

**Patients with unilateral Charcot foot: medial convexity deformity versus rocker bottom deformity**T.Tsvetkova<sup>1</sup>, V.Bregovsky<sup>2</sup><sup>1</sup>novel SPb LLC, <sup>2</sup>City Diabetological Center, Saint-Petersburg, Russia

**Objective:** To improve understanding of how plantar pressures (hindfoot, midfoot, forefoot, and toes) vary across the diabetes patients with medial convexity (MC) and rocker bottom (RB) deformities (unilateral chronic Charcot arthropathy without amputations). **Methods:** 11 patients with MC and 10 patients with RB without significant differences in gender, age, and duration of diabetes were evaluated. Pedography for affected and contralateral feet was performed with emed-AT 25 system (novel, Munich). Peak pressure (PP in kPa), mean pressure (MP in kPa), maximum force (MF in % of body weight), force-time integral (FTI in % of body weight \*c), contact time (CT in % of roll over process) were calculated. One-factor ANOVA was used for inter group comparison. **Results:** Affected feet (MC vs RB). Hindfoot: MF (Mean±SD): (37±16>30±14, p=0.001). Midfoot: PP (253±170<709±384, p<0.001), MP (73±31<152±56, p<0.001), MF (39±19<60±20, p=0.001), FTI (22±15<34±14, p<0.001), CT (73±9<80±5, p<0.001). Forefoot: MF (71±19>55±21, p<0.001), FTI (34±11>20±10, p<0.001). Toes: PP (241±138>151±128, p<0.001), MP (58±22>44±24, p<0.001), MF (12±5>8±6, p<0.001), FTI (5±3>2±2, p<0.001), CT (69±16>54±28, p<0.001). Contralateral feet (MC vs RB). Hindfoot: CT (74±9>68±9, p<0.001). Forefoot: PP (373±200<499±230, p<0.005), MP (113±22<136±18, p<0.001), FTI (42±11<47±10, p<0.005). Toes: MP (70±15<90±36, p<0.001), MF (16±5<19±9, p<0.005), FTI (7±3<9±6, p<0.005). **Conclusion:** Both medial convexity and rocker bottom are caused by damage in the mid-tarsal and tarsometatarsal joints. While all midfoot pressure parameters were consistently lower in patients with medial convexity, forefoot maximum force and force-time integral as well as all toes parameters for these patients were consistently higher. Maximum force beneath hindfoot was higher also. Forefoot and toes parameters for contralateral feet were significantly lower. These findings suggest that plantar pressure patterns of patients with medial convexity and rocker bottom are different. The comparison of biomechanics in patients with dorsal prominence or ankle subluxation and midfoot arthropathy should be made separately for patients with different types of midfoot pathology.