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Abstracts from the Diving and Hyperbaric Medicine Special Interest Group session

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Hyperbaric oxygen for osteoradionecrosis prophylaxis – treat at 203 or 243 kPa?

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Purpose of study: Hyperbaric oxygen (HBO) is currently used in the treatment of a variety of radiation tissue injuries. HBO is also used to prevent the onset of mandibular osteoradionecrosis (ORN) when planned surgery is undertaken on the previously irradiated mandible; this is termed ORN prophylaxis. A tested protocol involves 20 HBO sessions pre-operatively and 10 sessions post-operatively. While this number of exposures is widely used, HBO has been applied at a range of treatment pressures – typically 243 kPa (2.4 ATA) or 203 kPa (2.0 ATA). Arguments exist for each; however, there is no clinical evidence favouring one over the other. This institution has, over a period of time, treated ORN prophylaxis at both of these pressures. Is there any difference in outcome between these two treatment pressures for our facility?

Methods: With institutional ethics committee approval, an audit was undertaken for patients treated with HBO for ORN prophylaxis between 1992 and 2004. Retrospective case note review documented treatment pressure and whether healing was achieved following surgery.

Results: 38 cases providing the required information were found. For 10 cases treated at 243 kPa there was one case of new ORN (failed prophylaxis). The range of HBO was 12–33 treatments with the case of ORN receiving an atypical course of 12 HBO treatments. For the 28 cases treated at 203 kPa there were two cases of ORN with a range of 29–32 HBO treatments. There was no difference in risk of ORN for these two groups (two-tailed Fisher Exact test, P = 1.0).

Conclusions: For the small sample analysed, no difference in outcome could be found for mandibular ORN prophylaxis treated with HBO at either 243 kPa or 203 kPa. Our experience does suggest there is a risk for failed prophylaxis if the published protocol of 20 HBO pre-surgery and 10 HBO post-surgery sessions is not followed.

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Key words
Meetings, osteoradionecrosis, hyperbaric oxygen therapy

Bleomycin and hyperbaric oxygen therapy – what is a rational approach based on the current evidence?

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Bleomycin is a chemotherapeutic agent used for the treatment of squamous cell, testicular and lymphomatous cancers. Interstitial pneumonia and chronic pulmonary fibrosis are therapy-limiting adverse effects of bleomycin. Case reports exist of patients previously treated with bleomycin being exposed to hyperoxia during general anaesthesia subsequently developing fatal respiratory distress syndrome. Largely as a result of these case reports previous bleomycin exposure is considered by many as an absolute contra-indication to hyperbaric oxygen therapy. It is this author’s belief that bleomycin should be considered a relative and not an absolute contra-indication to hyperbaric oxygen therapy. Small numbers of patients previously treated with bleomycin have been uneventfully treated with hyperbaric oxygen and many have successfully undergone general anaesthesia. To make a rational risk-versus-benefit decision we must consider in detail what the current evidence suggests in regards to the general risks of bleomycin and oxygen therapy and whether it is possible to risk stratify patients previously treated with bleomycin, identifying those at high risk of an adverse outcome. Factors such as time lapsed since bleomycin treatment, the total dose, evidence of pulmonary complications and the patient’s creatinine clearance all need considering. We must also of course consider how strong the indication for hyperbaric oxygen therapy is. This review attempts to make sense of evidence available in an effort to provide clinicians with a rational approach should a patient previously treated with bleomycin be referred to Hyperbaric Medicine.

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Key words
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