

ABSTRACT

Peripheral nerve injuries often result in prolonged disabilities in millions of people across the globe. Compromised recovery following nerve injuries is attributed to the limited regenerative capacity of neurons. Currently, effective treatment strategies for rehabilitation of injury-induced lost functions are lacking. Neuroprotective capacities of a medicinal plant *Azadirachta indica* (Neem) are widely reported, however, its regenerative potential for injured peripheral nerve is largely unknown. Here, we elucidated the potential effect of *A. indica* on mouse peripheral nerve regeneration. Fresh leaves of *A. indica* were dried, ground and ethanolic extract was obtained. Adult Swiss albino male mice were grouped as control (vehicle treated) and treatment (250mg/kg and 500mg/kg) groups (n=06 per group). All mice were subjected to unilateral left sciatic nerve crush injury. Mice in the control group were orally administered with distilled water while treatment groups received intra-gastric 250 mg/kg and 500mg/kg doses of extract, respectively for 28 days on daily basis. Regeneration of peripheral nerve was assessed using pinprick assay, toe spread motor reflex and sciatic functional index. Our results demonstrated earlier sensory functional recovery in treatment groups. Similarly, we observed improved return of motor reflex during second week of recovery in both the treatment groups, however, all mice regained full motor function recovery at the end of 3rd week of recovery. Collectively, our study demonstrates regenerative potential of *A. indica* and it might be used as an alternative medicine to treat peripheral nerve injuries.