EUBS & ECHM position statement

on the use of Hyperbaric Oxygen Therapy (HBOT)

for the treatment of COVID-19 patients

This Position Statement complements a previous Statement ("*ECHM position on Hyperbaric Oxygen Therapy (HBOT) in multiplace hyperbaric chambers during coronavirus disease (COVID-19) outbreak*", 16th March 2020), which remains fully valid. Concerns regarding transmission and infection risk in hyperbaric chambers were also addressed in this first Position Statement. The present Position Statement addresses the use of HBOT as a treatment modality for COVID-19 patients.

The possibility that HBOT may have a beneficial effect in the treatment of certain patients with COVID-19 cannot be excluded and recent, although very limited case study reporting, suggest a possible effect in ameliorating patient symptoms. The mode of action of HBOT could be due to mechanisms such as e.g. alleviating the oxygen debt caused by the ventilation/perfusion mismatch, reducing the inflammatory reactions and/or the effect of SARS-CoV2 on the oxygen-carrying capacities of hemoglobin, or other mechanisms which are still insufficiently documented in this setting and thus remain speculative in many aspects.

The current level of anecdotal reporting does not allow for recommendations nor the issuing of guidelines with respect to the use of HBOT in the specific treatment of covid-19.

Multiple clinical research projects using HBOT as adjuvant therapy in COVID-19 are currently being conducted worldwide. EUBS and ECHM welcome and encourage the use of HBOT as part of preplanned and ethically approved randomized trials. It should be emphasised that in order to achieve clinically relevant conclusions, any study on HBOT in COVID-19 should at least:

1. be approved by an Institutional (Ethics) Review Board
2. have a randomized study protocol, with predefined statistical analysis and patient recruitment plan, with a power calculation on the primary patient outcome, and a control group

3. give a “hyperbaric” oxygen dose, with reporting of pressure and time of each session, as well as the total number of sessions
4. monitor objective parameters for evaluating the severity of the disease and the clinical and biological status of the patient
5. and record any adverse effects to the patient or the personnel

Using HBOT only for adjunctive oxygenation, instead of providing optimal oxygen therapy and ventilatory support in normobaric conditions, is currently a non-accepted approach.

There are published standards and recommendations for giving ventilatory support to COVID-19 patients prepared by European and worldwide organisations and societies for anaesthesiology and intensive care. They should be followed as they represent the best knowledge in the field.
For the time being, in accordance with the ECHM Consensus Conference 2016 recommendations for conditions in which HBOT is considered not to be indicated [1], we propose that HBOT is used for COVID-19 patients outside a research setting ONLY after careful consideration of the benefit/risk balance for each specific patient and the absence of possible alternative treatments, recognising that HBOT may be harmful by withholding/interrupting essential supportive treatments or exposing staff and other patients to a risk of SARS-CoV2 infection.
This would be a case-by-case decision based on specific local circumstances and is NOT in any way endorsed by EUBS nor ECHM.

In case of any doubts, please contact the ECHM (www.ECHM.org) or EUBS (www.eubs.org).
Recommendations issued on **30th April 2020**.

On behalf of the ECHM:

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Jacek Kot	Alessandro Marroni	Wilhelm Welslau
President	Vice-President	Secretary General

On behalf of the EUBS:

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Ole Hyldegaard	Jean-Eric Blatteau	Peter Germonpre
President	Vice-President	Honorary Secretary

[1] *Mathieu D, Marroni A, Kot J. Tenth European Consensus Conference on Hyperbaric Medicine: recommendations for accepted and non-accepted clinical indications and practice of hyperbaric oxygen treatment. Diving Hyperb Med. 2017 Mar;47(1):24-32. doi: 10.28920/dhm47.1.24-32. Erratum in: Diving Hyperb Med. 2017 Jun;47(2):131-132. PMID: 28357821; PMCID: PMC6147240.*