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## Oral Presentation

# Flaxseed Reduces Proinflammatory Factors IL-1β, IL-18 and TNF-α in Injured Spinal Cord Rat Model

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## *Abstract*

The pathophysiology of acute spinal cord injury (SCI) involves primary and secondary mechanisms of injury. Secondary injury mechanisms include inflammation, oxidative stress. The secondary inflammation of spinal cord tissue after SCI was critical for the survival of motor neuron and functional recovery. Flaxseed is a rich source of lignan phytoestrogen, α-linolenic acid. Flaxseed has remarkable anti-inflammatory effect. Adult male wistar rats (n=24) were assigned to four groups: control, laminectomy, SCI and SCI+Flaxseed groups. The SCI model was exerted by placing a 50 g weight for 5 min by a platform applied at the T10 vertebral level. After 4 weeks the blood serum of all rats were collected and the effect of flaxseed on proinflammatory factors level, locomotion score and histologic alterations were assessed. The use of flaxseed significantly decreased the level of proinflammatory factors IL-1β, IL-18 and TNF-α compared to SCI group and improved the motion of the animals in the SCI+Flaxseed group and decreased the demolition of spinal cord tissue after injury. Our study for the first time showed the anti-inflammatory effect of flaxseed on spinal cord injury model in rat, further studies can be done to assess the intake of flaxseed as an effective therapeutic agent for the relative recovery of patients with SCI.

***Keywords:*** Spinal Cord Injury, Neuroinflammation, Flaxseed

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