Concurrent Session 4: Dietary Interventions for Metabolic Syndrome & Obesity

Comparison of weight loss over 18 months in overweight people randomized to a group encouraged to eat wholegrain foods and pulses or to a control group

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Background – Observational studies suggest that consuming diets high in wholegrain foods and pulses are associated with a smaller weight gain over time. There are no long-term intervention trials in which a high consumption of wholegrain foods and pulses has been used as a strategy for weight loss in overweight people.

Objective – To compare two diets differing in wholegrain and pulse content on weight loss in overweight adults.

Design – A randomised-control parallel study of 18 months duration with 113 volunteers with a BMI ≥ 28kg/m². The intervention group was encouraged to consume wholegrain foods and pulses, the control group followed the New Zealand Food Pyramid. Intensive support was given and key foods provided during the first six months.

Results – At six months, the mean (SD) amounts of wholegrain consumed by the control and intervention groups were 34.7 (25.6) and 52.2 (24.6) g/d (P < 0.001); for pulses it was 23.5 (44.3) and 165.1 (86.6) g/d (P <0.001), respectively. Mean (SD) weight loss at 6-mo was 7.6 (0.9) kg in the control group and 7.4 (0.8) kg in the intervention group; at 18-mo weight loss was 4.0 (1.8) and 5.2 (1.4) kg, respectively. There was no difference in weight loss between the two groups at either 6 or 18-mo (P > 0.05).

Conclusion – Both groups experienced substantial weight loss (~10%) during the trial but the diet that emphasised wholegrains and pulses was no more effective than a diet based on the NZ food pyramid.

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High protein diets decrease serum triacylglycerol, total and abdominal body fat in overweight and obese men and women with elevated triacylglycerol

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Background – High protein weight loss diets may have greater beneficial effect on markers of cardiovascular disease (CVD) risk than conventional low fat diets.

Objective – Our objective was to determine the effect of high protein compared to standard protein diets on weight loss, fat distribution and CVD risk markers in overweight & obese adults with raised triacylglycerol (TAG) concentration.

Design – Data from three randomised parallel design trials with subjects assigned to either a high protein (HP) or standard protein (SP) hypo-caloric diet (5500-6500kJ/day) for 12 weeks were pooled. Weight, body composition, lipids, insulin and glucose were measured before and after weight loss.

Outcomes – Data from 215 subjects (49.9 ± 9.8yr, BMI 33.5 ± 3.7 kg/m²), 108 HP, 107 on SP were analysed. Weight loss (HP diet 7.82 ± 0.37kg; SP diet 7.65 ± 0.39kg) and total fat loss were not significantly different between groups. The reduction in TAG concentration was greater on HP, 0.48 ± 0.07 mmol/L than on SP 0.27 ± 0.06 mmol/L, (P<0.001). Subjects with serum TAG>1.7mmol/L at baseline lost more total (HP 6.17 ± 0.50 kg; SP 4.52 ± 0.52 kg, P=0.012) and abdominal fat (HP 1.92 ± 0.17 kg ; SP 1.23 ± 0.19 kg, P=0.005) on HP. Serum TAG concentrations were also decreased to a greater extent in these subjects (P=0.004) on HP (0.99 ± 0.15 mmol/L, 35%) than SP (0.54±0.10 mmol/L, 20%). Changes in HDL and LDL cholesterol were not different between the TAG groups. There were interactions between diet and TAG group for TC (P=0.010), between diet and insulin group (above and below median), for glucose (P=0.046) and between diet and IGT group (<6.1mmol/L vs >6.1mmol/L) for LDL-C (P=0.007).

Conclusion – We conclude that high protein weight loss diets may have a beneficial effect on markers of CVD risk particularly in subjects with elevated TAG who lost more total and abdominal fat.