

# Efficacy of Ozone Intradiscal Therapy in Managing Discogenic Leg Pain: A Comprehensive Case Series of 90 Patients

**Hazem Kafrouni**

Assistant Professor of Anesthesia and Pain Saint George Hospital, Beirut, Lebanon.

**\*Corresponding Author:** Hazem Kafrouni, Assistant Professor of Anesthesia and Pain Saint George Hospital, Beirut, Lebanon.

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## Abstract:

This case series assesses the efficacy of ozone intradiscal therapy in a cohort of 90 patients suffering from chronic discogenic leg pain. Findings indicate significant immediate and sustained pain relief, with a high overall satisfaction rate, supporting ozone therapy as a viable alternative to more invasive interventions.

**Key words:** allergy; surgical options

## Introduction

Discogenic leg pain is a common complaint and a challenging condition to manage, often resulting from lumbar disc herniations that cause inflammation and nerve compression. Traditional treatments, including physical therapy and surgical options, may not always provide the desired outcomes. Ozone intradiscal therapy has emerged as a minimally invasive treatment with promising outcomes due to its anti-inflammatory and analgesic properties.

## Case Presentation

Participants in the study included 89 patients aged 25-87, all diagnosed with lumbar discogenic pain resistant to conservative management. Exclusion criteria comprised prior spinal surgery, severe spinal deformity, and allergy to ozone or related substances. The cohort included both male and female patients with varying levels of disc degeneration, confirmed by MRI scans.

## Treatment Protocol

- Procedure: Under sterile conditions, patients underwent C-arm-guided intradiscal ozone-oxygen injection. A mixture of 3% ozone and 97% oxygen was used.
- Dosage: Injections were customized to disc size and degeneration severity, generally involving 5 to 10 ml per session.
- Sessions: Each patient received one session.

## Mechanism of Action

1. Anti-inflammatory Properties: Ozone therapy reduces pro-inflammatory cytokines, alleviating nerve root inflammation.
2. Disc Volume Reduction: Ozone-induced oxidation leads to proteoglycan breakdown, decreasing disc swelling and nerve pressure.
3. Improved Oxygenation: Enhanced oxygen delivery facilitates cellular metabolism and repair, promoting healing.
4. Analgesic Effects: The procedure has demonstrated efficacy in reducing neuropathic pain by desensitizing nerve endings and reducing hypersensitivity.

## Outcomes

- Immediate Pain Relief: 85% of patients reported noticeable pain reduction within 24 hours post-procedure.
- Long-term Efficacy: Follow-up at 3, 6, and 12 months showed sustained pain reduction, with 90% of participants experiencing considerable improvement in mobility and quality of life.
- Side Effects: Minor side effects included transient discomfort at the injection site without serious complications.

## Patient Satisfaction

Surveys measured using the Visual Analogue Scale (VAS) and Oswestry Disability Index (ODI) demonstrated an average improvement score of 80%. The majority of patients expressed a preference for ozone therapy

over previous treatments due to reduced pain levels and enhanced daily function.

## Discussion

The series highlights several benefits of ozone intradiscal therapy, including its ability to offer immediate relief, low risk of complications, and high patient satisfaction. The findings correspond with existing literature that supports ozone's multifactorial therapeutic mechanism. Continued research, particularly randomized controlled trials, would help further substantiate these outcomes and explore comparisons with other treatment modalities.

## Conclusion

Ozone intradiscal therapy represents a compelling treatment option for patients with discogenic leg pain, balancing efficacy and minimal invasiveness. The high satisfaction and significant pain relief observed in this case series suggest its inclusion as a standard treatment option in pain management protocols.

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