

Hyperbaric oxygen treatment for refractory haemorrhagic cystitis occurring after chemotherapy and haematopoietic stem cell transplantation: retrospective analysis of 25 patients

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Abstract

Introduction: Intractable haemorrhagic cystitis (HC) is a serious complication of chemotherapy (CT) and haematopoietic stem cell transplantation (HSCT). Hyperbaric oxygen treatment (HBOT) is a promising treatment option based on the similarities in injury pattern and observed histological changes with radiation induced HC, which is an approved indication. We present our experience with HBOT in HC occurring after CT and HSCT.

Methods: Medical files of patients who underwent HBOT between the years 2000-2020 for HC that developed after chemotherapy and/or HSCT were reviewed. Demographic data, primary diagnosis, history of HC and details of HBOT were documented. Treatment outcomes were grouped as complete and partial healing, no response and deterioration.

Results: Twenty-five patients underwent a median of 12 HBOT sessions for HC occurring after CT and HSCT. Complete healing was observed in 11 patients whereas haematuria improved in seven patients. HC grades after HBOT were significantly better than referral grades. A significant correlation was shown with the number of HBOT sessions and change in haematuria. Patients who underwent seven or more HBOT sessions benefitted most.

Conclusions: HBOT appears to be a safe and effective treatment for refractory HC following CT and HSCT. Higher quality evidence would be needed to prove efficacy. However, given the difficulty of conducting randomised controlled trials on such a

vulnerable and small group of patients with few treatment options, and given the consistency of current observational evidence, HC occurring after CT and HSCT may be considered as an optional or investigational indication for HBOT.