Excessive weight gain before and during GDM treatment – what is the impact? (47756)

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Background: Women with Gestational Diabetes Mellitus(GDM) commonly exceed Institute of Medicine(IOM) weight gain targets by first presentation to diabetes services(IOM, 2009).

Aim: Assess whether 1. Excessive weight gain before GDM diagnosis(EGWG) is associated with higher antenatal 75-gram oral Glucose Tolerance Test(oGTT) results 2. Continued excessive gestational weight gain(cEGWG) is associated with greater likelihood of insulin initiation and Large-for-Gestational-Age(LGA) infants.

Methods: Prospectively collected (1992-2015) data from GDM pregnancies managed by Australasian Diabetes in Pregnancy Society guidelines were analysed. Women received two dietetic appointments, with weight measured at each multidisciplinary clinic visit (weekly or fortnightly). Inclusion criterion: exceeding IOM weight gain targets at presentation(cEGWG was assessed incrementally: ≤0kg, 0.1-2kg, 2.1-4.0kg, 4.1-6.0kg, 6.1-8.0kg, >8.0kg). Exclusions: last recorded weight >4 weeks pre-delivery; managed for <3 weeks; incomplete data. The relationship between EGWG on presentation, and oGTT fasting blood glucose(FBG), and 2-hour post l glucose load(PGL) values were assessed using independent samples-tests. cEGWG was included in logistic regression models adjusted for confounders predictive of insulin therapy and LGA. Outcomes: insulin therapy initiation, mean insulin dose and LGA rates.

Results: Of 3343 pregnancies, 776 met criteria(23.2%). Mean+SD: weight gain at presentation 16.3+5.0kg; total weight gain 18.0+5.8kg; weight gain during treatment 1.7+3.2kg. Those with EGWG on presentation had significantly higher mean FBG (5.4vs5.0 mmol/l, p<0.0001), but not 2-hour-PPG (8.6vs8.7, p<0.010). When adjusted for confounders, the FBG remained significantly higher in women with EGWG (p<0.0001). cEGWG was an independent predictor of insulin initiation, higher mean insulin dose and LGA (all p<0.0001). Incremental increases in cEGWG were associated with 24.7% (95%CI 11.0-40.1) and 30.4% (95%CI 16.8-45.7) increased likelihood of insulin initiation and LGA respectively.

Conclusions: EGWG before presentation with GDM was associated with a higher oGTT FBG but not 2-hour PGL. cEGWG was associated with a greater likelihood of insulin therapy initiation and having an LGA infant.