Hyperbaric oxygenation treatment in Clinical Medicine

➢ Hyperbaric treatment: Combined action of concentrated oxygen under pressure
  o Oxygen (O₂) given as active substance
    • When breathing O₂ at high concentrations (~100%), the O₂ partial pressure increases\(^1\)
    • Inside a chamber (the environment is subjected to ≥40% over atmospheric pressure)\(^2\), O₂ dissolves in fluids.

➢ Mechanism of action: HYPEROXIA. Increases dissolved oxygen in blood and availability in tissues: at least 800% more systemic O₂.

➢ Effects and benefits of hyperoxia in medical practice

- Vasoconstriction\(^{1,4,5}\)
- Stimulation of immune response\(^{1,6,7}\)
- Regulation of the oxidative state\(^8\)
- Improves microcirculation, redistribution of blood flow\(^9,10\)
- Anti-inflammation and reduction of edema\(^{1,6,7,4}\)

➢ Most Important Biochemical Markers
  o Inflammation and acute phase\(^{1,12}\) (PCR, blood count)
  o Immune system\(^{13}\) (Leukocytes, immunoglobulins, interleukins)
  o Oxidative state\(^{12,14,8}\) (SOD, catalase, vitamin C, glutathione peroxidase)

➢ Adjuvant treatment to reduce inflammation, relieve pain, reduce complications, improve energy performance and life quality\(^{15,7,10,5,16,8}\)

<table>
<thead>
<tr>
<th>Disease</th>
<th>Number of cases</th>
<th>Therapeutic effectiveness</th>
<th>Indicated sessions (average)</th>
<th>Indicated frequency (average)</th>
<th>Sessions compliance</th>
<th>Patient satisfaction</th>
<th>Sessions length (average)</th>
<th>Patient evolution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tinnitus</td>
<td>104</td>
<td>90%</td>
<td>21</td>
<td>3</td>
<td>89%</td>
<td>82%</td>
<td>64 min.</td>
<td>92%</td>
</tr>
<tr>
<td>Sleep apnea</td>
<td>27</td>
<td>90%</td>
<td>25</td>
<td>2</td>
<td>93%</td>
<td>78%</td>
<td>58 min.</td>
<td>91%</td>
</tr>
<tr>
<td>Crohn disease</td>
<td>27</td>
<td>92%</td>
<td>34</td>
<td>2</td>
<td>93%</td>
<td>96%</td>
<td>62 min.</td>
<td>90%</td>
</tr>
<tr>
<td>COPD</td>
<td>2</td>
<td>100%</td>
<td>20</td>
<td>2</td>
<td>100%</td>
<td>100%</td>
<td>65 min.</td>
<td>100%</td>
</tr>
<tr>
<td>Fibromyalgia</td>
<td>69</td>
<td>86%</td>
<td>31</td>
<td>4</td>
<td>90%</td>
<td>71%</td>
<td>64 min.</td>
<td>86%</td>
</tr>
<tr>
<td>Migraine</td>
<td>44</td>
<td>96%</td>
<td>24</td>
<td>2</td>
<td>95%</td>
<td>93%</td>
<td>66 min.</td>
<td>96%</td>
</tr>
<tr>
<td>Chronic fatigue syndrome</td>
<td>9</td>
<td>85%</td>
<td>25</td>
<td>3</td>
<td>67%</td>
<td>100%</td>
<td>64 min.</td>
<td>97%</td>
</tr>
</tbody>
</table>

➢ Indications for treatment on the Revitalair chamber
  o Treatment pressure: 1.4ATA
  o %O₂ administered: ~95%
  o Duration of the session: 60’ to 90’ (acute)
  o Number of sessions: blocks of 10 sessions, according to medical criteria
  o Sessions frequency: 2 to 5 times per week, according to medical indication

➢ Non-invasive and safe therapy: no adverse effects\(^{17,18}\)
For more information download the complete document in the following link:


For advice regarding the practice of hyperbaric therapy in your area of interest, contact: clinical.research@biobarica.com

REFERENCES

2. UHMS. HBO2 Indications, 13th Ed. 2014.
11. Granowitz E, Skulsky E, Benson R, Wright J. Exposure to increased pressure or hyperbaric oxygen suppresses interferon-(gamma) secretion in whole blood cultures of healthy humans. Undersea & hyperbaric medicine 2002;29:216.