

### Is the neuropathy degree an influence for the plantar fascia thickness?

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**Introduction:** Plantar fascia thickness is considered an associated factor in patients with diabetes, more evident in the presence of neuropathy. Most of the studies report that the body mass index (BMI) is a factor which has an influence in the plantar fascia thickness both in patients with and without diabetes. **Aims:** To assess whether the degree of diabetic neuropathy has an influence in the plantar fascia thickness, and if this thickness is associated with the BMI. **Methods:** An observational study was performed in 75 patients that were recruited from our Center. We measured plantar fascia thickness by ultrasonography. Patients were divided in 4 cohorts, cohort 1(n=15) were diabetic non neuropathic patients, cohort 2(n=15) were diabetic subclinical neuropathic patients (abnormal sudomotor test), cohort 3(n=15) were diabetic neuropathic patients (abnormal results in SWM, diapason and sudomotor function test) and cohort 4(n=30) were a control cohort (no diabetic patients). n=30(40%) were men and n=45(60%) were women, with a mean age of  $60.81 \pm 11.41$  years and with a mean diabetes duration  $16.66 \pm 14.14$  years. **Results:** mean plantar fascia thickness was  $3.50 \pm 0.68$ mm for cohort 1,  $3.12 \pm 0.44$ mm for cohort 2,  $3.35 \pm 0.76$ mm for cohort 3 and  $3.29 \pm 0.81$ mm for cohort 4, without statistically significant association between the degree of neuropathy and the plantar fascia thickness (p 0.529). The mean BMI was  $28.89 \pm 4.12$  for cohort 1,  $28.11 \pm 5.31$  for cohort 2,  $28.92 \pm 4.80$  for cohort 3 and  $26.28 \pm 4.65$  for cohort 4, without statistically significant association between the degree of neuropathy and the BMI (p 0.199). Nevertheless, we found statistically significant association in cohort 4 between the presence of obesity (BMI>30) and the plantar fascia thickness (p 0.03). **Conclusion:** The degree of diabetic neuropathy and BMI are not factors which influence on the plantar fascia thickness in patients with diabetes. The development of morphological and functional alterations in the diabetic foot are not depending factors in the neuropathy degree, as we can observe them before the development of the diabetic neuropathy.