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Hyperbaric oxygen therapy for idiopathic osteonecrosis of the femoral head in adults¹

Executive Summary

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Institute for Quality and Efficiency in Health Care
Dillenburger Str. 27
51105 Cologne
Germany

Tel: ++49 (0) 221/35685-0

Fax: ++49 (0) 221/35685-1

E-mail: berichte@iqwig.de

Homepage: www.iqwig.de

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Background

The Institute for Quality and Efficiency in Health Care (Institut für Qualität und Wirtschaftlichkeit im Gesundheitswesen [IQWiG]) was commissioned by the Federal Joint Committee to evaluate the benefits and harms of hyperbaric oxygen therapy for idiopathic osteonecrosis of the femoral head in adults.

Research questions

The aims of this evaluation were to assess, in adults with idiopathic osteonecrosis of the femoral head,

- hyperbaric oxygen therapy as an add-on to conventional therapy compared with conventional therapy alone;
- various types of hyperbaric oxygen therapy as an add-on to conventional therapy compared with each other.

The focus of this evaluation was on patient-relevant therapy goals.

Methods

This evaluation was conducted on the basis of a systematic literature search for studies investigating the research questions outlined above. Randomised controlled trials (RCTs) and non-randomised intervention studies including concurrent controls were considered. For this purpose, a comprehensive search was conducted in bibliographic databases (MEDLINE, EMBASE, CENTRAL, BIOSIS, CINAHL, DORCTIHM). In addition, reference lists of relevant secondary publications (systematic reviews, HTA reports, meta-analyses) were screened. Moreover, scientific societies and drug manufacturers were asked to provide information on relevant published and unpublished studies. IQWiG's preliminary evaluation, the preliminary report, was published on the Internet (www.iqwig.de) and interested persons and parties were invited to submit written comments (written hearing). After the hearing procedures, the final report was published.

Results

Only one potentially relevant non-randomised study was found investigating hyperbaric oxygen therapy for idiopathic osteonecrosis of the femoral head in adults. This study included a total of 44 patients. As the study had to be excluded from the evaluation because of major deficiencies in its methods and content, no results are available.

Conclusion

Worldwide, data on only about 100 to 200 patients have been published concerning the therapeutic effects of hyperbaric oxygen therapy for idiopathic osteonecrosis of the femoral head in adults. Due to the complete lack of relevant studies, a widespread use of this therapy

outside the setting of clinical trials does not seem justified. There is no evidence of a benefit of this treatment.

Key words: hyperbaric oxygen therapy, hyperbaric oxygenation, compression chamber, osteonecrosis of the femoral head, arthrosis of the hip joint, systematic review