



# **Gestational diabetes mellitus in Sweden: screening, outcomes, and consequences**

av

**Helena Fadl**

## **Akademisk avhandling**

Avhandling för medicine doktorsexamen i medicinsk vetenskap  
med inriktning kirurgi,  
som enligt beslut av rektor kommer att försvaras offentligt  
fredagen den 17 februari 2012 kl. 09.00,  
Wilandersalen, M-huset, USÖ

Opponent: Prof. David Hadden  
Royal Endocrinology and Diabetes Centre  
Belfast, Northern Ireland, UK.

Örebro universitet  
Hälsoakademien

701 82 ÖREBRO

## Abstract

Helena Fadl (2012): Gestational diabetes mellitus in Sweden: screening, outcomes, and consequences. Örebro Studies in Medicine 65, 68 pp.

Gestational diabetes mellitus (GDM) has been a controversial issue nationally and internationally for decades. In the studies presented in this thesis, different aspects of GDM were analysed, including screening methods, national outcomes in Sweden, the influence of ethnicity, and future morbidity for women with GDM. *Paper I:* In a population-based cross-sectional study (N = 3616) fasting capillary glucose was analysed as a screening test for GDM. For fasting capillary glucose levels between 4.0 and 5.0 mmol/l the sensitivity for detecting GDM ranged between 87% and 47% and the specificity ranged between 51% and 96%. Fasting capillary glucose can be used as a screening test for GDM, but the appropriate cut-off value to use depends upon clinical practice. *Paper II:* In a population-based cohort study using data from the SMBR from between 1991 and 2003 (N = 1 260 297) maternal and neonatal outcomes were significantly worse in the group of women with GDM than in the background population. Between the study periods 1991–1997 and 1998–2003 there was no significant improvement in outcomes. *Paper III:* Maternal and neonatal outcomes for GDM in Nordic versus non-Nordic women were analysed in a population-based cohort study using data from the SMBR from 1998–2007 (N = 8560). The prevalence of GDM varied by country of birth (0.7% in women from Sweden; 2.9% in women from North Africa). Non-Nordic women had less preeclampsia and hypertension and fewer LGA babies. LGA is highly dependent on maternal height and individual growth curves are needed to correctly estimate birth weights. *Paper IV:* A population-based case-control study using data from health registers in Sweden for 2642 women diagnosed with CVD and 13316 controls. The OR for GDM as an independent risk factor for cardiovascular disease was 1.5 (1.01–2.11). The combination of overweight and GDM identifies a group with particular risk, with an OR of 2.35 (1.38–3.99). No association was seen for GDM with CVD in normal weight women.

*Keywords:* gestational diabetes mellitus, fasting blood glucose, screening, neonatal and obstetric outcomes, ethnicity, cardiovascular disease

Helena Fadl, Hälsoakademien  
Örebro University, SE-701 82 Örebro, Sweden.