CORRELATION OF SKIN ADVANCED GLYCATION END PRODUCTS WITH PARAMETERS OF DISTAL SENSORIMOTOR POLYNEUROPATHY IN SUBJECTS WITH TYPE 2 DIABETES MELLITUS

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INTRODUCTION: Skin advanced glycation end products (AGEs) may be increased in diabetes mellitus.

AIM OF THE STUDY: To examine the correlation between skin AGEs and parameters of distal sensorimotor polyneuropathy (DSPN) in subjects with type 2 diabetes mellitus (T2DM).

MATERIALS AND METHODS: Overall, 132 subjects (88 men, 44 women) with a mean age of 64.57±8.21 years and median T2DM duration of 14.50 years were included. Skin AGEs were measured with AGE reader mu connect (Diagnoptics) on the dominant arm. Single and triplicate measurements were performed. Diagnosis of DSPN was based on the neuropathy disability score (NDS). Small nerve fibre function was evaluated by temperature and pinprick sensation on the foot. Vibration perception threshold (VPT) on the hallux was measured with a neurothesiometer (Horwell Scientific Laboratory Supplies).

RESULTS: Simple AGEs measurement was positively correlated with their triplicate measurement (Pearson's Correlation Coefficient r=0.991, 95% CI=0.987-0.994, p<0.001). In simple measurement, AGEs were higher among subjects with vs. those without DSPN (3.31±0.73 vs. 2.55±0.56, p<0.001). Furthermore, they were higher among subjects with reduced vs. normal temperature sensation (3.18±0.72 vs. 2.51±0.56, p<0.001), among subjects with reduced vs. normal pinprick sensation (3.86±0.32 vs. 2.84±0.72, p=0.002), as well as among those with abnormal vs. normal VPT (3.45±0.69 vs. 2.74±0.68, p<0.001). The same significant differences were observed in triplicate measurement.

CONCLUSIONS: In T2DM, skin AGEs are increased in the presence of DSPN. Moreover, they are increased, when there is small nerve fibre impairment or abnormal VPT.