PUBLICATION ABSTRACT

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Comparison of treatments for lumbar disc herniation: Systematic review with network meta-analysis

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Abstract

Study Design: Systematic review with network meta-analysis.

Objective: To compare patient outcomes of lumbar discectomy with bone-anchored annular closure (LD+AC), lumbar discectomy (LD), and continuing conservative care (CC) for treatment of lumbar disc herniation refractory to initial conservative management.

Summary of Background Data: Several treatment options are available to patients with refractory symptoms of lumbar disc herniation, but their comparative efficacy is unclear.

Methods: A systematic review was performed to compare efficacy of LD+AC, LD, and CC for treatment of lumbar disc herniation. Outcomes included leg pain, back pain, disability (each reported on a 0-100 scale), reherniation, and reoperation. Data were analyzed using random effects network meta-analysis.

Results: This review included 14 comparative studies (8 randomized) involving 3947 patients-11 studies of LD versus CC (3232 patients), 3 studies of LD+AC versus LD (715 patients), and no studies of LD+AC versus CC. LD was more effective than CC in reducing leg pain (mean difference [MD] -10, P<.001) and back pain (MD -7, P<.001). LD+AC was more effective than LD in reducing risk of reherniation (odds ratio 0.38, P<.001) and reoperation (odds ratio 0.33, P<.001). There was indirect evidence that LD+AC was more effective than CC in reducing leg pain (MD -25, P=.003), back pain (MD -20, P=.02), and disability (MD -13, P=.02) although the treatment effect was smaller in randomized trials.

Conclusions: Results of a network meta-analysis show LD is more effective than CC in alleviating symptoms of lumbar disc herniation refractory to initial conservative management. Further, LD+AC lowers risk of reherniation and reoperation versus LD and may improve patient symptoms more than CC.

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Reducing the incidence of reherniation and reoperation in skeletally mature patients with radiculopathy (with or without back pain) attributed to a posterior or posterolateral herniation, and confirmed by history, physical examination and imaging studies which demonstrate neural compression using MRI to treat a large anular defect (between 4-6 mm tall and between 6-10 mm wide) following a primary discectomy procedure (excision of herniated intervertebral disc) at a single level between L4 and S1.

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