



EVALUATION OF FETO-MATERNAL OUTCOME IN OBESITY COMPLICATING PREGNANCY IN A TERTIARY CARE CENTRE

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ABSTRACT

Background: Obesity is an emerging epidemic that significantly impacts pregnancy outcomes. Increasing maternal body mass index (BMI) predisposes to several maternal and neonatal complications, yet Indian data remains limited. **Objectives:** To evaluate the maternal and perinatal outcomes in pregnancies complicated by obesity. **Methods:** This prospective observational study was conducted at a tertiary care centre on obese pregnant women (BMI ≥ 30 kg/m²). Maternal outcomes studied included mode of delivery, complications, need for ICU care and mortality. Fetal outcomes assessed included birth weight, NICU admission, morbidity and mortality. Data were analyzed and compared with similar studies. **Results:** A total of 105 obese pregnant women were studied. The majority (62%) were between 21–30 years, and 70% belonged to the lower socioeconomic class. Antepartum complications included pregnancy-induced hypertension (20%), gestational diabetes mellitus (16%), and preeclampsia (12%). Majority (58%) delivered by cesarean section, with dysfunctional labor and cephalopelvic disproportion being leading indications. Postpartum complications included PPH (10%) and wound infection (8%). Neonatal outcomes showed 15% macrosomia, 12% IUGR, and 18% NICU admissions, mostly due to respiratory distress and birth asphyxia. There was one maternal death and three perinatal deaths. **Conclusion:** Obesity in pregnancy is associated with increased maternal and perinatal complications including hypertensive disorders, GDM, cesarean delivery, macrosomia and NICU admissions. Antenatal counseling, early risk identification, and multidisciplinary management are essential to improve outcomes.

KEYWORDS

Maternal obesity, pregnancy complications, feto-maternal outcome, cesarean section, macrosomia.

INTRODUCTION

Obesity has emerged as a major global health concern, affecting both developed and developing nations. In India, the prevalence of obesity in women of reproductive age has risen sharply in the past two decades. Pregnancy in obese women is often complicated by a higher risk of antenatal, intrapartum, and postpartum morbidities, as well as adverse perinatal outcomes. These include gestational diabetes mellitus (GDM), hypertensive disorders, dysfunctional labor, cesarean delivery, postpartum hemorrhage, macrosomia, intrauterine growth restriction (IUGR), and stillbirth.

Despite the global evidence, there is limited Indian data evaluating the impact of maternal obesity on pregnancy outcomes. This study was therefore undertaken at a tertiary care hospital to assess feto-maternal outcomes in obese pregnant women and to compare findings with available literature.

AIMS AND OBJECTIVES

1. To study maternal outcomes in obese pregnant women in terms of mode of delivery, complications, ICU admissions, and mortality.
2. To study fetal outcomes in terms of birth weight, NICU admissions, perinatal morbidity, and mortality.
3. To evaluate the prevalence of co-morbidities in obese women.

MATERIALS AND METHODS

This prospective observational study was conducted in the Department of Obstetrics and Gynecology, SMIMER, Surat, over a period of 18 months. A total of 105 pregnant women with BMI ≥ 30 kg/m² attending antenatal clinic or admitted for delivery were included.

Inclusion Criteria:

- Pregnant women with pre-pregnancy or booking BMI ≥ 30 kg/m².

Exclusion Criteria:

- Multiple gestations, known medical disorders not related to obesity (e.g., cardiac disease, renal disease).

Data was collected on maternal demographic characteristics, BMI, parity, mode of conception, antepartum complications, intrapartum course, mode of delivery, postpartum complications, and neonatal outcomes.

Statistical analysis was performed using descriptive methods and compared with other published studies.

RESULT:

A total of 105 patients admitted in labour room in our tertiary care center whose first trimester BMI >30 kg/m² were taken into consideration and among them-

About 76.1% of the patients were booked in my study with regular ANC visits.

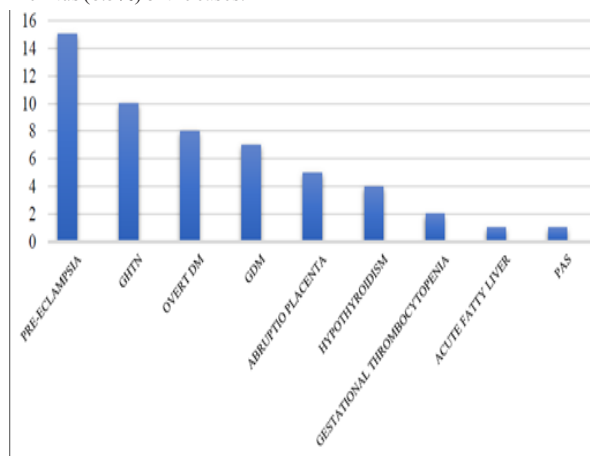
Majority of them belonged to lower socio-economic status (88.5%) lying between the age group of 26-30 years in 44.7% of the cases.

