Gestational Weight Gain Prior to Glucola and Risk of Gestational Diabetes Mellitus

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Background
• GDM complicates 4–7% of US pregnancies
• Latinas are at risk with higher rates of diabetes and obesity in Hispanic population compared to non-Hispanic whites
• Early-to-mid gestational weight gain (GWG) thought associated with increased prevalence of GDM, however 2009 Institute of Medicine (IOM) GWG guidelines concluded insufficient evidence regarding association

Objective
To investigate associations of GWG adherence as per 2009 IOM guidelines prior to 1-hour 50g glucose tolerance test (GTT), or gestational diabetes, with GDM diagnoses in Latinas.

Materials and Methods
• Retrospective chart review
• Inclusion Criteria (n=1156):
  - Hispanic women
  - Delivered by UMass Memorial faculty between 4/1/06–3/31/11
  - Received prenatal care at faculty or resident practices
• Abstracted:
  - Pre-pregnancy weight and height
  - Gestational Weight Gain (GWG) & Gestational Age (GA) most proximate to gestational diabetes
  - Results 50g Glucola & 100g GTT where appropriate
• Relevant demographics
• GWG categorized as inadequate, appropriate or excessive according to 2009 IOM Guidelines with adjustment for GA (Table 1), for example at time of glucola at 28 weeks (Figure 3).

Results
• Subjects used in analysis (n=838, Fig. 2)
• Demographic Characteristics, comparison between included (n=838) and excluded (n=318) subjects (Table 2), BMI (n=838), and GWG Adherence (n=838, Fig. 4) of included subjects.
• Excluded subjects with significantly higher gravidity (p<0.049), and more Spanish-only speakers (p=0.025).
• 86 of 838 diagnosed with GDM (10.3%, Fig. 5) & 802 (95.7%) screened and excluded (n=318) with 22 (10.8%) and 51 (11.5%) with inadequate, appropriate and excessive gain respectively diagnosed with GDM (Fig. 6). OR (95% CI) 1.07 (0.63-1.82) for undergainers and 0.61 (0.30-1.25) for undergainers.
• No significant association between pre-gestational GWG & GDM (p=0.211).
• GWG Adherence of subjects with diagnosed GDM (n=86, Fig. 7).

Conclusions
• Rate of GDM in preliminary cohort of Latina women almost double that of the general population (10.3%) & excluded subjects had more unknown demographic data (education level, family history of diabetes).
• More undergainers diagnosed with GDM than under- or appropriate gainers.
• Although there is a trend toward increased weight gain associated with increased gestational diabetes risk, this association was not statistically significant.
• Further evaluation warranted within high-risk subgroups.
• Data to be combined and re-assessed with larger study from UMass Amherst.

Gestational Weight Gain Prior to Glucola and Risk of Gestational Diabetes Mellitus
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