SCREENING BRIEF

Gestational diabetes mellitus (GDM)

THE DISORDER

- Gestational diabetes mellitus (GDM) is usually defined as diabetes or glucose intolerance first recognised in pregnancy. Considered present if hyperglycaemia is detected either in the fasting state or following an oral glucose tolerance test.[1]
- The medical disorder is ill defined; the "main" problem is macrosomia—usually defined as a birthweight over 4 or 4.5 kg. This fails to distinguish between larger than average healthy babies and those with abnormal growth patterns related to high insulin levels *in utero*.

PREVALENCE

- Definitions of GDM vary and rely on blood sugar levels. The new WHO criteria define GDM as either diabetes (fasting plasma glucose 7.0 mmol/l or over or 2 hour 11.1 mmol/l or over, or both, after 75 g of oral glucose) or impaired glucose tolerance (fasting plasma glucose <7.0 mmol/l and 2 hour plasma glucose 7.8mmol/l or over).[2]
- A review of the definitions used found that prevalence could range from 1% to 10% of pregnant women according to which was used.[3]

SCREENING TESTS

- A wide range of screening tests is used, including selection of women with risk factors (overweight, positive family history, high maternal age, South Asian ethnicity, weight gain in early pregnancy, high waist/hip ratio), glycosuria, random plasma glucose, fasting plasma glucose, 50g glucose challenge test, Test meals.
- The 75g or 100g oral glucose tolerance tests (OGTT) are rarely used as screening tests but are used as the definitive tests in screen-positive women.

PURPOSE OF SCREENING

- The main rationale for GDM screening is to reduce the number of babies with macrosomia by treatment of mothers during pregnancy, by diet, insulin, or gliburide.

ASSESSMENT OF SCREENING

- The performance of GDM screening in discriminating between fetuses with and without macrosomia appears to be poor, although it cannot be fully quantified from the data available.[4 5] Only 10% of large babies are born to mothers with GDM.[6] Macrosomia is most commonly associated with maternal overweight without hyperglycaemia,[1] and one reason why it is also associated with GDM may be that women with GDM tend to be overweight.
- A diagnosis of GDM seems to increase the chance of Caesarian section even when the baby is not large.[1 7] For GDM screening to prevent a single birth where the infant is too large because of macrosomia, it has been estimated that 3716 women would need to be screened, 250 would need further investigations, and 134 would undergo Caesarian sections as a result.[8]
- Two large trials are under way: the Australian Carbohydrate Intolerance Study (ACHOIS) in pregnancy is investigating whether the outcome of pregnancies in which the OGTT is abnormal is affected by treatment (Crowther C. Personal communication), and the Hyperglycemia and Pregnancy Outcome Study is exploring whether mild hyperglycaemia influences outcome.

CONCLUSION

Screening for gestational diabetes mellitus has not been shown to be worthwhile.

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