Clinical reviews

Our panel of GPs review recent research papers in their specialist areas that may influence the way you practise

Reviewers

Addiction
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Cardiovascular disease
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Smoking cessation
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Obstetrics and gynaecology

Lifestyle intervention reduces gestational diabetes in high risk women

A small study from Finland has shown that a relatively simple dietary and exercise intervention during pregnancy can lower the risk of gestational diabetes mellitus (GDM) in high-risk groups.

Overall 293 women with either a previous pregnancy affected by GDM or obesity (BMI ≥ 30 kg/m^2) were recruited before 20 weeks' gestation. A total of 269 women, 144 randomly allocated to the lifestyle intervention programme and 125 allocated to usual care, completed the study.

All had an oral glucose tolerance test (OGTT) at enrolment which was repeated at 24-28 weeks.

The intervention consisted of an initial group meeting led by a dietitian followed by three one-to-one follow-up meetings with a specialist nurse. The aim was to encourage dietary improvement (based on accepted Nordic standards) and modestly increase physical activity and exercise. Free access to exercise groups and a swimming pool was included. Women in the control group were given general advice and information leaflets.

The primary outcome measure was diagnosis of GDM. Twenty (13.9%) women in the intervention group developed GDM compared with 27 (21.6%) controls (P = 0.044 after controlling for age, BMI, prior GDM status, weeks' gestation at diagnostic OGTT). This was equivalent to a 36% reduction in GDM. Crude relative risk for GDM was 0.64 (95% CI: 0.38-1.09) in the intervention group.

Fasting glucose improved modestly in the intervention group, - 18 mmol/L, compared with the controls - 0.07 mmol/L, (adjusted P = 0.011). There was no difference however in two-hour glucose levels between the groups: + 0.54 mmol/L in the intervention women, controls + 0.55 mmol/L, adjusted P = 0.42).

Mean weight gain at delivery was 7.6 kg in the intervention group and 7.7 kg in controls (adjusted P = 0.07).

A dietary quality index score was devised and used to analyse Food Frequency Questionnaire data (see box 1, below). A total of 17 points equated to maximal adherence to the recommended intake for each item on the list. Scores improved in both groups (intervention group + 0.7, controls + 0.3, adjusted P = 0.037). Intervention group women increased activity by a mean of 15 minutes/week; the controls showed no change (adjusted P = 0.029). In the intervention group 26% of women met the physical activity goal of 150 min/week in the second trimester compared with 23% in the control group.

The incidence of GDM appears to be rising. The condition increases risks for both mother and baby and may indeed be associated with a higher risk of obesity and future GDM in the offspring of affected pregnancies.

One criticism often levelled at lifestyle interventions is that they are time consuming and expensive. This was not the case with this programme. The reduced incidence of GDM in the intervention group women was impressive although because of the smallish number of participants its statistical significance was modest.

The authors speculate that the women in the control group may also have modified their behaviour so diluting the apparent effect of the intervention. There is no doubt that type 2 diabetes and GDM are predominantly lifestyle-driven conditions and that effective lifestyle improvement can make a significant difference. This modest but positive study should be duplicated and improved on.

Table 1

The 11-component dietary index

Food item	Points
Snacks	0-2
Sugar-sweetened beverages	0-1
Vegetables	0-2
Fruit and berries	0-1
Low-fat cheese	0-1
Cooking fat	0-1
Spread fat	0-2
Fast food	0-1
High-fibre bread and cereals	0-2
Fish	0-2
Low-fat milk	0-2
Maximum score	**17 points**

DR CHRIS BARCLAY

● **Koivusalo SB, Rönö K, Klemetti MM et al. Gestational diabetes mellitus can be prevented by lifestyle intervention: The Finnish Gestational Diabetes Prevention Study (RADIEL). A randomized controlled trial. *Diabetes Care* 2015. DOI: 10.2337/dc15-0511**