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Title Hyperbaric Oxygen Therapy (HBOT) - An Update

Agency HTA Malaysia, Health Technology Assessment Section, Medical Development Division, Ministry of Health Malaysia
Level 4, Block E1, Parcel E, Presint 1,
Federal Government Administrative Center, 62590 Putrajaya, Malaysia
Tel: +603 88831229, Fax: +603 88831230; htamalaysia@moh.gov.my, www.moh.gov.my

Reference Technology Review Report - 017/2016, online:
http://www.moh.gov.my/index.php/database_stores/store_view_page/30/294

Aim

To assess the efficacy/ effectiveness, safety, cost-effectiveness and organizational issue of HBOT in treatments of various medical conditions as in Appendix 1.

Conclusions and results

Effectiveness

There was limited evidence retrieved to support the use of HBOT for following indications: cerebral oedema, migraine, and heart disease. There was insufficient evidence retrieved to support the use of HBOT for following indications: autism, dementia, Bell's palsy, multiple sclerosis, sports injury, stroke, sickle cell disease, depression, acute central retinal artery insufficiency, head injury, fracture healing, and bone grafting. There was no evidence retrieved to support the use of HBOT for following indications: AIDS/HIV, Alzheimer's disease, asthma, meningitis, Parkinson's disease, spinal cord injury, lepromatous leprosy, Pseudomonas colitis, hepatitis, aesthetic, ischaemic- reperfusion injury, and intra-abdominal abscess.

Safety

Evidence suggest that adverse events such as claustrophobia, ear pain and barotrauma of middle ear were higher in the HBOT group compared to control group.

Cost-effectiveness

There was no retrievable evidence on the cost-effectiveness of HBOT for the indications as in Appendix 1. However, there was a cost analysis in one study which reported an estimated saving of US$ 116.49 per saved ICU hours in preconditioning coronary artery disease (CAD) patients with HBOT prior to first time elective on-pump CPB coronary artery bypass graft surgery (CABG).

The fee per HBOT session range between [redacted]

Organizational

Evidence suggested that HBOT reduced the length of hospital and ICU stay was inconclusive. Hyperbaric personnel need to be trained.

Recommendations (if any)

Based on the above review, HBOT is not recommended for routine use for cerebral oedema, migraine, heart disease, autism, dementia, Bell's palsy, multiple sclerosis, sports injury, stroke, sickle cell disease, depression, acute central retinal artery insufficiency, fracture healing and bone grafting, head Injury, AIDS/HIV, Alzheimer's disease, asthma, meningitis, Parkinson's disease, spinal cord injury, lepromatous leprosy, Pseudomonas colitis, hepatitis, aesthetic, ischaemic- reperfusion injury and intra-abdominal abscess.

Methods

Electronic databases were searched through the Ovid interface: Epub Ahead of Print, In-Process & Other Non-Indexed Citations, Ovid MEDLINE® Daily and Ovid MEDLINE® 1946 to Present, EBM Reviews - Cochrane Central Register of Controlled Trials - August 2016, EBM Reviews - Cochrane Database of Systematic Reviews - 2005 to September 2016, EBM Reviews - Health Technology Assessment – 3rd Quarter 2016, EBM Reviews – NHS Economic Evaluation Database 2nd Quarter 2016. Searches were also run in PubMed database and U.S. Food and Drug Administration (USFDA) website. Google and Google Scholar was also used to search for additional web-based materials and information. Search were limited to articles from 2006 until 2016. Additional articles were identified from reviewing the references of retrieved articles. Last search was conducted on 20th September 2016.

Further research/reviews required

No

Written by

Ros Aziah Mohd Rashid, MaHTAS, Malaysia

Appendix 1: List of indications

Autism	Meningitis
Dementia	Parkinson's disease
Cerebral oedema	Spinal cord disease
Migraine	Depression
Bell's Palsy	Lepromatous leprosy
Multiple sclerosis	Pseudomonas colitis
Sports injury	Acute central retinal artery insufficiency
Heart disease	Hepatitis
Stroke	Fracture healing and bone grafting
Sickle cell disease	Head injury
AIDS/HIV	Aesthetic
Alzheimer's disease	Ischaemic-reperfusion injury
Asthma	Intra-abdominal abscess