In 1981, the first experiences of "Intravenous Laser Blood Irradiation" (ILBI) by N. Menshakin and V.S. Sergievsky, both Russian scientists, were published. With the development of semiconductor lasers, with greater stability and power capabilities, the same applications of irradiation with light, can be done transcutaneous (TLBI) (G. Brill, 1994) with consequent advantages of a non-invasive therapeutic technique.

It has been shown that ILBI (and TLBI) stimulates body's immune responses and activates the regeneration, and in general improves deformability of erythrocytes membrane. The irradiation of laser light has also an anti-hypoxic and analgesic effects on tissues, anti-inflammatory, vasodilator properties, spasmytic and others which have been found with beneficial effects on pathological processes.

Different studies have shown that red laser light irradiation "in vitro and vivo" increases the production of nitric oxide (NO) (Klebanov G. et al., 1998; Klebanov G. et al., 2000; Maegawa Y. et al., 2000) with the consequence of increasing synthesis of GMP (Guanosine MonoPhosphate) cycle in the smooth muscle cells and platelets (Brill G. et to the., 1997). This mechanism may explain the vasodilatation induced by the laser, the inhibition of platelet aggregation and some other effects on the cellular levels in body (Brill A.G. et al., 2000; Yaakobi T. et al., 2001; Minsky N. et al., 2002). There are studies of the ILBI in cellular immunity (N.F. Gamaleya et al., 1991) where the phagocyte activity of macrophages increases and, among other effects, detects an improvement of Microcirculation.

Irradiation of blood by one or the other methods also activates other indeterminate immunity mechanisms, intensifies the bactericidal activity of blood serum and the complement system, reduces the level of c-reactive protein and produces an increase in the content of immunoglobulin's IgA, IgM and IgG in blood serum.

The ILBI promotes the improvement of rheological properties of blood, increasing its fluidity and activating functions of transport 1,2 (Mi et al, 2004). This is accompanied by an increase in the level of oxygen. Arterio-venous oxygen partial pressure increase testifies the reduction of hypoxic tissues, which is a sign of normalization of tissue metabolism.

Some earlier works of ENT specialists and others 3,4,5 (S. Tauber, L. Wilden, L'Prochazka, M. Zazio and more), long time ago had already announced positive results in the treatment of different hearing disorders through irradiation with laser light of the inner ear in different patients.

The treatment of various labyrinthine disorders it's still a medical activity exempt from uncertainty when dealing with the disease in the most efficient manner. Unfortunately in many intractable vertigo patients usual drug therapy, nor the intratympanic corticosteroid way, are able to avoid the undesirable alternative solution of vestibular ablation.

REFERENCES

METHOD AND MATERIALS

Photo-Bistimulation Laser Data & Therapy protocol
- Two types of semiconductor lasers emitting 650nm and 808nm light wavelength.
- 3044 regulated maximum output power did not exceed the 100 mW (650nm) and 300 mW (808 nm).
- The intensity of energy applied, variable according to the disorder and each patient, did not exceed 1.8 w/cm2 for 808 nm and 0.20 w/cm2 for 650 nm laser.
- The laser probe is introduced into the ear canal, placing it at a distance approximately 15-17 mm of the eardrum.
- The evaluation of therapy and their effects, for all patients, were check-in after a standard protocol of 12 sessions, twice a week, in 6-7 weeks of treatment.
- In any case, the photo-thermal effect is used. The heat does not act and does not explain the effects and benefits of the photo-bistimulation.

RESULTS

A retrospective descriptive study was conducted on a sample of 65 adults in different cities of Spain between January 2010 and July 2011.

Patients without prior selection of their condition had been diagnosed with "peripheral vertigo" pathology by different teams of ENT services. Of the 65 patients treated early, fifty (50) responded to the questionnaire and were included in the follow-up.

In the Group of 50 cases, control of the vertigo, according (criteria of AAO-HNSF guidelines), 64% of patients were classified on Category A (zero crisis after 18 months treatment finished) on their vertigo management and the rest of patients (36%) were into Category B. Among the patients of Group B, all show that crises (1 or 2 times maximum) have always been of shorter duration and less severity in relation to previous treatment.

CONCLUSIONS

1. The approach of labyrinthine disorders with the technique of irradiation by LPT (Laser Photo-Therapy) in the treatment of peripheral vertigo is a very effective alternative, to the current IT(Intratympanic Therapy) via with corticosteroids.
2. The observed results show that bistimulation with Photo-therapy by laser light normalizes the homeostasis of the cochlea and regenerates other mechanisms of auditory structures in the inner ear, with the consequent benefits of remission or reduction of the treated disorder.
3. LPT is painless, safe and no side or adverse effects for the patient.
4. The benefits and results are achieved in a short space of time, between 6 and 8 weeks.
5. There is a good control of vertigo in all patients and there are very few requiring reviews of maintenance or repetition, without major complications by its simple approach.

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