

MEETING ABSTRACT

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Comparative effects of a dipeptidyl peptidase-4 inhibitor and of NPH insulin on peripheral nerve conduction of patients with type 2 diabetes

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Background

Studies in animals have suggested that the glucagon-like peptide-1 hormone (GLP-1) has neurotrophic properties that were independent of those related to the improvement of glucose control. Dipeptidyl peptidase-4 (DPP-4) inhibitors increase GLP-1 levels and are effective in improving metabolic parameters in patients with type 2 diabetes mellitus (T2D) but little is known about its effects on neurological disorders, including peripheral diabetic neuropathy.

Objective

To assess the effects of the DPP-4 inhibitor sitagliptin on nerve conduction and their independence on glucose control.

Materials and methods

Thirty patients with T2D (39-66 yrs.), diabetes duration of 10.9 yrs., inadequately controlled with metformin plus glyburide (HbA1c between 6.9 to 9.1%) were randomized to receive sitagliptin (n=16) or bedtime NPH insulin (n=14) as add-on therapy. HbA1c, fasting blood glucose, body weight and electroneurography were determined before and after 1 year of treatment.

Results

HbA1c levels decreased both in the sitagliptin (8.01 ± 0.57 x 7.36 ± 1.96 , $p=0.04$) and NPH group (8.11 ± 0.64 x 7.34 ± 0.68 , $p < 0.001$). The weight of patients remained stable. There was no change in sensory and motor nerve conduction parameters in the 2 groups.

Conclusions

Sitagliptin and bedtime NPH insulin were effective in reducing HbA1c, after 1 year of treatment. The improvement of glucose control, the use of sitagliptin or bedtime NPH insulin did not lead to improvement in peripheral nerve conduction in patients with long-standing type 2 diabetes.

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