EDITORIAL

Intensive weight management can achieve remission in type 2 diabetes

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ALMOST HALF THE PATIENTS IN A UK PRIMARY CARE-LED WEIGHT MANAGEMENT PROGRAMME achieved remission of their type 2 diabetes after a year, a study in the *Lancet* has shown.

Forty-nine general practices in Scotland and Tyneside took part in the DiRECT study, an open label, cluster randomised trial. Practices were randomly assigned to the intervention arm or the control group. Over a three-year period between 2014 and 2017, 306 patients were recruited, aged 20-65 who had been diagnosed with type 2 diabetes in the past six years, had a BMI 27-45 kg/m^2 and were not receiving insulin. Of these, 149 were allocated to an evidence-based weight management programme, and the remainder to the control group.

'Type 2 diabetes of up to six years' duration is not necessarily a permanent lifelong condition'

The intervention group were put on a low calorie total replacement formula diet (825-853 kcal/day) for three to five months and their antihypertensive and diabetes medications were withdrawn. Participants were encouraged to maintain their usual physical activities during total dietary replacement. This was followed by stepped re-introduction of food for two to eight weeks. At this point physical activity strategies were introduced to help participants achieve up to 15,000 steps a day. They received ongoing support for long-term weight maintenance. The control group were offered best practice type 2 diabetes care according to NICE and SIGN guidelines.

The participants, carers and research assistants knew the allocation, but the statisticians who analysed the data did not.

The primary outcomes were weight loss of 15 kg or more and remission of diabetes, defined as an HbA_{1c} < 6.5% (<48 mmol/mol), from baseline to month 12. At the end of the study, no patients in the control group had lost 15 kg or more. In the treatment group, almost a quarter (24%) achieved this target. Overall the mean weight loss in the intervention group was 10.0 kg, and in the control group it was 1 kg.

Diabetes remission was achieved in 68 (46%) of the intervention group, and 6 (4%) of the controls; odds ratio 19.7 (95% CI: 7.8-49.8; P < 0.0001).

Remission was closely related to the degree of weight loss maintained at one year. Remission was attained in 86% of participants with at least 15 kg weight loss, and 57% with weight loss of 10-15 kg. Quality of life scores, analysed by the EQ-5D visual analogue scale, improved by 7.2 points in the treatment group, and fell by 2.9 points in the control group, with a statistically significant difference between the two; P = 0.0012.

The study authors conclude: 'Our findings confirm that type 2 diabetes of up to six years' duration is not necessarily a permanent lifelong condition. Weight loss sufficient to achieve remission can be attained in many individuals by use of an evidence-based structured weight management programme delivered in a non-specialist community setting by routine primary care staff.'

These findings fit with existing evidence of the benefits of lifestyle intervention in prediabetes states,[2] and remission of diabetes following bariatric surgery. Moreover, the DiRECT study suggests a possible paradigm shift in the management of some diabetes patients. It overturns the current wisdom that type 2 diabetes is a lifelong condition.

Every practice would have a substantial number of patients suitable for this intervention. As a GP I await with interest the public health analyses to determine the cost effectiveness of rolling out this treatment. I suspect it will also influence the ongoing debate about the best way to prevent obesity in the general population.

For now, it will change my advice to newly diagnosed type 2 diabetes patients who ask if they can be cured.

REFERENCES
1 Lean MEJ, Leslie WS, Barnes AC et al. Primary care-led weight management for remission of type 2 diabetes (DiRECT): an open label, cluster randomised trial. *Lancet* 2018;391(10120):541-51
2 Lindstrom J, Louheranta A, Mannelin M et al. The Finnish Diabetes Prevention Study (DPS): Lifestyle intervention and 3-year results on diet and physical activity. *Diabetes Care* 2003;26(12):3230-36

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