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Oxygen-Ozone Therapy and Amitriptyline in Disc Diseases and Herniated Intervertebral Discs

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Key words: oxygen-ozone therapy, herniated disc

SUMMARY – Nowadays there are several treatments to deal with disc-articular diseases as well as acute and chronic pain; they are all aimed at accelerating the resolution of symptoms, minimizing the psychological and occupational impact, preventing relapses and chronic situations.

A new treatment for disc-articular conflicts is oxygen-ozone therapy, which gives good results in 90% of cases. All the patients with vertebral disease treated followed the national protocol S100T 953902 for a multicentric controlled evaluation, in perspective and at random, of oxygen-ozone therapy impact by intramuscular injection into the slipped disc. Patients' compliance with O₂-O₃ therapy is good and complications in administering O₂-O₃ mixture are not recorded, either at a local level (allergic reactions or implications) or at a general level (anaphylactic shock, hepatic or renal complications).

Some cases were simultaneously treated with oxygen-ozone therapy and amitriptyline and a more rapid improvement was noted, either concerning pain or slipped disc reduction, as well as improved mood (considering that alteration of mood is frequent in patients with painful disease).

Ossigeno-ozono terapia e amitriptilina nelle discopatie ed ernie discali

RIASSUNTO – *Ad oggi i trattamenti volti a combattere la patologia disco-articolare nonché il dolore acuto o cronico sono tanti, e tutti mirano ad accelerare la risoluzione dei sintomi, di minimizzare l'impatto psicologico ed occupazione, di prevenire le recidive e la cronicizzazione.*

Oggi esiste un nuovo trattamento dei conflitti disco-articolari (e come le altre terapie non perde di vista il paziente, il suo dolore, il suo disagio): è rappresentato dalla ossigeno-ozono terapia che dà risultati buoni fino al 90% dei casi. Tutti i pazienti con patologie vertebrali trattati, hanno seguito il protocollo nazionale S100T 953902 per una valutazione prospettica controllata, randomizzata, multicentrica, di efficacia tollerabilità della ossigeno-ozono terapia per iniezione intramuscolare nell'ernia discale. La compliance dei pazienti verso l'O₂-O₃ terapia è buona e non sono state registrate complicazioni nella somministrazione della miscela O₂-O₃ né a livello locale (reazioni allergiche o ematomi) né a livello generale (reazioni anafilattiche o compromissioni epatiche o renali).

Alcuni casi sono stati trattati contemporaneamente con ossigeno-ozono terapia e Amitriptilina e si è riscontrato un miglioramento più rapido sia per quanto riguarda il dolore e la riduzione dell'ernia, nonché un miglioramento dell'umore (considerato che l'alterazione del tono dell'umore nei pazienti affetti da patologia dolorosa è un sintomo frequente).

Introduction

Disc diseases are extremely common and they cause great suffering to their "victims", determining acute or chronic pain to districts involved.

In cervical disc disease, the pain, usually absent during night rest, increases during the day in relation to particular positions of the neck; this is often the first stage of a serious degenerating condition that strikes the vertebral pulp, then involving all the anatomical components of the spine.

The cervical segment most commonly affected is C5-C7, due to the great mobility of this part and to its remarkable attitude of lordosis, which makes the distribution of pressure on disc surfaces unfair.

Symptoms linked to slipped disc sufferings (at a lumbar-sacral level, L5-S1) are similarly painful: they are characterized by pain and tingling that increase after lifting the leg, radiating at the sole of the foot.

Nowadays there are several treatments to deal with disc-radicular diseases as well as acute and chronic pain (orthopaedic, neurological, physiotherapeutic); they are all aimed at accelerating the resolution of symptoms, minimizing the psychological and occupational impact, preventing relapses and chronic situations.

A new therapeutic approach is the oxygen-ozone therapy. Besides its anti-inflammatory action, oxygen-ozone therapy shows a remarkable action on the microcirculation. Evaluating the therapeutic effectiveness of oxygen-ozone therapy on disc conflicts due to slipped hernia, we selected 27 patients (age range from 28 to 87 years) affected by herniated intervertebral disc diagnosed by CT; 25 of them had lumbar disease and two cervical disease.

Material and Methods

A neurological preliminary examination was performed for each patient; it highlighted the limitation of positions as well as painful symptoms corresponding with Lasegue's sign.

In lumbar disease, 30 μg of O_3 per ml of O_2 were administered at every sitting by 10 cc bilateral intramuscular injection (needle n. 23G) for each diseased disc.

In subjects affected by multiple disc disease, a total of four paravertebral intramuscular injections were made.

In cervical disease, 20 μg of O_3 per ml of O_2 were administered by bilateral intramuscular injection (needle n. 25G) for each diseased disc,

about 4 cc in total for every point of injection; no more than four paravertebral injections at any sitting.

In both diseases (cervical and lumbar) sittings had a twice-weekly frequency.

Five patients out of twenty-seven presented mood depression and very serious painful symptoms.

It is well-known how depression lowers endurance to pain, increases the need for analgesics and matches the debilitating effects of pain. Besides oxygen-ozone therapy, these five subjects were therefore treated with amitriptyline, dosage range from 10 to 30 mg (major dosage at bedtime).

This way, we used the analgesic useful action of this substance which is based on strengthening biogenous amines (norepinephrine and serotonin, the neurotransmitters of the modulation of the pain) and we obtained a return to normality in the tone of humour and in all the parameters linked to depression (insomnia, headache, loss of appetite, etc).

Results

Treating lumbar disease, we obtained a complete recovery from painful symptoms; CT sixty days after treatment, revealed that oxygen-ozone therapy improves oxygenation and local circulation and acts on arachidonic acid altering the structure of prostaglandins' precursor (as an anti-inflammatory and a local analgesic)^{1,4,6}; then, it is likely to dehydrate, resolving clinical symptoms.

The clinical-neurological test performed two months after the end of the treatment showed complete motility of the spine without lumbar pain, Lasegue's sign, analgesic gait on tingling. Just one female patient affected by three protrusions (L3-L4, L4-L5, L5-S1) had short lasting results (considering that her disease has lasted for over a decade).

Conclusions

Considering that the application of oxygen-ozone therapy to disc-radicular conflicts gives good results in 90% of cases; that the surgical operation (not guaranteeing 100% of results) is not always practicable and people are not always disposed to undergo it; the patients' compliance towards oxygen-ozone therapy is good and no complications occurred in administering O_2 - O_3 mixture, either at a local level (allergic reactions, haematomas) or a general one (anaphylactic shock, hepatic or renal

complications) we may define this treatment as a new remedy to be regarded as a first-choice cure for vertebral diseases causing disc-radicular conflicts, paying attention to the fact that all the patients treated had already undergone classical therapies (ionophoresis, ultrasound, marconitherapy, etc) in the previous years with short lasting or insignificant results.

We highlight a remarkable increase in pain in five patients, revealing a hidden and previously undiagnosed depression together with painful symptoms.

The use of amitriptyline reduces painful symptoms and improves the mood.

Therefore, matching O₂-O₃ with amitriptyline leads to full clinical recovery, both organic (reduction of hernia or protrusion) and functional (pain vanished and mood improved).

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