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Combination of ozone and mesenchimal cells to repair the intervertebral disc [abstract]

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ABSTRACT

Ozone is the best available therapeutic resource for disc herniation, but once the pain is resolved, the intervertebral disc is left with a scar as well as volume reduction, and therefore to osteoarthritis. This situation affects all the anatomical structures that are part of the intervertebral space. This is why Degenerative Disc Disease (DDD) is currently considered a disease that affects not only the intervertebral disc but also the end plates and vertebral bodies. Several years ago we began studying therapeutics for DDD. It is our challenge, to prove that the intervertebral space regains its original integrity and homeostasis.

That is why in 2010 we developed an experimental model of regeneration of the intervertebral disc with mice, and the research protocol. Today, after overcoming some legal issues in Argentina, we begun the regeneration of the intervertebral disc in humans.

Objetives: In this paper we present the firsts patients treated with ozone therapy and pre-differentiated cartilage cells, from February 2016 to the present.

Materials and methods: Patients with DDD who meet the inclusion and exclusion criteria. Subcutaneous cellular tissue and blood were extracted, which were processed according to the corresponding technique to obtain pre-differentiated cartilage cells. After 21 days, the cells were implanted back to the patient in the operating room under neuroleptoanesthesia and radioscopic control. During these days an oxidative preconditioning with ozone was realized to modulate the microenvironment.

Results: Patients showed significant improvement in their pain and RMN images by comparing VAS scales before and after treatment.

Conclusion: The combination of pre-differentiated cartilage cells with ozone therapy is an effective, novel and minimally invasive treatment for DDD. We must increase the number of cases in order to strengthen our results.

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