Intradiscal Injections of Autologous Conditioned Serum (ACS) for Lumbar Disc Pain

C. Moser¹, D.W. Groenemeyer¹, T. Paduch¹, J. Becker¹, J. Hartmann², P. Wehling²,³
¹Groenemeyer Institute for Microtherapy, University Witten/ Herdecke, Bochum, Germany, ²Private Group Practice Professor Wehling, Dr. Hartmann, Duesseldorf, Germany, ³University of North Carolina, Comprehensive Center for Inflammatory Disorders, Chapel Hill, NC, United States

Background: Biology offers several strategies for restoring the degenerating disc, including the use of natural proteins that increase matrix accumulation and assembly, enhance the number of disc cells, or in other ways lead to restoration of the native healthy disc. This is the basis for administering Autologous Conditioned Serum (ACS).

When peripheral blood is withdrawn and incubated with etched glass beads, leukocytes within the aspirate enrich the plasma with anti-inflammatory cytokines, such as IL-1Ra, as well as growth factors, including FGF-2, TGFβ, and HGF. After centrifuging and filtering, the ACS is returned to the body. It has been used successfully, by way of local injection, for the treatment of human and equine osteoarthritis and radiculopathy.

Methods: A non-blinded, prospective study was conducted to evaluate feasibility and efficacy of ACS injections in patients suffering from lumbar disc pain. 19 patients had a discography and three intradiscal injections of ACS once per week for three consecutive weeks and were followed for six months. Outcome was measured by patient administered outcome instruments (VAS, ODI).

Results: Patients with showed a clinically remarkable and significant reduction in pain and disability after the ACS injection series. Mean improvement was 58% in VAS. 11 out of 19 patients reported at least 50% pain improvement. No serious side effects occurred. There were no infections in this series.

Conclusion: Although, these results must be confirmed in larger clinical trails, the use of ACS in the intervertebral disc could be worthy of consideration given its impressive safety record and rich mixture of growth factors, cytokine antagonists, and, possibly, additional helpful agents.