

Hyperbaric Oxygen Therapy For Critically Ill Patients

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Issues Related to Critically Ill

- Transport
- Unit Space Capacity
- Equipment and Instrumentation

Hyperbaric Oxygen Therapy for the Critically Ill: How Safe is it?

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METHODS

- Retrospective study between 2007-2012
- Calculated
 - APACHE II- Acute Physiology and Chronic Health Evaluation
 - SAPS II- Simplified Acute Physiology Score
 - SOFA- Sequential Organ Failure Assessment
- The number of ICU devices used
- Use of vasoactive medications during HBOT
- Number of HBO treatments

INCLUSION CRITERIA

- Patients undergoing HBOT while admitted to a Critical Care Unit



SUBJECT DEMOGRAPHIC

Age Range (yrs.)	22-82
Females (n)	10
Males (n)	12
HBOT Pressure (ATA)	2.0-3.0
HBOT Duration (min.)	90-100
HBOT Frequency (x day)	2-3
# of HBO Treatments (n)	3-40

Diagnosis for ICU

Septic Shock, Mucormycosis	Cerebral Air Embolism
Sepsis	Acute Encephalopathy
Cardiogenic Shock, Acute MI	Metabolic Encephalopathy
Acute Respiratory Failure	Diabetic Ketoacidosis
Acute Respiratory Distress	Necrotizing Fasciitis
Acute Kidney Injury	Compromised Graft
Acute Renal Failure	Gangrene
CO Poisoning	Sternal Wound Infection

Diagnosis of HBOT

Compromised Graft/Flap	6
CO Poisoning	6
Necrotizing Fasciitis	5
Mucormycosis	2
Acute Arterial Insufficiency	1
Cerebral Air Embolism	1
Soft Tissue Radionecrosis	1

ICU Parameters for HBOT Patients

ICU Parameters	# of HBO Patients
APACHE II \leq 25	11
APACHE II $>$ 25	4
SAPS II \leq 45	11
SAPS II $>$ 45	11
SOFA \leq 9	9
SOFA $>$ 9	2

ICU Devices for HBOT Patients

ICU Devices	# of HBO Patients
Intravenous Lines	22
Central Venous Lines	4
Ventilators	7
Vasopressors	4
Arterial Catheter	2
Chest Tube	3

HBOT Adverse Effects & Mortalities

Adverse Effects	0
HBOT Mortalities	0

CONCLUSIONS

- HBOT can be safely utilized for critically ill patients
- High APACHE II score is not a contraindication for HBOT
- There were no adverse effects or mortalities associated with critically ill patients undergoing HBOT