

Assessment of the myelin damage degree in patients with and without diabetic neuropathy

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OBJECTIVES

Diabetic neuropathy is associated with impaired neuron myelination, nerve conduction and muscle function.

The pathogenic mechanisms of reduced myelination in diabetes mellitus are poorly understood. Peripheral Myelin Protein - 22 (PMP-22) is glycoprotein with proposed roles in peripheral nerve myelin formation [1,2,3]. Peripheral somatic neuropathy (PSN) is associated with deleterious changes in peripheral nerves, such as myelin damage and decrease in nerve conduction velocity. This study allows us to consider the changes in the plasma levels of PMP-22 in patients with and without diabetic neuropathy.

CONCLUSIONS

These findings could suggest the occurrence of the neuron demyelination reflected by the elevated PMP-22 in patients with diabetic neuropathy.

METHODS

We studied 34 subjects with DM duration of 15.2 ± 2.1 years, mean value of HbA1C was $8.4 \pm 1.2\%$ divided into 2 groups: diabetic patients without symptoms of PSN (consisted of 12 participants (5 male/7 female), mean age was 42.7 ± 10.1 years) and patients with diabetes and confirmed diagnosis of diabetic PSN (22 patients (8 male/14 female), mean age was 42.8 ± 10.1 years) and 20 healthy volunteers (9 male/11 female, mean age was 48.3 ± 9.5 years) as the control group. The plasma concentrations of PMP-22 were measured by immunoassay. No subjects studied had signs of other disorders of peripheral nervous system.

RESULTS

We found that plasma levels of PMP-22 were significantly higher in the patients with PSN (9.1 ± 1.32 ng/ml) compared to diabetic subjects without PSN (3.8 ± 0.15 ng/ml) and control group (1.53 ± 0.31 ng/ml), $p < 0.05$.

References

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