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Evaluation of Changes in Brain Activity and Cognitive Function of Diabetic Patients Wearing Removable Partial Dentures

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Accumulating evidence suggests that tooth loss may be a major risk factor for brain and cognitive impairment.

Aim:

The present study aimed to evaluate the influence of restoring lost posterior occlusal contacts with removable partial denture (RPD) on the brain activity and cognitive function in controlled type 2 diabetic patients.

Patients and methods:

A total of 30 partially edentulous patients with lost posterior occlusal contacts were selected Outpatient clinic, National Research Centre (NRC). All patients were selected had no previous RPDs experience and diagnosed with controlled type 2 diabetes. For all patients, RPDs were constructed from thermoplastic acrylic resin. The brain activity and cognitive function were assessed using electroencephalogram (EEG) and Mini-Mental State Examination questionnaire (MMSE) respectively, before and after 1 month of RPD insertion. Data were statistically analyzed using t test, and significance level was defined at P value less than 0.05.

Results:

EEG assessment demonstrated an increase in the mean value after 1 month of

wearing RPDs. Similarly, Mini-Mental State Examination of cognitive scores displayed an increase in the total mean value after 1 month. The outcomes were statistically significant ($P < 0.05$).

Conclusion

Restoration of lost posterior occlusal contact in controlled type 2 diabetic patients with satisfactory RPDs can contribute to enhancement of the brain function and cognitive status.

Keywords:

Electroencephalogram, Mini-Mental state examination, Removable partial dentures, Type 2 diabetes

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