INVESTIGATION OF THE EFFECTS OF BRAIN-DERIVED NEUROTROPHIC FACTOR ON FACIAL NERVE HEALING FOLLOWING FLUOXETINE TREATMENT

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ABSTRACT

Objective: Brain-derived neurotrophic factor (BDNF) is a neurotrophic factor that is produced by the brain and functions to aid in the process of neuroplasticity. It is an important factor in the repair of the nerve following nerve injury. In the present study, the effects of fluoxetine on serum BDNF levels following facial nerve injury in rats and the healing of the nerve were determined.

Methods: In the study, 38 rats were used. The rats were divided into five groups: group A, B, C, control group. After a standard facial nerve injury, all groups were given fluoxetine at a dose of 0.1 mg/kg body weight with different treatment methods. The duration of the treatment was 7 and 28 days. After the treatment, EMG's were performed and serum samples were taken to assess BDNF levels.

Results: The serum BDNF levels of the rats were statistically higher in group A1 (fluoxetine 7 days) and group B1 (fluoxetine 28 days) compared to the control group. However, the difference was not statistically significant. The BDNF levels of group A1 were higher than those of group A2 (fluoxetine 28 days), but this difference was not statistically significant. The BDNF levels of group B1 were higher than those of group B2 (fluoxetine 7 days), but this difference was not statistically significant.

Discussion: Fluoxetine did not increase serum BDNF levels significantly with the given dose. However, there were positive effects on healing when used for 28 days. Further studies are needed to ascertain proper application method and dose.

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