A newly designed pilot 24-week structured multidisciplinary weight reduction program in overweight type 2 diabetic patients with comorbidities in a hospital outpatient setting

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Introduction
Weight reduction has shown to improve glycemic control, metabolic parameters, and obesity related complications in overweight patients with diabetes mellitus (DM). However, weight reduction is often a difficult task to tackle in our usual busy specialist outpatient clinic.

Objectives
1. To devise a structural multidisciplinary program for overweight type 2 DM patients with comorbidities to achieve weight reduction in outpatient setting 2. Patients were randomized to either of two groups: conventional DM diet prescription alone versus one to two meal replacement from a variety of inexpensive readily available low calorie (<300kcal) food choices in addition to conventional DM diet 3. To evaluate the changes in body weight, HbA1c, waist and hip circumferences and %body fat in both groups after 24 weeks

Methodology
From February 2014 to August 2014, 24 patients aged 43 to 64 years of equal sex proportion were recruited, with mean BMI of 31.79kg/m2 (±4.08kg/m2) and mean DM duration of 11 years (± 5.61years). In this randomized, non-blinded, single center trial, patients were randomized into either meal replacement group or conventional DM diet group as described. Both arms consisted of 10 individual counseling sessions on nutrition, exercise, home glucose monitoring, and drug adjustment given by dietitians, diabetic nurses and endocrinologists across the 24 weeks.
Result
Weight reduction was effective under this multidisciplinary well-structured program for the 2 groups. Over a period of 24 weeks, mean body weight decreased from 86.65kg (±14.43kg) to 83.93kg (±14.6kg) in the meal replacement group, and from 85.81kg (±14.71kg) to 80.13kg (±9.85kg) in the standard DM diet group. The mean weight reduction was 2.72kg (±2.23kg) and 2.57kg (±3.19kg) respectively in the two groups (p=0.90). The improvement in glycemic control was also seemingly successful in both groups. After 24 weeks, mean HbA1c decreased from 7.93% (±1.05%) to 7.41% (±1.30%) in the meal replacement group, and from 7.38% (±0.86%) to 7.06% (±0.51%) in the standard DM diet group. Participants in the meal replacement group had a greater mean A1c reduction of 0.52% (±1.06), compared with 0.23% (±0.74) in the standard DM diet group (p=0.46). It was encouraging that the dosage of insulin or oral hypoglycemic agents was reduced in 46% of participants. Moreover, outcomes were favorable in body composition parameters such as waist and hip circumferences, and % of body fat.