

Effectiveness and Safety of Oxygen-ozone Treatments for Herniated Disc: the Literature Meta-analysis

Efficacia e sicurezza dei trattamenti con ossigeno-ozono delle ernie discali lombari: le Meta-analisi della letteratura

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In the last few years two main papers were published in international literature about the oxygen-ozone treatment for herniated disc results: A Metaanalysis of the Effectiveness and Safety of Ozone Treatments for Herniated Lumbar Discs by Jim Steppan et al: Ozone Therapy as a Treatment for Low Back Pain Secondary to Herniated Disc: A Systematic Review and Meta-analysis of Randomized Controlled Trials and by Francisco N. De Oliveira Magalhaes et al.: Random-effects metaanalyses were used to estimate outcomes for oxygen/ozone treatment of herniated discs. In the first study a literature search provided relevant studies that were weighted by a study quality score. Separate metaanalyses were performed for visual analog scale (VAS), Oswestry Disability Index (ODI), and modified MacNab outcome scales, as well as for complication rate. This metaanalyses demonstrate the effectiveness and safety of oxygen/ozone therapy for the treatment of herniated discs with data from almost 8,000 patients and from multiple centers in multiple locations. The authors concluded that the treatment has a significant effect that is greater than the sensitivity of the scales being used, and it is beneficial from the patient's perspective. This is impressive in light of the broad inclusion criteria that included patients ranging in age from 13 to 94 years. This shows that the patient selection criteria are important to obtain the best results, but that the oxygen/ozone therapy is still effective even with broad inclusion/exclusion criteria. The safety of the oxygen/ozone treatment is far superior than other treatments for herniated lumbar discs, as it has a very low complication rate of 0.064%. In addition, no cases of discitis were reported after oxygen/ozone therapy, unlike all the other methods of disc volume reduction. This is most likely because ozone is a strong oxidizer and an excellent disinfecting agent. The

complications shown in the meta-analysis are minor and transient, and are easily avoidable by using a device that is designed to eliminate these types of complications (e.g. ozone leakage into the treatment room and high ozone concentrations) during this procedure. The pain and function results are similar to the results for lumbar discs treated with surgical discectomy, but the complication rate is much lower (<0.1%). In the second paper comprehensive literature search was conducted using all electronic databases from 1966 through September 2011. The quality of individual articles was assessed based on the modified Cochrane review criteria for randomized trials and criteria from the Agency for Healthcare Research and Quality. The outcome measure was short-term pain relief of at least 6 months or long-term pain relief of more than 6 months. Eight observational studies were included in the systematic review and 4 randomized trials in the meta-analysis. The indicated level of evidence for long-term pain relief was II-3 for ozone therapy applied intradisally and II-1 for ozone therapy applied paravertebrally. The grading of recommendation was 1C for intradiscal ozone therapy and 1B for paravertebral ozone therapy. The main limitations of this review are the lack of precise diagnosis and the frequent use of mixed therapeutic agents. The meta-analysis included mainly active-control trials. No placebo-controlled trial was found. This second systematic review and meta-analysis of ozone therapy for low back pain secondary to herniated disc indicated the level of evidence is II-3 for ozone therapy applied intradisally and II-1 for ozone therapy applied at the paravertebral muscle and perforaminally for long-term pain relief based on USPSTF criteria. Ozone therapy appears to yield positive results and low morbidity rates when applied percutaneously for the treatment of chronic low back pain.

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