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Efficacy of Epidural Perineural Injections With Autologous Conditioned Serum for Lumbar Radicular Compression

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Study Design: Prospective, double-blind, reference controlled, investigator-initiated, single center.

Objective: To evaluate the efficacy of Autologous Conditioned Serum (ACS; Orthokine) for the treatment of lumbar radicular compression in comparison to Triamcinolon.

Summary of Background Data: Evidence from animal studies indicates that cytokines such as interleukin-1 play a decisive role in the pathophysiology of lumbar radiculopathy. ACS is enriched in the interleukin-1 receptor antagonist and other anti-inflammatory cytokines.

Methods: Thirty-two patients were treated by epidural perineural injections with ACS; 27 patients were treated with 5 mg Triamcinolon and 25 patients with 10 mg Triamcinolon. Treatment was applied once per week for 3 consecutive weeks and followed for 6 months. The Visual Analogue Scale (VAS) of low back pain was the primary outcome measure. The Oswestry Disability Index (ODI) was the secondary endpoint of the study. All statistical analyses were performed in an exploratory manner using SAS for Windows, version 8.2, on a personal computer. Descriptive statistics were calculated for the VAS and ODI by treatment group and time point. The data were submitted to a repeated-measurements analysis of variance with effects on treatment group, time, and treatment group-by-time interaction.

Results: Patients with lumbar back pain who were treated with ACS or the 2 Triamcinolon concentrations showed a clinically remarkable and statistically significant reduction in pain and disability, as measured by patient administered outcome measurements. From Week 12 to the final evaluation at Week 22, injections with ACS showed a consistent pattern of superiority over both Triamcinolon groups with regard to the VAS score for pain, but statistical significance was observed only at Week 22 in direct comparison to the Triamcinolon 5 group. However, there was no statistically significant difference between the 2 Triamcinolon dosages during the 6 months of the study.

Conclusion: ACS is an encouraging treatment option for patients with unilateral lumbar radicular compression. The decrease in pain was pronounced, clinically remarkable, and potentially superior to steroid injection.

Keywords: cytokine, interleukin-1 receptor antagonist, low back pain, autologous conditioned serum, Orthokine, steroid injection, lumbar radicular compression, VAS, Oswestry Disability Index.