OPTIMIZING THE PEDIATRIC HYPERBARIC O_2 THERAPY PLAN: TANDEM THERAPY

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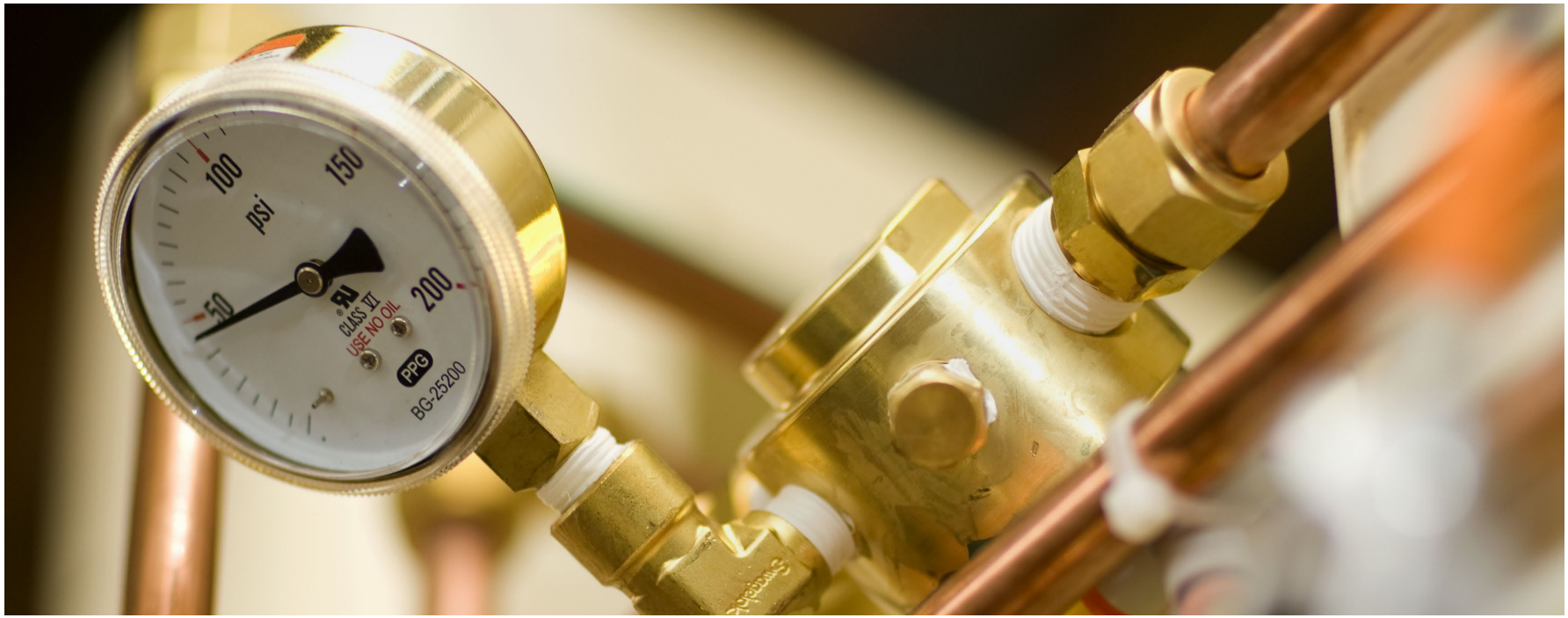

DISCLOSURE

I have no relevant financial relationships with commercial interests to disclose.

- Identify primary risks of hyperbaric oxygen therapy (HBOT) and illustrate preventative measures designed to assure the safety of the pediatric patient
- Identify three assessment findings of the pediatric patient, for whom hyperbaric oxygen therapy administered in tandem with a parent or guardian in the monoplace chamber is optimal
- Recognize critical safety considerations inherent of hyperbaric oxygen therapy administered in tandem

RISKS AND PREVENTATIVE MEASURES

Risks

1. Fire
2. Oxygen toxicity
3. Non-pulmonary barotrauma
4. Hypoglycemia
5. Confinement anxiety

Preventative Measures

1. Discovery of prohibited materials and application of appropriate mitigation orders
2. Air-break(s)
3. Patient teaching of middle ear clearance maneuvers or pressure equalization tubes
4. Point of care blood glucose testing
5. Distraction, active listening and/or anxiolytic medication

