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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

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

Materials and Methods
- Retrospective chart review
- Inclusion Criteria (n=1156):
  - Hispanic women
  - Delivered by UMass Memorial faculty between 4/1/66-3/31/11
  - Received prenatal care at faculty or resident practices
- Abstracted:
  - Pre-pregnancy weight and height
  - Gestational Weight Gain (GWG) & Gestational Age (GA) most proximate to glucola
  - 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 1).

Results
- Subjects used in analysis (n=1156, Fig. 2)
- Demographic Characteristics, comparison between included (n=838) and excluded (n=318) subjects (Table 2), BMI (n=838, Fig. 3) 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)
  - By 2009 IOM guidelines, 11/189 (6.9%), 22/204 (10.8%) and 51/445 (11.5%) with inadequate, appropriate and excessive gain respectively diagnosed with GDM (Fig. 6).
- No significant association between pre-gluco 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 overgainers 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.