

Mini-Invasive Treatment of Herniated Disc by Oxygen-Ozone Injection

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Purpose

Oxygen-ozone therapy (O₂-O₃ therapy) is one of the mini-invasive treatments for lumbar disc disease involving percutaneous injection which exploits the chemical properties of medical ozone, an unstable highly oxidising gas mixture. The aims of this study were to:

- assess patient outcome six months after O₂-O₃ therapy;
- compare the therapeutic outcome of ozone infiltration alone with injection of an O₂-O₃ mixture containing a corticosteroid and an anaesthetic.

Material and Methods

From January 1999 to March 2001 600 patients aged between 20 and 80 years were treated by a single session of O₂-O₃ therapy.

Patients presented clinical signs of lumbar nerve root irritation with CT and/or MR findings of contained disc herniation without or without inter-somatic disc degeneration.

300 patients (group A) were injected with 4 ml of an O₂-O₃ mixture at a concentration of 27_g/ml into the disc and 8 ml into the periganglion.

In addition to this procedure, 300 patients (group B) also received a periganglionic injection of a corticosteroid (1ml di Depomedrol 40 mg) and anaesthetic (2 ml Marcain at 0.50%).

Treatment outcome was assessed six months after treatment using a modified MacNab method.

Results

Treatment was successful in 74.3% of all patients: 70.3% in group A and 78.3% in group B. Treatment failure was 25.7%: 29.7% in group A and 21.7% in group B.

We discuss the criteria for patient selection, the success and failure rates of the treatment in relation to disease type and patient outcome.

Complications included two episodes of reduced sensitivity in the lower limb ipsilateral to treatment both of which resolved spontaneously within two hours.

Conclusions

The results obtained by O₂-O₃ therapy were comparable to those of other mini-invasive treatments like Onik's nucleodisectomy or enzymatic chemonucleolysis. Treatment proved more effective when the O₂-O₃ mixture was combined with a corticosteroid, in agreement with literature findings on the intradiscal and periganglion infiltration of corticosteroids.

Our success rate following O₂-O₃ therapy was satisfactory. O₂-O₃ therapy is a treatment option in between conservative management and surgery and should be entertained when conservative treatment of symptomatic disc disease fails.

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