U.H.M.S. HYPERBARIC O_2 THERAPY INDICATIONS
PRESENTING CONDITIONS OF PEDIATRIC PATIENTS

- Compromised Grafts and Flaps
  - Surgical repair of cleft palate with subsequent wound dehiscence or oronasal fistula formation
  - Flap coverage of forehead following excision of melanoma lesion
  - Surgical replantation of amputated thumb
- Enhancement of Healing in Selected Problem Wounds
  - Traumatic injury to face resulting from dog bite
- Carbon Monoxide Poisoning
  - Loss of consciousness following exposure to small engine exhaust in garage with closed door

MONOPLACE
TANDEM THERAPY

- Preferred chamber for administration of hyperbaric oxygen therapy to infants and young children
- Parent, family member, or guardian accompanies patient inside chamber and serves as an occupant caregiver
  - Child is seated on the lap or between the legs of the caregiver
- Operator is present at the controls for the duration of the therapy and can communicate with the parent and child
- Hyperbaric Registered Nurse is available as a resource to the therapy at all times

- Medical urgency: emergent, urgent or chronic condition necessitating HBOT
- Outpatient or hospitalized
- Medical and/or surgical condition
  - Hemodynamic stability
  - Pain control and need for administration of analgesia
  - Artificial airway, intravascular access, drains, medical or therapy devices
  - Wounds
- Chronological age versus developmental age
- Activity level

- Medical condition, e.g., respiratory illness, obesity, diabetes, seizure disorder, mental health disorder
- Expression of anxiety regarding confinement in chamber

- Education
  - The developmental age of pediatric patients is often a barrier to learning
  - The Registered Nurse should perform a learning needs assessment of the parent or guardian and develop a teaching plan that reflects how they learn best
- Identification of primary caregiver to receive therapy in tandem with child
- Identification of a secondary caregiver should the primary caregiver demonstrate intolerance of the hyperbaric environment
- Access pediatric nursing or respiratory therapy resources as appropriate
- Informed consent

TANDEM THERAPY
ADVANTAGES

- Child's familiarity with occupant caregiver, e.g., mother, father, grandparent
- Ability to soothe and comfort
- Facilitate air break by holding non-rebreather mask to the face of child
- Distraction
- Redirection, i.e., prevent child from pulling at intravascular access, drainage devices, artificial airway

TANDEM THERAPY
DISADVANTAGES

- No immediate access to address needs of patient and/or occupant caregiver
- Care plan dependence on parent or guardian's ability to attend therapy
- Care plan dependence on parent or guardian's tolerance of hyperbaric environment

GROUNDING

- Observe safe and proper grounding procedure of the occupant caregiver

  As long as the child remains in direct contact with the occupant caregiver during administration of the therapy, he or she will remain grounded too

  Remind the occupant caregiver to be attentive to the child's curiosity to prevent pulling of the grounding cable that may result in its disconnection from the wrist strap

MULTIPLACE

- Multiplace presents opportunity for administration of HBOT when the care plan does not support the monoplace
- Hood set fitting is important to minimize leak of oxygen into the treatment lock
- Inside Attendant must be able to address the needs of all patients in the treatment lock
- Consider parent or guardian attendance of the therapy to ensure best outcome for the patient

A favorable outcome of pediatric hyperbaric oxygen therapy is only achieved when we assure the safety of the child through careful assessment of risk and development of a plan of care responsive to the individual needs of the patient

MOC QUESTIONS

Q1: What advantage is not afforded by the parent or guardian receiving hyperbaric oxygen therapy (HBOT) in tandem with the pediatric patient in the monoplace chamber?

a. Ability to comfort or soothe the patient
b. Reduction in risk of pressure-related injury
c. Ability to facilitate the air break
d. Both a and c

Answer: b. Reduction in risk of pressure-related injury

Q2: What assessment data may be revealing of a barrier to the parent or guardian receiving HBOT in tandem with the pediatric patient in the monoplace chamber?

a. Confinement anxiety
b. Upper respiratory illness
c. Obesity
d. All of the above

Answer: d. All of the above