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The efficacy of a glial inhibitor, minocycline, for preventing persistent pain after lumbar discectomy: a randomized, double-blind, controlled study.

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Abstract

Minocycline strongly inhibits microglial activation, which contributes to central sensitization, a major mechanism underlying chronic pain development. We hypothesized that the perioperative administration of minocycline might decrease persistent pain after lumbar discectomy. We randomly assigned 100 patients undergoing scheduled lumbar discectomy to placebo and minocycline groups. The minocycline group received 100mg minocycline orally, twice daily, beginning the evening before surgery and continuing for 8 days. The primary outcome was the change in lower limb pain intensity at rest between baseline and 3 months. Secondary outcomes were pain intensity on movement, the incidence of persistent pain and chronic neuropathic pain, back pain intensity at rest and on movement, and changes in Neuropathic Pain Symptom Inventory, Brief Pain Inventory, and Roland-Morris scores at 3 months. An intention-to-treat analysis was performed for patients assessed from the day before surgery to 3 months. The decrease in lower limb pain intensity was similar in the placebo and minocycline groups, both at rest -1.7 ± 1.6 vs -2.3 ± 2.4 and on movement -2.5 ± 2.1 vs -3.4 ± 2.9. The incidence and intensity of neuropathic pain and functional scores did not differ between the minocycline and placebo groups. Exploratory analysis suggested that minocycline might be effective in a subgroup of patients with predominantly deep spontaneous pain at baseline. Perioperative minocycline administration for 8 days does not improve persistent pain after lumbar discectomy.

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