

Hyperbaric oxygen therapy and its emerging role in the management of non-neuropathic pain

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I read with great interest the recent article by Gu et al. (2012). The article is highly thought provoking. Interestingly, recent studies indicate that hyperbaric oxygen (HBO) therapy may play a significant role in ameliorating pain besides neuropathic pain.

For instance, Wilson et al. have demonstrated the effectiveness of HBO therapy in decreasing mechanical hypersensitivity in animal models of inflammatory pain (Wilson et al., 2006). In fact, Kiralp et al. have recently demonstrated the effectiveness of HBO therapy in alleviating the pain associated with myofascial pain syndrome (Kiralp et al., 2009). HBO therapy is also helpful in patients with complex regional pain syndrome as it decreases the development of oedema and enhances the range of motion besides mitigating pain (Kiralp et al., 2004).

Similarly, HBO therapy increases the pain threshold in individuals with idiopathic femoral head necrosis (Bennett, 2011). Interestingly, HBO therapy has also been shown to attenuate pelvic pain in females with recalcitrant interstitial cystitis (Tanaka et al., 2011). HBO therapy is also effective in ameliorating pain in patients with acute compartment syndromes such as paraspinal compartment syndrome (Karam et al., 2010). Similar benefit is noted in arteriopathy-associated pain (Gerard et al., 1967). Nitric oxide and tumour necrosis factor-alpha play a major role in mediating the antinociceptive effects of HBO therapy in non-neuropathic pain (Ohgami et al., 2009; Li et al., 2011).

Rarely, oxygen toxicity may occur secondary to HBO therapy. Despite this, HBO therapy holds significant potential in the management of both neuropathic and non-neuropathic pain especially in treatment-resistant patients.

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