Radiographical Evaluation Of Periapical Status and Endodontic Root Canal Treatment Quality In Healthy and Type 2 Diabetic Individuals. Volkan Dinc¹, Ayşe Diljin Keçeci¹, Banu Kale², Bulem Üreyen Kaya¹

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Aim: To evaluate the periapical status and endodontic treatment quality radiographically in healthy individuals and patients with type 2 diabetes and to determine any correlation between type 2 diabetes and periapical health.

Materials and Method: 60 healthy and 60 type 2 diabetic individuals of equal number of male and female between 36-72 ages, who applied to the clinic of SDU Medicine and Dentistry Faculties were included into the study considering the permission of ethical committee and the consent forms: Group 1: Healthy (n=60), Group 2: Type 2 diabetes under control (HgA1c<7) (n=30), Group 3: Uncontrolled type 2 diabetes (HgA1c>7) (n=30). Number of missing (M), sound (S), periapically diseased (PAI3-5), root canal treated (RCT), root canal treated and periapically healthy (RCT-PAI1-2), root canal treated and periapically diseased (RCT-PAI3-5), adequately root canal treated (ARCT) and inadequately root canal treated (IARCT), and adequately root canal treated and periapically healthy (ARCT-PAI1-2) teeth were evaluated by two calibrated endodontists using PAI index of Orstavik, root canal and coronal filling quality indexes of Hommez, Kirkevang and Tronstad on panoramic and periapical radiographs. Data were analysed statistically using one way ANOVA and Tukey tests.

Results: In this cross-sectional study, M ratio was 22.2%; 25.2%; 35.2% in groups 1, 2 and 3 respectively. There was a significant difference between groups 1 and 3 (p<0.05). Considering the S ratio (71.7%; 70%; 64.4%, respectively) the difference between groups 1 and 3 was significant (p<0.05). In terms of PAI3-5 ratio (1.3%; 2.0%; 4.2%, respectively) a significant difference was determined (p<0.05). Regarding the ratios of RCT (4.8%; 3.2%, 2.3%), RCT-PAI1-2 (63.5%; 51.9%, 45%).
RCT-PAI3-5 (36.5%;48.1%,55%), ARCT-PAI12 (90.6%;72.2%,75%), no significant differences were found (p>0.05).

**Conclusions:** In patients with type 2 diabetes and especially in uncontrolled ones, periapical disease ratio increased significantly. In these patients, it was noted that tooth loss was significantly more than the other groups and number of adequate root canal treatment was affected negatively.