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ABSTRACT.

Effect of Antenatal Body mass index (BMI) on Maternal and Fetal Outcome

Objective:

To determine the effects of antenatal BMI on pregnancy and its outcome.

Study design and setting:

Hospital based prospective Cohort study with internal Controls Conducted at Castle Street Hospital for Women who attend antenatal clinic and receive inward treatment at ward 7 and 8.

Study population and sample:

Primi mothers, age above 18 and below 35 years who are recruited before 17 weeks of period of amenorrhoea who live in Western province of Sri Lanka. Once exclusion criteria were satisfied a sample of 350 mothers were selected and their height in meters and weight in kilograms was measured. BMI was calculated by dividing weight by square of height. Mothers were grouped in to 3 categories according to BMI (low < 18.5, normal >18.5 to <25, high >25).

Following outcomes were compared in low, normal and high BMI categories.

Antenatal complications such as anaemia, pregnancy induced hypertension, diabetes mellitus, urinary tract infections.

Delivery and labour outcomes such as POA at delivery, appearance of PROM, mode of delivery, type of labour (spontaneous or induced), outcome of labour (uncomplicated vaginal delivery, instrumentation or emergency caesarean section), appearance of meconium stained liquor and fetal distress/ unfavourable cardiotocograph and of caesarean section (elective and emergency) and indication.

Post partum complications such as episiotomy, caesarean wound infections and post partum endometritis.

Neonatal outcomes such as birth weight and admissions and indications for admissions to baby unit.

Results.

High BMI is associated with increased incidence of pregnancy induced hypertension ($p<0.01$), diabetes mellitus($p<0.01$), urinary tract infections ($p<0.01$), meconium stained liquor ($P<0.01$), fetal distress/unfavorable cardiotocograph ($p<0.05$), labour inductions ($p<0.01$), undergoing caesarean sections ($p<0.01$), mean birth weight ($P<0.01$), Deep vein thrombosis ($p <0.01$) and increased admissions to baby unit ($p<0.01$). High BMI is protective for occurrence of anaemia, IUGR and low birth weight.

Low BMI is associated with increased occurrence of anaemia ($p<0.01$), mean POA at Delivery 38 weeks ($P<0.01$), prelabour rupture of membranes ($P<0.01$), spontaneous labour ($p<0.01$) , normal vaginal deliveries ($p<0.01$) and lower mean birth weight ($P<0.01$). Low BMI is protective against occurrence of PIH, DM, UTI, meconium stained liquor, labour Inductions, caesarean sections and deep vein thrombosis.

Deviation outside normal BMI range is associated with increased occurrence of wound infections, episiotomy infections and admissions to special care baby unit.

Conclusion:

High and low BMI is associated with adverse pregnancy outcome. Therefore need for preconception/ antenatal counseling and antenatal management.