

## Resumé:

K. V. Hendriksen & T. Jensen & P. Oturai & B. Feldt-Rasmussen

**Aims/hypothesis:** In type 2 diabetic patients, insulin detemir (B29Lys( $\epsilon$ -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  $0.8 \pm 0.2$  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 ( $0.8 \pm 0.2$  kg,  $p < 0.05$ ) and a non-significant reduction of extracellular volume ( $0.8 \pm 0.5$  l/1.73 m<sup>2</sup>,  $p = 0.14$ ). The weight loss occurred after as early as 1 week ( $0.8 \pm 0.2$  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.