

[P48] RELATIONSHIP OF PLANTAR PRESSURE AND GLYCEMIC CONTROL IN TYPE 2 DIABETIC PATIENTS WITH AND WITHOUT NEUROPATHY

Rana El-Hilaly¹, Mohammed Halawa¹, Yara Eid¹, Amr Amer²

¹*Ain Shams University/Faculty of Medicine, Abbasia, Cairo, Egypt*

²*National Institute of Diabetes and Endocrinology, Tanta, Tanta, Egypt*

The most common form of diabetes is type 2 diabetes. Foot disease is a common complication of diabetes that can have tragic consequences. Abnormal plantar pressures are considered to play a major role in the pathologies of neuropathic ulcers in the diabetic foot.

Aim: To examine Relationship of Planter Pressure and Glycemic Control in Type 2 Diabetic Patients with and without Neuropathy.

Subjects and methods: The study was conducted on 30 type 2 diabetic patients without diabetic neuropathy (Group I), 20 patients with type-2 diabetes mellitus with diabetic neuropathy (Group II), Thirty control healthy volunteers (Group III). BMI calculation, disease duration and Hemoglobin A1c were recorded. Plantar pressure was recorded for all patients using the Mat-scan (Tekscan, Inc.vers. 6.34 Boston USA) in static conditions (standing) and dynamic conditions (taking a step on the Mat-scan). Plantar pressures (kPa) were determined at the five metatarsal areas, mid foot area, medial and lateral heel areas and medial three toes.

Results: Static and dynamic plantar pressures in both right and left feet were significantly higher in diabetic with neuropathy group than in control group in measured areas.($P<0.05$). Furthermore, static and dynamic pressures in right and left feet were significantly in diabetic with neuropathy group than in diabetic without neuropathy group in measured areas.($P<0.05$). On comparison between controls and diabetic without neuropathy group there was a significant difference in plantar pressures especially in metatarsal areas. ($P<0.05$) Factors like BMI, Hemoglobin A1c and disease duration showed no significant correlation with the plantar pressure.

Conclusion: Pressure distribution measurement techniques are useful in analyzing and understanding the mechanical behavior of the human foot during static and dynamic loading situations in normal, type2 diabetes, and diabetes with neuropathy subjects. Patients with diabetic neuropathy have elevated plantar pressures compared to patients without neuropathy and control group. Neuropathy as a consequence of diabetes may explain impaired distribution of plantar pressure in subjects with diabetes.