Geographic Accessibility and Screening Uptake Rates for Gestational Diabetes

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Gestational diabetes mellitus (GDM) is any degree of glucose intolerance with onset or first recognition during pregnancy and is associated with a range of maternal and neonatal complications and conditions. This bulletin considers recent research on the role of healthcare centre accessibility on the decision to attend for screening for GDM. It shows significant geographic inequalities in relation to accessibility to screening with important implications for screening uptake rates.

Key words: GDM; geographic accessibility; screening; Ireland.

INTRODUCTION AND CONTEXT

Gestational diabetes mellitus is defined as glucose intolerance resulting in hyperglycaemia with onset or first recognition during pregnancy. It is associated with an increased incidence of adverse maternal and neonatal outcomes and is believed to be increasing in prevalence. Therefore, screening practices to identify and treat GDM cases are now in place in a number of countries. The potential benefits of treatment include reductions in ill-health in the mother and/or the baby during or immediately after pregnancy, as well the longer term benefits in terms of reducing the risk of future pregnancies being complicated by gestational diabetes and/or progression to type 2 diabetes in the future. This bulletin summarises research which investigated the role of geographic accessibility on screening uptake rates for GDM (Cullinan et al, 2012).

APPROACH AND FINDINGS

The ATLANTIC DIP network operated in five centres in the West of Ireland between 2007 and 2009, offering universal screening for GDM using a 75g oral glucose tolerance test at 24–28 weeks gestation. Data for all pregnancies at University College Hospital Galway (UCHG), the largest of the five centres, were used for the analysis. A clinical information system containing a comprehensive range of data on screening uptake rates, maternal and neonatal characteristics and outcomes, healthcare resource usage and postal addresses for each individual was utilised.

In order to examine the impact of travel distance on screening uptake rates, the postal addresses contained within the ATLANTIC DIP dataset were ‘geocoded’ to provide precise spatial (x,y) coordinates for each patient’s residential location – see Figure 1. These coordinates were then used to calculate the travel distance to the screening site (UCHG) using GIS methods. The relationship between the decision to attend for screening and travel distance to the screening site, controlling for a range of other likely determinants, was then examined. A key finding from the analysis is that the decision to attend for screening is significantly influenced by the distance an individual must travel. For example, the probability of attending for screening is 15% lower for a patient who lives 50kms from a screening centre, compared to an otherwise similar patient who lives next door. Overall the results suggest significant geographic inequalities in accessibility to GDM screening in Ireland.

CONCLUSIONS AND POLICY IMPLICATIONS

Variation in uptake rates by distance presents important challenges for universal screening programmes at regional centres in terms of encouraging women from relatively isolated/distant areas to attend for screening. This is important, since diagnosis and appropriate treatment of GDM has been shown to reduce the neonatal and maternal complications associated with the condition. Furthermore, screening also facilitates recognition of a cohort of women who are at risk of developing type 2 diabetes in the future. Women in more remote locations are thus less likely to benefit on both counts.

REFERENCES


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