

Effectiveness of screening for gestational diabetes mellitus during third trimester

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Introduction: Diabetes mellitus is the commonest endocrine disorder identified during pregnancy. It can be either preexisting diabetes mellitus or gestational diabetes mellitus. The prevalence of diabetes mellitus was in a rising trend in South Asian countries during the last couple of decades. Gestational diabetes mellitus (GDM) defined as “abnormal glucose intolerance of any degree with onset or first recognition during pregnancy”.

Objectives: The aim of the study is to find out the occurrence of gestational diabetes mellitus in the third trimester, to determine the criteria for repeating the test during the third trimester and to describe the maternal, fetal and neonatal outcomes in women who are diagnosed as having GDM in the third trimester. **Methods:** A descriptive cross-sectional study was conducted among 915 study participants. Study population was pregnant women attending antenatal clinic during the research period until the sample size was reached. Singleton pregnant women, who got registered before the routine second trimester diabetes screening, were included to the study. Interviewer administered structured questionnaire and a data extraction sheet were used for data collection. If the screening or diagnostic test were negative at 24 - 28weeks, they were screened again by oral glucose challenge test at 34 - 36weeks of gestation. Diagnosis was confirmed with oral glucose tolerance test. Data was analyzed by SPSS version 22.0. Ethical clearance was obtained for this study through ethics review committee of the Faculty of Medicine, University of Jaffna, Sri Lanka.

Results: Mean age of the study sample was 28.96 years (SD=5.19). Majority was presented with their second pregnancy (N=466:50.5%). Mean values following glucose challenge test was 133.4mg/dl (SD=24.43) at third trimester. Mean blood sugar value following fasting, 2-hour oral Glucose tolerance test was 112.12mg/dl (SD=11.41) and 136.57mg/dl (SD=17.49) respectively. Majority was within the range of 121mg/dl to 140 mg/dl (N=748:81.1%). Mean birth weight was 2.96 kg (SD=361.48). All parameters except incidence of premature rupture of membrane were significantly associated with high blood sugar values following OGTT. Gestational diabetes mellitus in 3rd trimester could be identified as a significant risk factor for high amniotic fluid index (OR=2.449: 95% CI=1.552-3.863), pregnancy induced hypertension (OR=1.729:95 % CI=1.034-2.819), neonatal hypoglycaemia (OR=4.547:95 % CI=1.763-11.732) and admission to special care baby units (OR=3.14:95%CI=1.6635.930).

Conclusions and Recommendations: When the results of glucose challenge test was very high, requirement of confirmatory tests is minimized. Gestational diabetes mellitus in 3rd trimester is a significant risk factor for high amniotic fluid index, pregnancy induced hypertension, neonatal hypoglycaemia and admission to special care baby units. Special attention should be paid on pregnancy induced hypertension during the antenatal management of mothers with increased blood sugar values. Specific precautions should be taken to treat neonatal hypoglycaemia and other perinatal outcomes when mothers with increased blood sugar levels deliver their babies.