OXYGEN

1.0 Classification
   • Element/gas

2.0 Mechanism of Action
   • Increases oxygen levels by increasing:
     ▪ Inspired percentage of oxygen
     ▪ Oxygen concentration in the alveoli
     ▪ Arterial oxygen levels
     ▪ Oxygen delivered to tissues

3.0 Indications
   • Hypoxia

4.0 Contraindications
   • No absolute contraindications, but should only be given with hypoxia and not to obtain a state of hyperoxia

5.0 Precautions
   • Oxygen is a vasoconstrictor; aiming to achieve an SpO2 of 100% can be detrimental in situations such as ischemic chest pain or ROSC
   • Some patients with COPD are at risk of being CO2 retainers, monitor closely if providing these patient with supplemental oxygen

6.0 Route
   • May be given passively or actively with various devices, including:
     ▪ Nasal cannula
     ▪ Nebulizer
     ▪ Non-rebreather
     ▪ Bag-valve-mask
     ▪ Venturi (patient may have their own)
     ▪ CPAP

7.0 Dosage
   • Appropriate delivery device and flow rate should be chosen to obtain an SpO2 based on the patient’s condition:
     ▪ Ischemic chest pain: 94-99%
     ▪ ROSC: 94-99%
     ▪ Sepsis: 100%
     ▪ Stroke: > 92%
     ▪ Respiratory distress: > 92%
     ▪ Patient with COPD: 88-92%

8.0 Supplied
• Oxygen tanks of 3 sizes:
  ▪ M = 3000 L volume (tank factor 1.56)
  ▪ E = 660 L volume (tank factor 0.28)
  ▪ D = 400 L volume (tank factor 0.16)
• Note: Calculation for time remaining in tank equals = (Pressure on gauge – 200 psi) x tank factor
  Flow rate (lpm)

**CPAP pressures based on oxygen flow**

<table>
<thead>
<tr>
<th><strong>O₂ Flow (lpm)</strong></th>
<th><strong>Flow-Safe CPAP/PEEP (cmH₂O)</strong></th>
<th><strong>Flow-Safe II CPAP/PEEP (cmH₂O)</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>&lt; 1</td>
<td>2-3</td>
</tr>
<tr>
<td>8-9</td>
<td>&lt; 1</td>
<td>5</td>
</tr>
<tr>
<td>10-12</td>
<td>1.5-2</td>
<td>7.5</td>
</tr>
<tr>
<td>13-14</td>
<td>2-3</td>
<td>10</td>
</tr>
<tr>
<td>15</td>
<td>3-4</td>
<td>13.0 (Max)</td>
</tr>
<tr>
<td>25</td>
<td>8.5-10</td>
<td>13.0 (Max)</td>
</tr>
</tbody>
</table>

9.0 May Be Given By
  • PCP/ICP/ACP/CCP

10.0 Adverse effects
  • Light-headedness
  • Respiratory failure in a small number of patients who are CO₂ retainers

11.0 Special notes
  • If patient's are within their targeted oxygen saturation, it is not necessary to administer supplemental oxygen

12.0 References
  • All Clinical Practice Guidelines outline the role of supplemental oxygen when managing the various emergencies

*Electronically Signed
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