

Hyperbaric Oxygen Therapy In The Treatment Of Post-Menopausal Osteoporosis

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A vast amount of research has shown that hyperbaric oxygen therapy has the capacity to reactivate osteogenetic cells which are metabolically quiescent.

This has been shown in experimental osteoporosis, and in the repair of fractures, both in man and in animals. Its effectiveness in the therapy of post-menopausal osteoporosis has, however, less documentary evidence.

The aim of our work has been to show the role played by H.O.T. in the treatment of this pathology, and its synergic action when associated with a specific pharmacological treatment.

Material and methods

Files were collected of 60 female patients in menopause, between the ages of 50 and 65, suffering from osteoporosis diagnosed and documented through bone densitometry? Women with chronic renal insufficiency, endocrine diseases, those undergoing therapies which might influence bone metabolism, and those with cardiopulmonary disorders were excluded. The patients were divided at random into four sub groups of 15 people to each group.

Group A - Treatment with HOT - 20 treatments a day 1.8 ATA lasting 90 minutes. Three month cycles (one month of treatment, 2 months suspension 8 cycles of therapy).

- Group B - Treatment with calcitonina - Therapy with only calcitonina (100 U.I./die)
- 8 cycles of 3 months, with intervals of 2 months without therapy.
- Group C - Associated treatment - Treatment HOT with calcitonina, using the same procedure as groups A and B.
- Group D - Control group - No specific treatment.

For the therapy with calcitonina, salmon calcitonina in spray solution was used (Armour). Daily dosage - 100 U.I./die. Before the beginning of very treatment, then every three months until the end of the complete procedure, (24 months), all the patients underwent examination with instruments and in laboratory: 1) bone densitometry taken on the proximal and (?) of the radius (instrument Norland 2600 using Gandolinio 150); 2) calciuria, idrossiprolinuria, fosfaturia; fosfatasi alcalina serica.

For HOT treatments a hyperbaric chamber (?) Galeazzi was used more than one apparatus with space for more than one patient.

The resulting data was analysed statistically according to Test t of Student for paired data.

Results-discussion Results obtained from the 4 groups did not show a significant variation in the density of compact bone in all four groups. As far as trabecular bone was concerned, it was possible to see: in group A a reduction of 1.45% (annual average) ($p < 0.05$) of bone density; in group B an increase of 0.43% (annual average) of bone density - statistically not significant. In group C an increase of 2.3% (annual average) ($p < 0.05$) of bone density. In group D (control group) a decrease of 3.04% (annual average) ($p < 0.1$) of bone density. As far as biohumoral parameters (?) of bone density are concerned, no statistically significant differences are noted. Basing our common on these results, we can affirm that HOT produces a slowing down of the process of density loss in the treatment of post-menopausal osteoporosis.

More significant, however, is shown to be the pharmacological association of HOT and calcitonina, which has resulted in a significant increase in density, and thus in bone mass.

It is possible, therefore, to conclude that, in the treatment of post-menopausal osteoporosis, the association of calcitonina and HOT is that which, at the present moment, is able to produce the best results.