

Original Paper

Effect of alcoholic extract of *Nigella sativa* seed on alpha motor neurons density of spinal cord following sciatic nerve compression in rats

Jalali M (MSc)¹, Tehranipour M (PhD)^{*2}, Mahdavi Shahri N (PhD)³

¹MSc in Animal Biology, Department of Biology, Islamic Azad University, Mashhad Branch, Mashhad, Iran.

²Associate Professor, Department of Biology, Islamic Azad University, Mashhad Branch, Mashhad, Iran.

³Professor, Department of Biology, Islamic Azad University, Mashhad Branch, Mashhad, Iran.

Abstract

Background and Objective: Compression or sciatic axotomy induces neuronal death in spinal cord alpha motor neuron. This study was carried out to determine the effect of *Nigella sativa* seed alcoholic extract on spinal motor neuron density in anterior horn after sciatic nerve compression in rat.

Materials and Methods: In this experimental study 24 wistar rats were divided into four groups A: control, B: compression, C: compression+treatment with 75 mg/kg alcoholic extract, D: compression+treatment with 50 mg/kg alcoholic extract. In control group muscle was exposed without any injury to sciatic nerve. In compression and treatment group, the right leg sciatic nerve compressed for 60 sec. After four weeks of post operation, L2-L4 and S1, S2 and S3 segments of spinal cord were sampled, processed, serially sectioned and stained with toluidine blue. The number of alpha motor neurons was counted using dissector method.

Results: Neuronal density in compression group (650±32) significantly decreased in comparison with control group (1803±24). Neuronal density in C treated group (1581±47) and D treated group (1543±49) significantly increased compare to compression group (P<0.001).

Conclusion: Alcoholic extract of *Nigella sativa* seed increased the density of alpha motor neurons in spinal cord after sciatic nerve compression in rats.

Keywords: *Nigella sativa*, Sciatic nerve, Density, Neurons, Rat

* Corresponding Author: Tehranipour M (PhD), E-mail: maryam_tehranipour@mshdiau.ac.ir

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