

FETAL OUTCOME IN PREGNANCIES COMPLICATED BY OBESITY

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ABSTRACT

Objective: To determine the frequency of complications related to obesity in fetus born to obese mother.

Methodology: This descriptive cross sectional study was conducted in department of obstetrics and gynaecology, Lady Reading Hospital, Peshawar; from April, 2010 till March 2011. Total 250 consecutive antenatal patient with BMI >25kg/m² were included in the study that fulfilled the inclusion criteria. Fetal outcomes of still birth and macrosomia were measured. Data was analyzed by SPSS version 10.

Results: Obesity in pregnancy is associated with increased fetal risk of macrosomia 22% and stillbirth 8%.

Conclusion: Maternal obesity is associated with increased fetal risks and complications.

Key Words: Obesity, fetal complications, BMI.

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INTRODUCTION

The world health organization describes obesity as one of the most blatantly visible yet most neglected problem that threaten to overwhelm both more or less developed countries. Body mass index >30kg/m² is a globally accepted definition obesity while overweight is defined as BMI 25-29.9kg/m². The cut off levels for Asians for overweight is BMI >23kg/m² and obese >25kg/m²^{1,2}. A recent study showed that 1 in 5 women booking for antenatal care in 2002-2004 were obese³. Studies show that obesity in antenatal period puts both mother and fetus at risk of adverse outcomes. Perinatal complications like birth defects mainly neural tube defects, macrosomia, in utero growth restriction, still birth, preterm birth and need of neonatal intensive care admission are increased in such women⁴⁻⁶. Still birth result mainly by unexplained intra uterine death and fetoplacental dysfunction among obese women. Fetal growth assessment by conventional way of measuring fundal height is also difficult in such women and they are more prone to macrosomia and intrauterine growth restriction⁷. Macrosomic babies then put the mother to risk of intrapartum complications. The rationale of my study was to confirm these fetal outcomes in obese mother so as to emphasize the importance of normal BMI for good pregnancy outcome.

METHODOLOGY

This descriptive cross sectional study was conducted

in department of obstetrics and Gynaecology, Lady Reading Hospital, Peshawar; from April 2010 till March 2011. A total of 250 obese pregnant women were selected by convenience sampling with age range of 15-35 years and BMI >25kg/m² having singleton pregnancy, primigravida, multigravida and of any gestational age were included. Multiple pregnancy, polyhydramnios, previous cesarean-section with a recurrent cause, known diabetes and hypertension were excluded. Weight was measured in kilograms by weighing machine with traditional clothing and height measured in meters with measuring tape without shoes and BMI calculated by kg/m². Gestational age was calculated by the date of last menstrual period or scan available. Intra-uterine death before the onset of labour was detected by ultrasound and intrapartum death detected by intermittent auscultation by fetoscope and confirmed by ultrasound. Weight of baby was measured in kilogram soon after birth.

Data was analyzed by SPSS version 10.

RESULTS

The study was performed on 250 patients with BMI > 25 kg / m² 30 patients (12%) were booked and 220 patients (88%) were unbooked. Age range was 21-30 years in 160 cases (66.8%), 31 - 35 years in 80 (32%) cases and 15 - 20 years in 3 (1.2%) cases.

Gestational age was 36 - 40 weeks in 190 (76%) patient, 31 - 35 weeks in 33 (13.2%) patients and 5 cases

(2%) were in range of 28 - 30 weeks. BMI was 26 – 30 kg / m² in 212 patients (84.8%) and 31 - 36 kg / m² in 38 (15.2%) cases, 189 (75.6%) were multigravida and 61 (24.4%) were primigravida. Macrosomia was seen in 55 (22%) cases and 20 patients (8%) had still birth all of them were diagnosed in antenatal period on ultrasound.

DISCUSSION

The aim of my study was to test the hypothesis that maternal obesity alone during pregnancy is associated with increased risk of macrosomia and still birth even if confounding variables are removed. Majority 88% of our patients were unbooked and had no previous record of antenatal checkup and assessment of fetal growth. However our clinical assessment, estimated fetal weight on ultrasound and birth weight after delivery matched in majority of the cases and 22% of our babies were of birth weight >4kg, Macrosomia increases need for obstetric intervention and consequently morbidity in mother and baby. Due to difficult labour and birth injury macrosomic babies are usually referred to neonatal intensive care unit and this increases burden on nursery staff. Macrosomia has been observed in obese mother in other national and international studies^{6,8-13} showed that obesity was a risk factor for macrosomia independent of diabetes. 75.6% of our patients were multigravida. Getahun¹⁴ also observed that multiparous women are at high risk of obesity as compared to primigravida. There was 8% still birth rate among obese patients in my study which is consistent with 8% rate in study⁸. Bhattacharya¹⁵ and Callaway⁶ also found strong relationship of obesity and increase preterm birth, birth defects or still birth. Kristensen¹⁶ also observed the same finding and postulated that as hyperlipidemia reduces prostacyclin production it may be responsible for increased stillbirth rate. Placental insufficiency and high insulin levels in these women may also be responsible. Increased still birth rate was however not observed in study by Jaleel⁹. All of our cases were diagnosed on ultrasound in antenatal period with patients giving no history of p/v leaking, p/v bleeding but in majority of cases there was a history of reduced fetal movements preceding diagnosis of still birth. Thus my study confirmed that obese antenatal women are at high risk of fetal complication which persist even if confounding variables are taken into account.

CONCLUSION

Taking into account result of my and other studies regarding fetal risk in obese mother it is highly recommended to spread the need of optimum BMI before pregnancy to general public through all sources of media so as to reduce above mentioned fetal complications and improve pregnancy outcome.

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