compare to normotensive women.

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