



# Effect of D-cycloserine on Postoperative Neuropathic Pain After Lumbar Discectomy

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## Introduction

Neuropathic pain represents a major neurologic complication associated with neuronal injury. It occurs when any injury, disease, or dysfunction nervous system. Nerve root mechanical compression and neuroinflammation are the two main discussed theories for the pathogenesis of neuropathic pain, especially in remained leg pain during lumbar disk herniation (LDH). D- cycloserin (DCS) is a partial agonist of the NMDA receptors and can prevent neuropathic pain theoretically. In this study, we tested the hypothesis that DCS would reduce the postoperative neuropathic pain during the first 24 hours after single level lumbar discectomy.

## Methods

In the present study participants were chosen among candidates for a single level lumbar discectomy, from March 2013 to March 2014. Randomization and data collection patients were randomly allocated in to groups A and B using a numerical randomizing computer system. Each patient received an order number and took an identical capsule 2 hours before surgery containing either 250 mg D- cycloserin or placebo. Visual analogue scale and morphine consumption were compared at 6 hours intervals up to 24 hours.

## Results

Comparing the two groups, the D- cycloserine group showed a significant reduction in remained leg pain during the first 24 hours.

## Conclusions

This study suggests that the decision to treat remained neuropathic pain after lumbar discectomies should be taken before the operation. DCS is effective to decrease remaining leg pain by the end of 24 hours in postdiscectomy patients.

## Learning Objectives

By the conclusion of this session, participants should be able to: 1) Describe the importance of central effects of new drugs like d- cycloserine (DCS) on postoperative pain, 2) Discuss, in small groups, and try to design a new study to compare DCS with other drugs, 3) Identify an effective treatment to reduce postoperative neuropathic pain.

## References

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