Impact of Pregnancy Outcome among Obese Mothers - A Hospital based Study

Viji Krishnan[1], Lola Ramachandran[2]

ABSTRACT

Introduction: There is an increasing prevalence of obesity among fertile women in our country which is now a growing public health concern. Women with BMI more than 30 are considered as obese and are at greater risk of adverse perinatal outcome. This study will provide over view of complications related to high BMI. To identify and assess the association of maternal obesity during pregnancy with the perinatal outcome

Material and Methods: This was the Analytical study and included 100 patients who were randomly selected from Out Patient Department of Gynaecology Department, Jubilee Mission Medical College,who matched inclusion criteria, their BMI checked during their first antenatal visit. Then patients were followed for any complications.

Results: The present study has showed that PIH has been developed to 21% of patients, gestational diabetes mellitus to 32%, pre- eclampsia to 21%, PPH to 7%, Threatened miscarriage occurred to 31%, wound infection developed to 5%, and 11% babies admitted to NICU of patients who followed for complication with high BMI. According to calculations 36% patients with high BMI had spontaneous vaginal delivery,47% ended up in emergency LSCS, 10% were elective LSCS and 2% delivered by instrumental delivery.

Conclusion: Changing lifestyles, increasing urbanization, high calorie food consumption and reduced physical activity are responsible for increasing obesity in developing countries.

Keywords: Maternal Obesity, Perinatal Outcome

INTRODUCTION

Women's overall health is influenced by body weight; a women's risk of disease rises in proportion to the increase in body weight.[1] Obesity is more common in women than men. According to the World Health Organization (WHO) criteria, obesity is expressed in Body Mass index (BMI) which is calculated as weight in kilograms divided by the height in meter square (kg/m^2). As per definition underweight is defined as body mass index ≤18.5 kg/m^2, BMI of 18.5-24.9 kg/m^2 is considered normal, BMI of 25-29.9 kg/m^2 as overweight and obesity as a BMI of ≥30 kg/m^2.[2] BMI is the most widely used measure of body size and correlates well with mortality, which indicates that the risk of premature death is low in individuals with normal BMI, but is high in those who are overweight and obese.[2]

Greater body weight during pregnancy is associated with an increased risk of number of serious adverse outcomes including miscarriage[3], fetal congenital anomaly[4], thromboembolism[5,6], gestational diabetes[7], postpartum haemorrhage[7], wound infections[7], preeclampsia[8], dysfunctional labour[9], NICU admission and Post operative infection.[9]

Prenatal and postnatal care is also higher for overweight mothers when compared to normal-weight mothers. The infants of these overweight mothers are also at higher risk for having congenital anomalies, still born or even death.[10,11] Data on maternal obesity and its complications in our local population is lacking. So this study is aimed to identify and assess the association of maternal obesity during pregnancy and the most frequent complications associated with it. This study will provide an over view of complications related to high BMI so that better management for obstetricians as well as counselling can be done for these woman.

MATERIAL AND METHODS

This analytical study was conducted at OPD of Gyneacology, Jubilee Mission Medical College, from June 2016 to December 2016. Study population included, 100 pregnant women who were primiparous in the age group of 18-35 years and BMI more than >30 kg/m^2, coming for antenatal check up were included in the study.Informed consent was taken from all the subjects. Height and weight of the antenatal mothers were noted and BMI was calculated based on the formula, weight (in kg)/height (in meter square). Obstetric data like history, examination findings, gestational age at delivery, mode of delivery, fetal outcome and any complication during delivery or post partum period were recorded. Antenatal mothers who had essential hypertension, cardiac disease, women who had an absolute indication for caesarean section and also women who had multiple gestations were excluded.

STATISTICAL ANALYSIS

Statistical software namely SPSS version 18 was used for the analysis of data. Descriptive statistics like mean and percentages were used for the analysis.

