

Critical appraisal

Significant improvement in hearing for people with idiopathic sudden sensorineural hearing loss with the addition of hyperbaric oxygen

Clinical bottom line

- 1 Significant improvement in hearing in 4 of 5 frequencies
- 2 Some evidence that HBOT is more effective with mild initial loss and [in] people under 50 years.

Citation

Topuz E, Yigit O, Cinar U, Seven H. Should hyperbaric oxygen be added to treatment in idiopathic sudden sensorineural hearing loss? *Eur Arch Otorhinolaryngol.* 2004; 261: 393-6.

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Three-part clinical question

Does the addition of a hyperbaric oxygen regimen to a standard medical treatment improve hearing in people with idiopathic sudden sensorineural hearing loss (ISSHL)?

Search terms

Hyperbaric oxygenation, idiopathic sudden sensorineural hearing loss, ISSHL, hearing loss

The study

Non-blinded randomised controlled trial with intention to treat.

The study patients

Sudden hearing loss of > 30 dB in at least 3 continuous pure tone frequencies. Less than 2 weeks since onset of symptoms. All were admitted to hospital.

Control group

(N = 21; 21 analysed) Prednisone 1 mg.kg⁻¹.day⁻¹ for two weeks, rheomacrodex 500 mL.day⁻¹ for five days, diazepam 5 mg twice a day (seven day duration), pentoxiphyllin 200 mg iv twice a day (seven day duration).

Experimental group

(N = 30; 30 analysed) As above plus hyperbaric oxygen 253 kPa (2.5 ATA) for 90 minutes twice a day over five days then 2.5 ATA daily for 15 days.

The evidence

See Table 1.

Comments

- No 'functional' improvement assessment was performed.
- Intervals given in Table 1 are not defined (probably standard deviations).
- Results given for "34 ISSHL out of 30 patients" in the HBOT group; meaning not clear.
- Only age and sex were considered as possible confounders, no other patient data.
- No indication of loss to recruitment or attempt to recruit consecutive patients.

Conclusions

Difficult to assess numbers in this study because there was a problem in the interpretation of numbers of treatments per person, or per hearing loss event in the same person.

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Appraised Thursday 10 March 2005

Key words

Hyperbaric oxygen, hearing, ENT, research, reprinted from

Table 1

Major outcomes in randomised study of hyperbaric oxygen for idiopathic sudden sensorineural hearing loss (means +/- ?standard deviations shown)

Non-event outcomes (time to outcome 4 weeks)	Control group	HBOT group	P value
Mean hearing gain all patients (dB)	17.4dB	33.3dB	?
Mean hearing gain by initial hearing levels (dB)			
≤ 60	22.33 ± -9.311	22.53 ± -12.68	0.758
61-80	6.18 ± -9.00	35.45 ± -22.09	0.014
≥ 80	13.00 ± -6.58	50.70 ± -21.54	0.005