



**Improvement in diabetes control and cardiovascular risk in obese subjects with Insulin-requiring type 2 diabetes after an intensive lifestyle intervention: A pilot study**

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**Introduction**

Obesity and type 2 diabetes contribute significantly to the burden of disease in South Africa. A few non-surgical lifestyle intervention studies reported partial or complete remission of diabetes in obese subjects.

**Aims**

The aims of this study were to determine the safety and efficacy of a commercial weight loss program to reduce weight, improve diabetes control and reduce risk of coronary heart disease (CHD) in obese subjects with insulin-requiring type 2 diabetes.

**Methods and study design.**

Eighteen obese men (BMI  $\geq 35$  kg/m<sup>2</sup>) on insulin treatment for > 1 year for poorly controlled type 2 diabetes were randomised to either a commercially available low carbohydrate, low fat energy restricted diet (N=9) or a standard medical nutrition intervention program (N=9) for 6 months.

**Results**

Mean weight loss at 3 months and 6 months from baseline in the intervention group was 9.0% and 9.6% respectively. Corresponding mean weight loss in the control group was 1.9% and 1.3%. Complete and partial diabetes remission occurred in one subject each in the intervention group.

Diabetes control (HbA1c) improved in both groups after 3 and 6 months. This improvement was accomplished with a smaller median dose of insulin (0.19 (0; 0.22) units/kg) in the intervention group compared to the control group (0.93 (0.43; 1.12) units/kg) at 6 months. Median UKPDS 10-year risk of CHD disease in both groups decreased significantly at 3 and 6 months from baseline (p < 0.05). Mean absolute 10-year risk of CHD in the intervention group decreased by 9.7% (p < 0.01) at 6 months.

**Conclusion**

A commercially available nutrition intervention programme resulted in complete diabetes remission in one subject, partial remission in another while improving diabetes control and reducing CHD risk in this pilot study with a small number of participants.



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