خلاصه انگلیسی:

Introduction: Injury to peripheral nerves are common and often poor prognosis. Evening primrose oil has biological effects such as immunomodulatory property and myelination precursors. Electrical activity plays a major role in regeneration process of damaged nerves. The present Study investigated the effect of oral administration of evening primrose oil and electrical stimulation on sciatic nerve function after crush injury.

Materials and Methods: In anesthetized Male Wistar rats, the sciatic nerve was crushed by smooth homeostasis forceps. Sciatic functional index was evaluated by the SFI. Histological changes of gastrocnemius muscle after H & E staining was evaluated by light microscopy. Electrophysiological changes were assessed by nerve conduction velocity (NCV). Immunohistochemistry was used to determine the remyelination of the sciatic nerve by following the interventions.

Results: The SFI difference between EPO+ES, EPO, ES and injury groups at days 28 after operation was statistically significant ($p<0.05$). NCV of the EPO, ES, EPO+ES groups was faster than the injury group ($p<0.05$). Expression of the peripheral nerve remyelination marker, protein zero (P0) was increased in the treatment groups at the days 28 after operation. Muscle atrophy severity was decreased significantly in EPO+ES in comparison to the other groups.

Conclusion: It is concluded that EPO+ES may produce improving effect on the crushed injured sciatic nerve function. Increased expression of the P0 may be involved in improving the effects of combination therapy with EPO and ES on functions, electrophysiological and histopathological features on the injured peripheral nerve.