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Original Research Article

Comparative Evaluation of Pregnancy Complications among Morbid Obese Women: A Retrospective Study

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ABSTRACT

Background: An associated increased risk of a number of serious adverse outcomes is seen in obesity in pregnancy, including miscarriage, fetal congenital anomaly, thromboembolism, gestational diabetes etc. Hence, we planned this study to assess the pregnancy and pregnancy outcome in obese patients.

Materials & Methods: The present study included assessment of obese and non-obese women with pregnancy. A total of 250 patients were assessed in the present study which included 125 morbidly obese women and 125 normal weighing pregnant women. For each study subject, the control was the next normal weight woman on the delivery register who was not diabetic with a singleton pregnancy. Complete data of all the subjects including the follow-up details were obtained for this present retrospective study.

Results: The incidence of diabetes among obese and non-obese pregnant women was 16 and 2 respectively out of 125 subjects in each group. Significant results were obtained while comparing the incidence of diabetes and sub-fertility among obese and non-obese pregnant women. While comparing the incidence of caesarean among obese and non-obese pregnant women, it was observed that 42 and 20 women were affected respectively. Incidence of wound infections and blood transfusion among obese pregnant women was found to be 10 and 18 respectively.

Conclusion: In contemporary obstetric practice, obesity in pregnancy is a big problem.

Key words: Complications, Obese, Pregnant.

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INTRODUCTION

Since 1980, a global epidemic has been reached in relation to obesity. Over one and a half billion adults are overweight as estimated by World Health Organization (WHO) in 2008.[1] Obesity in pregnancy is associated with an increased risk of a number of serious adverse outcomes, including miscarriage, fetal congenital anomaly, thromboembolism, gestational diabetes etc.[2]

Obesity affects the pregnancy and pregnancy outcome significantly.[3] The pathophysiology underlying the effects of obesity on pregnancy outcomes focuses on elevated free fatty acids and resultant pro-inflammatory state.[4] Hence, we planned this study to assess the pregnancy and pregnancy outcome in obese patients.

MATERIALS & METHODS

The present study was conducted in the department of gynaecology and obstetrics and included assessment of obese and non-obese women with pregnancy. Ethical approval was taken from the institutional ethical committee and written consent was obtained after explaining in detail the entire research protocol. A total of 250 patients were assessed in the present study which included 125 morbidly obese women and 125 normal weighing pregnant women. Morbid obesity was defined as a body mass index (BMI) of 35 kg/m^2 or more at booking and normal weight as a BMI of between 20 kg/m^2 and 25 kg/m^2 at booking. Exclusion criteria for the present study included:

- Patients with history of any other systemic illness,
- Patients with any known drug allergy,
- Patients who have undergone any other major surgical procedure in the past one year,
- Patients with history of any previous pregnancy
- Patients more than 35 years of age

For each study subject, the control was the next normal weight woman on the delivery register who was not diabetic with a singleton pregnancy. Complete data of all the subjects including the follow-up details were obtained for this present retrospective study. All the data regarding the follow-up complications were

recorded and analyzed. All the results were assessed by SPSS software. Univariant regression cure and chi-square test was used for the assessment of level of significance.

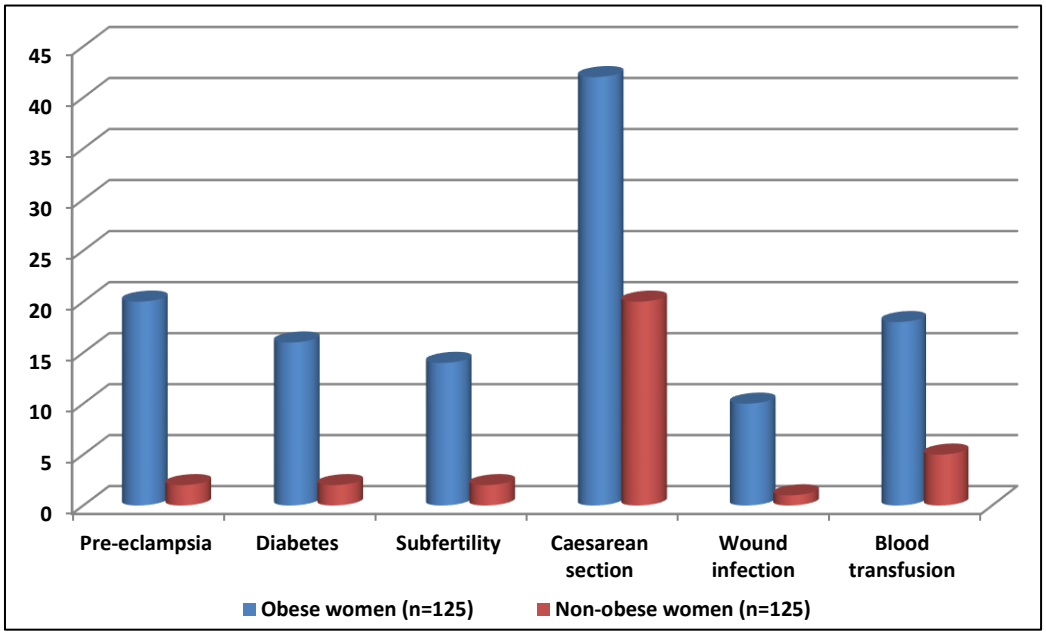
RESULTS

Table 1 and **Graph 1** show the comparison of pregnancy outcome of obese and non-obese pregnant women. While comparing incidence of Pre-eclampsia in between the obese and non-obese pregnant women, significant results were obtained. The incidence of diabetes among obese and non-obese pregnant women was 16 and 2 respectively out of 125 subjects in each group. Significant results were obtained while comparing the incidence of diabetes and sub-fertility among obese and non-obese pregnant women. While comparing the incidence of caesarean among obese and non-obese pregnant women, it was observed that 42 and 20 women were affected respectively. Incidence of wound infections and blood transfusion among obese pregnant women was found to be 10 and 18 respectively. Incidence of wound infections and blood transfusion among obese pregnant women was found to be 10 and 18 respectively. Incidence of wound infections and blood transfusion among non-obese pregnant women was found to be 1 and 5 respectively. Significant results were obtained while comparing the incidence of wound infection and blood transfusion among obese and non-obese pregnant women.

