HTA - - Health Technology Assessment Report

Screening for disorders of glucose regulation in cystic fibrosis

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Study design (if review, criteria of inclusion for studies)

Systematic reviews of treatments and screening tests

Participants

CF patients

Interventions

75-g OGTT; fasting and 2-hour glucose levels; full OGTT (FOGTT); HbA1c or fasting plasma glucose (FPG), continuous glucose monitoring systems (CGMSs) and profiles (a series of BG measurements over the course of the day).

Outcome measures

Sensitivity, specificity.

Main results

Authors used the 75-g OGTT as the reference standard. Most studies reported only the fasting and 2-hour glucose levels. The full OGTT (FOGTT) includes measurements at baseline and at 30, 60, 90 and 120 minutes after an oral glucose load. Most studies used HbA1c or fasting plasma glucose (FPG). These tests did not appear satisfactory for detecting either CFRD or IGT, because their sensitivity was poor. However, this depended on cut-off levels chosen, and, as expected, higher sensitivity tended to be achieved at the cost of poorer specificity. Sensitivities ranged from 23% to 100% with HbA1c, and from 25% to 70% with FPG. Sensitivity was better when the aim was to detect CFRD rather than both CFRD and IGT. There were few studies of newer methods, such as continuous glucose monitoring systems (CGMSs) and profiles (a series of BG measurements over the course of the day) but they appeared to be more useful, especially for detecting hyperglycaemia, which occurs more often at certain times of day, such as during the evenings. CGMSs may become the method of choice. The most sensitive test may be the 1-hour postprandial glucose, but evidence is lacking on the benefits of treatment if that is the only abnormality. This could be measured by two tests: the 50-g glucose challenge test (GCT) or the FOGTT. There is some evidence that treatment is beneficial at the IGT stage, and we conclude that screening should be for both CFRD and IGT.

Authors' conclusions

The definition of CFRD should probably be based on pulmonopathy risk, rather than using the classical definition of diabetes. That implies that we should be screening for a wider range of hyperglycaemia than in other forms of diabetes, perhaps to detect BG excursions of >8 mmol/l. Insulin treatment may need to start at lower levels than formerly accepted.

http://www.hta.ac.uk/1706

See also

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Keywords

Gastrointestinal Diseases; Glucose Intolerance; non pharmacological intervention - diagn; Pancreatic Diseases; screening;