Mean BMI which was seen most commonly in my study was between 30-34.9 kg/m² with 80.9% of the cases and only 1 patient had BMI >40 kg/m².

High incidence of nulligravida (43.9%) was present as compared to multigravidas.

90.4% had natural conception whereas 5.7% conceived by IUI and 3.9% conceived by IVF.

Childhood obesity (12.3%) was the most common pre pregnancy medical disorder followed by hypothyroidism (9.5%) and Diabetes Mellitus (8.5%) of the cases.



Graph 1 - Among the antepartum complications -

Majority of the patients delivered between 37-<40 weeks of gestation i.e 62.8%.

LSCS was the most common mode of delivery in 65.7% cases and instrumental delivery was seen in 7.6% of the cases.

18% of the patients were induced and only 42% of them had successful vaginal delivery.

Most common indication for induction was gestational hypertension/pre eclampsia (52.6%) followed by abnormal colour doppler(26.3%).

Among total LSCS, Emergency LSCS (56.5%) was more than elective (43.5%) and the most common indication was previous 2 LSCS in 18.8% of the cases.

Table 1- Among The Intrapartum Complications-

SR NO	COMPLICATIONS	NO. OF CASES	PERCENTAGE (%)
1	PPH	12	11.4%
2	COMPLETE PERINEAL TEAR	1	0.9%
3	BLADDER INJURY	1	0.9%
4	SHOULDER DYSTOCIA	1	0.9%
	TOTAL	15	

Only 1 mortality present with BMI>40 kg/m² with previous 3 LSCS and PAS syndrome. She underwent obstetric hysterectomy with cause of death being hypovolemic shock due to PPH.

Among the post partum complications, 12.3% of the cases had dyslipidemia being the most common.

85.7% live births with mean birth weight between 2-<2.5 kg(27.6%). Only 11.4% neonatal death and 0 still births.

Most common cause for NICU admission was prematurity (22.5%).

The average hospital stay was <7 days in majority of the cases

DISCUSSION

This study demonstrates that maternal obesity significantly increases the risk of complications during pregnancy, delivery, and the postpartum period. Hypertensive disorders and GDM were prominent, reflecting obesity's role in metabolic dysfunction. The rate of PIH (20%) and GDM (16%) closely mirrors findings from Sebire et al. (2001) and Bianco et al. (1998), confirming that obesity is an independent risk factor for these complications.

The cesarean delivery rate (58%) was notably higher than the institutional average and global recommendations. This correlates with studies by Cnattingius et al. (1998) and Jensen et al. (2003), who reported similarly elevated cesarean rates among obese women. The leading indications-CPD, fetal distress, and failed induction-highlight the mechanical and physiological challenges posed by excess adiposity.

Postpartum morbidities such as PPH and wound infections were also higher, consistent with international data. Wound complications in obese women are aggravated by impaired tissue perfusion, increased operative time, and altered wound healing. This emphasizes the need for prophylactic measures including optimal surgical techniques, antibiotic prophylaxis, and thromboprophylaxis.

From the neonatal perspective, macrosomia (15%) and IUGR (12%) reflect the dual extremes of obesity-related outcomes. While maternal hyperglycemia predisposes to macrosomia, obesity-related hypertension and placental insufficiency contribute to IUGR. NICU admissions (18%) for respiratory distress and asphyxia underscore the higher perinatal morbidity burden. These findings resonate with Baeten et al. (2001) and Bianco et al. (1998), where obese mothers' infants had higher risks of NICU admission and perinatal death.

Overall, the study corroborates the concept of obesity as a multi-system challenge during pregnancy, demanding careful multidisciplinary management. The high maternal and perinatal risk burdens highlight the need for targeted antenatal care and

preconception counseling.

CONCLUSION

Obesity complicating pregnancy is strongly associated with adverse maternal and neonatal outcomes. Elevated risks of hypertensive disorders, gestational diabetes, cesarean delivery, postpartum hemorrhage, wound infections, macrosomia, IUGR, and NICU admissions were evident in this study. These outcomes not only increase maternal and neonatal morbidity but also elevate healthcare costs and resource utilization.

Clinical Implications:

Early identification and risk stratification of obese women are essential. Preconception counseling for weight reduction, nutritional interventions, and controlled gestational weight gain can reduce morbidity. During pregnancy, frequent monitoring for hypertension and GDM, judicious labor induction, and skilled intrapartum management can help improve outcomes.

In conclusion, maternal obesity represents a preventable risk factor. Focused preventive, therapeutic, and rehabilitative strategies are crucial to breaking the intergenerational cycle of obesity and adverse pregnancy outcomes.

Limitations

- Single-center study, limited sample size.
- Short-term follow-up of neonates; long-term outcomes not assessed.
- Lack of comparison group of normal-weight women.

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