RESULTS

In the present study, results were calculated for 100 patients, which showed PIH had developed to 21% of patents, gestational diabetes mellitus to 32%, pre eclampsia to 21%, PPH to 7%,threatened miscarriage occurred to 31%, wound infection developed to 5% and 11% babies got admitted to NICU of mothers who had high BMI. Regarding the mode of delivery, 36% patients with high BMI had spontaneous Vaginal delivery, 47% ended up in emergency LSCS, 10% were elective LSCS and 2 delivered by instrumental delivery (Table-1).

[1]Associate Professor, Department of Biochemistry, [2]Associate Professor, Department of OBG, Jubilee Mission Medical College and Research Institute, Thrissur, India

Corresponding author: Dr.Viji Krishnan, Associate professor, Department of Biochemistry, Jubilee Mission Medical College and Research Institute, Thrissur, India

How to cite this article: Viji Krishnan, Lola Ramachandran. Impact of pregnancy outcome among obese mothers - a hospital based study. International Journal of Contemporary Medical Research 2017;4(7):1433-1434.

Complication	Frequency (%)	Mean BMI (kg/m^2)
PIH	21	39
GDM	32	40
Preeclampsia	21	38
PPH	07	34
Wound infection	05	35
Threatened miscarriage	31	38
NICU admission	11	35
Mode of delivery		
Spontaneous vaginal delivery	36	31
Emergency LSCS	47	34
Elective LSCS	10	37
Instrumental delivery	02	39

Table-1: Complication

The analysis of maternal obesity on different complications showed that,patients who developed pregnancy induced hypertension had mean BMI of 39 kg/m^2. The mean BMI of patients with gestational diabetes was 40 kg/m^2, patients who developed pre eclampsia had mean BMI of 38 kg/m^2. Patients who developed PPH, their mean BMI was 34 kg/m^2 and with wound infection their mean BMI was 35 kg/m^2, who had Threatened miscarriage, their mean BMI was 38 kg/m^2. Patients who's babies admitted to NICU, their mean BMI was 35 kg/m^2. Regarding mode of delivery patients who delivered by spontaneous vaginal delivery their mean BMI was 31 kg/m^2, emergency LSCS their, mean BMI was 34kg/m^2. This indicates that high BMI did not deliver spontaneously. The mothers who delivered by elective LSCS had mean BMI of 37 kg/m^2 and those by instrumental vaginal delivery their mean BMI was 39 kg/m^2 (Table 1). Over all according to our study maternal obesity has adverse effect on PIH, GDM, pre eclampsia, mode of delivery, threatened miscarriage.

DISCUSSION

Maternal obesity during pregnancy is an increasing problem globally populations in developing countries as well as affluent ones are at risk. The findings of our study is consistent with other studies in which increased maternal weight increases the risk of other factors like pregnancy induced hypertension,gestational diabetes, caesarean section, pre-eclampsia, threatened miscarriages, PPH, weight of baby, NICU admission and Post-operative infection.[12,13] Factors responsible for high BMI are poor dietary habits, improvement in standards of living, decrease in physical activities and dietary changes might be responsible for the higher frequency of obesity in our urban population.[14]

Counseling

Obese women are at increased risk of several pregnancy complications; therefore, preconception assessment and counselling are strongly encouraged. According to the 2009 IOM guidelines a total weight gain of 6.8–11.3 kg for overweight women (BMI:25–29.9 kg/m^2) and 5.0–9.1 kg for obese women (BMI ≥ 30 kg/m^2).[15]

Limitation

Since this study was based on a single hospital and could not represent the entire population, large multi-centric trials are required for better assessment of the risks of obesity in our population.

CONCLUSION

The burden of obesity among pregnant women in our population is high. This study concluded that increased maternal weight increases the risk of PIH, gestational diabetes, preeclampsia, threatened miscarriages PPH, weight of baby, NICU admission and Post-operative infection.Enhancing of physical activities and increasing the awareness of pregnant women about healthy nutrition can help in reducing obesity.

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Source of Support: Nil; **Conflict of Interest:** None

Submitted: 14-06-2017; **Accepted:** 16-07-2017; **Published:** 27-07-2017