Table 1: Comparison of pregnancy outcome of obese and non-obese pregnant women

Parameter	Obese women (n=125)	Non-obese women (n=125)	p-value
Pre-eclampsia	20	2	0.01*
Diabetes	16	2	0.02*
Subfertility	14	2	0.01*
Caesarean section	42	20	0.04*
Wound infection	10	1	0.05*
Blood transfusion	18	5	0.01*

Graph 1: Pregnancy outcome of obese and non-obese pregnant women



DISCUSSION

In United States, about 28% to 32% of childbearing-aged women are obese. Obesity during pregnancy has been associated with a multitude of diverse maternal and neonatal complications.[5,6] With the rapid increase in obesity in developed countries, obesity in pregnancy is fast becoming a major concern in contemporary obstetric practice.[7-9] These pregnancies should be regarded as high risk and a multidisciplinary approach should be adopted for their management.[10] Hence, we planned this study to assess the pregnancy and pregnancy outcome in obese patients.

In the present study, we observed an increase in incidence of morbid obesity among pregnant women which was further associated with statistically significant increased maternal and perinatal morbidity. Machado et al. conducted literature review on cesarean section in morbidly obese women with a body mass index (BMI >40 kg/m^2) and revealed that this group is at increased risk of pregnancy complications and a significantly increased rate of cesarean delivery. Low transverse skin incisions and transverse uterine incisions are definitely superior and must be the first option. Closure of the subcutaneous layer is recommended, but the placement of subcutaneous drains remains controversial. Thromboprophylaxis adjusted to body weight and prophylactic antibiotics help in reducing postpartum morbidity. Morbidly obese women are at increased risk of postpartum infectious morbidity.[11] Grossetti E et al assessed the obstetrical complications of morbid obesity. They analyzed 2472 women with morbid obesity, defined as a body mass index (BMI) more than 40 were compared with normal weight women (BMI 20-25). In the group of morbidly obese mothers (BMI greater than 40) as compared with the normal weight mothers, there was an increased risk of the following outcomes: gravidic hypertension. preeclampsia, gestational diabetes, cesarean delivery, and macrosomia. However, we noted a lower rate of prematurity in the obese group. Even when morbidly obese women with preexisting diabetes and chronic

hypertension were excluded from the analysis, significant differences in the perinatal outcomes still persisted. Morbid obesity appears to be an independent risk factor for perinatal and gestational complications.[12]

Galtier-Dereure F et al investigated the incidence of pregnancy complications and the cost of prenatal care in patients with pregravid overweight. One hundred and twelve pregnancies among 89 overweight women, compared with 54 healthy normal weight controls. Hypertension, toxemia, gestational diabetes, insulin treatment, urinary tract infections and macrosomia were positively correlated with maternal pregravid weight excess. Mean duration of hospitalization and overall cost was also strongly related to maternal weight.

Cesarean section rate increased only in morbidly obese women. No materno-fetal mortality was observed in their study. Even moderate overweight is a significant risk factor for obstetrical complications and needs a multidisciplinary antenatal management in order to prevent materno-fetal complications.[13] Hibbard et al assessed effects of body mass index (BMI) on trial of labor after previous cesarean delivery.

Secondary analysis from a prospective observational study included all term singletons undergoing trial of labor after previous cesarean delivery. Morbidly obese women failing a trial of labor had six-fold greater composite maternal morbidity than those undergoing a successful trial of labor (14.2% versus 2.6%). Increased BMI was associated with greater composite morbidity and neonatal injury compared with elective repeat cesarean delivery, but absolute morbidities were small. Increased risks should be considered before trial of labor after previous cesarean delivery.[14]

Chauhan et al described the peripartum outcome of women weighing >300 pounds who were candidates for trial of labor after a prior caesarean delivery. All pregnant women who weighed in excess of 300 pounds and had a prior caesarean delivery were included in this prospective investigation. During a 2-year period, 69 patients met the inclusion criteria; 39 (57%) underwent an elective repeat caesarean delivery, and 30 (43%) women attempted a vaginal delivery after prior caesarean delivery. The demographics of age, race, gravidity, maternal weight, and pre-existing medical conditions were similar for the two groups. Vaginal birth after prior caesarean delivery occurred in 13% (4/30).

Reasons for failure included a labor arrest disorder in 46%, fetal distress in 38%, and failed induction in 15%. The rates of endometritis and wound breakdown were higher in the women undergoing trial of labor than in those undergoing repeat elective caesarean delivery. The combined infectious morbidity rate was significantly higher for women attempting trial of labor than those undergoing elective repeat caesarean delivery. The success rate for a vaginal delivery in the morbidly obese woman with a prior caesarean delivery is less than 15%, and more than half of the patients undergoing a trial of labor have infectious morbidity.[15]

CONCLUSION

From the above results, the authors concluded that in contemporary obstetric practice, obesity in pregnancy is a big problem. However, future studies with larger study group are recommended.

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