



Hyperbaric Oxygen Therapy for Ostomy Patients: A Pilot Case Study

T. Lo MD, MPH, CWSP, ABPM-UHM, C. Song MHID, A. Alismail MS RRT-NPS, D. Bland MBBS

*Hyperbaric & Wound Medicine Service
Division of Pulmonary and Critical Care Medicine
Department of Medicine
Department of Respiratory Care
Loma Linda University Medical Center*



Background

Hyperbaric Oxygen Therapy (HBOT) delivers 100% oxygen at a pressure higher than sea level (see figure 1). HBOT is approved for a number of indications such as refractory osteomyelitis, soft tissue radionecrosis, compromised graft/flap, osteoradionecrosis, diabetic lower extremity wounds, decompression sickness, carbon monoxide poisoning and air embolism. Ostomy patients in need of HBOT are often left untreated because of the lack of published data about the safe utilization of this therapy for these patients. In this case series we report the effects of HBOT on 5 ostomy patients.

Indication for Treatment	Number of Subjects	Etiology
colostomy	3	ovarian or colon cancer
ileostomy	1	ulcerative colitis
gastrostomy	1	unknown

Table 1: Indications for Ostomies

Case

Sixty-two HBOT patient records were reviewed from 2012 to 2013. Out of these patients 5 had ostomies during HBOT, 3 female and 2 male. They ranged in age from 20 to 72 years. Type of ostomies included colostomy, ileostomy and gastrostomy with duration ranging from 1 year to over 30 years (see table 1). Adverse effects from ostomies included stoma bleeding (1), painful abdominal gas (1) and skin irritation (1). HBOT pressures ranged from 2.0 to 2.5 atmospheres absolute for 90 minutes duration for 30 to 60 treatments. Diagnoses for HBOT were all unrelated to their ostomies and consisted of compromised graft, refractory osteomyelitis and soft tissue radionecrosis (see table 2). Reported adverse effects from HBOT included claustrophobia (1) and ear pain (1), neither of which required terminating the HBOT course. Positive effects reported by patients undergoing HBOT were reduction of stoma bleeding (1) and improvement in vision (1). There were zero mortalities related to HBOT.

Discussion

Medical literature shows that HBOT is able to increase oxygen transport by blood plasma, stimulate angiogenesis, stimulate platelet-derived growth factors, and even help recover damaged organs and tissues by mobilizing stem cells and progenitor cells from the bone marrow. Hyperbaric oxygen therapy delivers oxygen with the use of a pressure chamber (Figure 1). Ostomy cases are often needlessly excluded from HBOT treatment because healthcare practitioners worry that the pressure in the chamber will adversely affect the gases in the ostomy bag. Physicians believe that the pressure will cause ballooning and patient discomfort, and run the risk of exploding. This precludes patients who may benefit from the therapeutic properties of HBOT. However, we identified 5 patients with ostomies who received HBOT without adverse effects.

Indication for Treatment	Number of Subjects	Treatment Parameters
compromised graft	2	20 - 30 treatments, 2.0 ata
refractory osteomyelitis	1	40 treatments, 2.0 ata
soft tissue radionecrosis	2	40 treatments, 2.0 - 2.5 ata

Table 2: Indications for HBOT



Figure 1. Hyperbaric Oxygen Chamber

Conclusions

1. HBOT was well tolerated by these ostomy patients as indicated by lack of mortalities or serious adverse effects.
2. A larger case series is warranted to further study the relationship between ostomy patients and their tolerance of HBOT.