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T helper 1 response is correlated with widespread pain, fatigue, sleeping disorders and the quality of life in patients with fibromyalgia and is modulated by hyperbaric oxygen therapy.

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OBJECTIVES:

Hyperbaric oxygen therapy (HBOT) has been used as treatment for different clinical conditions, including fibromyalgia (FM). HBOT modulates brain activity, ameliorates chronic pain and modifies the ratio of immune cells. Clinical studies have provided evidence that FM is associated with immune system dysregulation. In the present study we aimed to evaluate the effect of HBOT on immune system and on the quality of life-style of FM patients.

METHODS:

Patients with primary FM and controls were treated with HBOT. Physical, emotional and social assessment, quality of sleep, tender points, intensity score, WPI and symptom severity were evaluated before and after HBOT. Furthermore, a characterisation of CD4 T lymphocytes and their cytokine production was performed by flow cytometry. The expression of TNF- α , IFN- γ , IL-17, IL-9 and IL-22 was also assessed by RT-PCR. Finally, the serum levels of serotonin were evaluated by ELISA.

RESULTS:

Our results confirm the participation of immune system in the pathogenesis of FM and highlight the impact of HBOT treatment, with particular regard to the changes on proinflammatory cytokines production by CD4 T cells subsets.

CONCLUSIONS:

FM patients show a Th1 signature and the activation of this subset is modulated by HBOT. PMID:30747094