Hyperbaric therapy and cancer treatment

Hyperbaric oxygen (HBO) therapy is the use of oxygen under elevated atmospheric pressure, that is, at a pressure higher than the pressure found on the surface of the earth at sea level, which is defined to be 1 atm. The higher pressure during hyperbaric oxygen treatment pushes more oxygen into plasma and increases the amount of oxygen bound to hemoglobin. Hyperbaric oxygen treatment has for centuries been used to improve or cure disorders involving hypoxia and ischemia, by enhancing the amount of dissolved oxygen in the plasma and thereby increasing O2 delivery to the tissue. Studies on HBO and cancer have up to recently focus on whether enhanced oxygen acts as a cancer promoter or not. As oxygen is believed to be required for all the major processes of wound healing, one feared that the effects of HBO would be applicable to cancer tissue as well and promote cancer growth. Recent studies have shown that the hyperbaric oxygen therapy can successful as a radio sensitizer, as a chemotherapy agent, in the management of radiation induced chronic lesions and also as an adjunctive therapy to therapeutic radiation. In this paper we have summarized the results of prior studies and supplemented this with current findings. Based on the findings, there is no evidence indicating that HBO neither acts as a stimulator of tumor growth nor as an enhancer of recurrence. On the other hand, there is evidence that implies that HBO might have tumor-inhibitory effects in certain cancer subtypes.

Biography

Sadir Alrawi is currently the Director of all Surgical Oncology Services at Alzahra Cancer Center in Dubai and its tertiary referral cancer center for all UAE, hosting highly specialized surgical oncology subspecialties, including colorectal, breast oncology, head & neck surgery, urology, gynecological oncology, sarcoma/melanoma and peritoneal surface malignancy, in addition to pancreatic and hepatic surgery. He was the Chief of Surgical Oncology Division at Tawam Hospital and was the Interim Chair of Department of Surgery, Tawam Hospital affiliated with John Hopkins Medical System. His major interests are gastrointestinal oncology, including esophageal, gastric, pancreas, liver and colonic surgery with special interest in endocrine surgery including thyroid, parathyroid and adrenal surgery.

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