A-16: Placental maturation in relation to birth weight in pregnancies complicated by diabetes mellitus and impaired glucose tolerance

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Objective: To assess placental maturation in relation to birth weight in pregnancies complicated by diabetes mellitus (DM) and impaired glucose tolerance (IGT).

Sections from placentas of 102 normal pregnancies, 29 pregnancies complicated by DM and 24 complicated by IGT were assessed for the degree of maturation of chorionic villi in relation to gestational age. The birth weight of the new borns was recorded.

The chorionic villi were immature for gestational age in 3.9%(4/102) of normal pregnancies, 34.5%(10/29) of pregnancies complicated by DM (p=0.0005) and 33.3%(8/24) of pregnancies complicated by IGT (p=0.0003). The relative risk of having an immature placenta was 10.52 (CI 3.58-29.3) for pregnancies complicated by DM and 7.45 (CI 2.47-22.4) for IGT. The percentage of placentas with advanced maturation for gestational age in normal, DM and IGT groups were 9.8%, 17.2% (p=0.04) and 4.2% (p=0.49) respectively. The mean birth weights in the normal, DM and IGT groups were respectively 2880, 2830 and 2950g. The percentage of small for dates babies in the normal, diabetes and IGT groups were respectively 22.5%, 17.2% and 8.3%. The percentage of large for dates babies(LFD) in normal, diabetes and IGT groups were respectively 0.9%, 3.4% and 4.2%. The relative risk of having a LFD baby

in the diabetic and IGT groups were 3.43 (CI 0.22-52.8) and 3.59 (CI 0.23-55.1) respectively.

Pregnancies complicated by DM and IGT have a high relative risk of having a placenta which is immature for gestational age. The percentage of LFD babies in diabetes and IGT was low.