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A 12-month randomised controlled trial using intensive dietary interventions for adolescents with obesity associated complications

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Adolescent obesity requires effective and accessible intervention options and there is potential for intensive dietary interventions to be used as adjunctive therapy to behavioural weight management for some individuals[1]. The aim of this study was to determine the effect of two novel diet therapies, delivered in the as part of an intensive behavioural weight management intervention, in adolescents with metabolic complications associated with obesity. The Fast Track to Health study (HREC/17/SCHN/164; ACTRN12617001630303) was a multi-site 52-week RCT, conducted 2018 – 2023, comparing a very-low-energy diet (800kcal/day) followed by i) an intermittent energy restricted (IER) diet; and ii) a continuous energy restricted diet (CER), for adolescents (13-17years) with ≥1 obesity associated complication. Interventions were delivered as part of an intensive behavioural weight management intervention by a multidisciplinary team[2]. Anthropometry, body composition and cardiometabolic health were assessed at baseline and week-52. The primary outcome was change in BMI z-score at week-52. Dyslipidaemia was defined as HDL <1.03mmol/L and/or triglycerides ≥1.7mmol/l, and elevated liver function tests (LFTs) as ALT and/or GGT ≥1.5 upper limit of 30U/L[3]. The difference in BMI z-score between groups at week-52 (±4) was assessed using a t-test. Mixed models was used to investigate changes over time. Descriptive statistics were used to describe participants above and below clinical cut-points at baseline and week-52. In total, 141 adolescents (70 female) were enrolled and 97 (48 female) completed the intervention. At week-52, BMI z-score reduced by −0.23 [95%CI −0.37 to −0.22], BMI expressed as a percentage of 95th percentile reduced by −8.86 [95%CI −12.46 to −7.47] and Fat Mass Index reduced by −1.49 [95%CI −2.36 to −1.08]. There was no significant difference for weight or cardiometabolic outcomes between diet groups. The occurrence of dyslipidaemia was unchanged between baseline and week-52 (n = 60 [43%] and n = 37 [43%] respectively) and a small improvement in the occurrence of impaired LFTs (n = 37 [27%] to n = 15 [17.2%] respectively). There were no differences in change of occurrence of dyslipidaemia or impaired LFTs between intervention groups. These findings suggest that both IER and CER, delivered as part of an intensive behavioural weight management program, are equally effective for improving weight and cardiometabolic outcomes for adolescents with obesity.

Keywords: adolescent; diet; very low energy diet; intermittent energy restriction

Ethics Declaration

Yes

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