Baseline Predictors and Influence Of Early Weight Loss During An Intensive Weight Management Programme On Remission Of Type 2 Diabetes After 12 Months: Post Hoc Analysis Of The Diabetes Remission Clinical Trial (DiRECT)

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Introduction: An intensive weight management programme (Counterweight-Plus), including low-energy formula diet for up to 16 weeks, then a structured approach for weight-loss maintenance, delivered within routine primary care, has shown striking remissions of type 2 diabetes (T2DM diagnosis <6 years). Remissions at 12 months were achieved by 46% overall, by 73% with weight loss >10kg.

Methods: Baseline factors, and weight losses of 2-10kg from baseline, at 4, 6, and 8 weeks, were examined as potential predictors of remission of T2DM at 12 months (non-diabetic HbA1c >48mmol/mol, on no anti-diabetes medications) in the Intervention group (n=149, mean age 54 years, BMI 34.5kg/m2).

Results: Significant baseline predictors of diabetes remission at 12 months, all modest, included older age, lower HbA1c, fewer anti-diabetic and more antihypertensive drugs (both stopped at baseline) and higher blood pressure. Weight losses at 4, 6, and 8 weeks were significantly associated with remission of diabetes at 12 months. Sixteen patients (11%) failed to achieve 2kg weight loss at 6 weeks, none of whom achieved remissions of diabetes. However, 14 of these patients failed to start, or withdrew from the intervention, within 6 weeks. At 8 weeks, 31 patients (21%) had failed to achieve 6kg weight loss, of whom only 5 achieved remission (95% sensitivity, 32% specificity). However, 15 of these patients had withdrawn from treatment. Excluding earlier withdrawals from treatment, achieving <6kg loss had only 17% specificity for identifying failure to achieve remission.

Conclusions: Early weight loss predicts treatment success. However, many failing patients withdraw spontaneously and early ‘stopping rules’ would deny treatment to a significant minority who gain remissions from continued support.

Funding: Diabetes UK. Support-in-kind from Cambridge Weight Plan and Counterweight Ltd.