

Abstract

Fifth International Symposium for Hyperbaric Oxygen Therapy and the Recoverable Brain

Hyperbaric Oxygen Therapy as Aid in Cancer Care for Chemotherapy and Radiation Therapy

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INTRODUCTION: Treatment of bone and soft tissue radionecrosis is an approved use of hyperbaric oxygen therapy (HBOT). Less well recognized is the value of HBOT in treating many other complications in the cancer patient to decrease morbidity and increase survival. For example, extravasation of chemotherapy agents, mucocytis, fatigue, anemia and chemo brain. Also there is now increasing data that HBOT in conjunction with radiation and chemotherapy can increase survival.

RESULTS: The benefit of HBOT in soft tissue and bone radionecrosis is well documented for adults and has also been reported to provide similar benefits for children. HBOT has significantly decreased the morbidity of chemotherapy extravasation and should also decrease morbidity of the hand/foot syndrome complication of chemotherapy. HBOT is the routine treatment for carbon monoxide poisoning and decompression illness. There is growing recognition of the value of HBOT in treatment of both adults and children for cerebral palsy, stroke, autism, Lyme disease, ataxia-telangiectasis, brain trauma, multiple sclerosis and encephalopathies from meningitis and hypoxia. Similar to results in other neurological conditions, HBOT has cleared symptoms of the recently described, "chemo brain" in a patient who is now out of her "fog" and has returned to work for the first time in six years. HBOT has also been successful in treating radiation damage to the central nervous system. Acute blood loss anemia is also a recognized indication for HBOT. HBOT, therefore, could be a significant factor in treating the anemia, white blood cells depression of cancer and might be synergistic with erythropoietin and Neulasta. HBOT has benefited the patient with chronic fatigue syndrome and has helped the cancer patient with fatigue.

Reports from Japan in 1999 showed that HBOT given immediately prior to radiation therapy (XRT) for brain tumors resulted in a 50% increase survival. While the pre-radiation HBOT report from Japan was in adults, similar response could be expected for brain tumors in children. I can personally attest to the fact that HBOT immediate before XRT is effective. I used this technique 20 plus years ago to achieve longterm survival for difficult cases such as chest wall synovial cell sarcoma. Also, T.R. Shantha, M.D. and others have reported the benefit of HBOT when used with chemotherapy. The research in use of PET scans to image hypoxia in areas of malignancy will document the need for and value of HBOT.

CONCLUSION: The concern that increased oxygen might stimulate the growth of cancer is countered by the years of data from use of HBOT in soft tissue radio necrosis and Osteoradionecrosis in both adults and children. Patients receiving HBOT as part of the reconstructive process have significantly less cancer recurrence than those who did not receive HBOT. Also, there is experimental animal data showing that HBOT decreases the implantability of cancer cells and may restore apoptosis since cancer cells have a hypoxic metabolism. There is a significant need to expand the use of HBOT as supportive therapy in oncology for adults and children.

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