

Resumé:

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Aims/hypothesis: In type 2 diabetic patients, insulin detemir (B29Lys(ϵ -tetradecanoyl),desB30 human insulin) induces less weight gain than NPH insulin. Due to the proposed reduction of tubular action by insulin detemir, type 2 diabetic patients should have increased urinary sodium excretion, thereby reducing extracellular volume and body weight when changed from NPH insulin to insulin detemir.

Methods: In a randomised, open-labelled, two-way crossover study of 24 patients with type 2 diabetes, patients were first treated with NPH insulin or insulin detemir for 8 weeks. Thereafter, they were changed to the other insulin for 8 weeks. In a third 1 week period, they were changed back to the first insulin.

Results: At the end of 8 weeks, body weight was reduced by 0.8 ± 0.2 kg (mean \pm SEM) on insulin detemir compared with NPH insulin ($p < 0.01$). After insulin detemir treatment, we also observed a significant reduction of lean body mass (0.8 ± 0.2 kg, $p < 0.05$) and a non-significant reduction of extracellular volume (0.8 ± 0.5 l/1.73 m², $p = 0.14$). The weight loss occurred after as early as 1 week (0.8 ± 0.2 kg,

$p < 0.001$), with a simultaneous and transient increase of urinary sodium excretion ($p = 0.07$).

Conclusions/interpretation: Insulin detemir induces significant and sustained weight loss, which is first observed at 1 week after changing from NPH insulin. The initial weight loss seems to be related to changes in fluid volume and may reflect changed insulin action in the kidneys.