

Is the treatment of hearing loss in rheumatoid arthritis effective?

Dear Editor,

Affection of hearing, typically bilateral, symmetric, slowly progressive, has been documented in patients with rheumatoid arthritis (RA). Previous research resulted in controversial data on the incidence and treatment of hearing loss (HL) in RA^{1,2}.

We hypothesized that the treatment of HL in RA using corticosteroids and methotrexate is possible and effective. Oral prednisone (60 mg/day, for 30 days) was administered to 38 patients with RA and HL, while 11 additional RA patients received intratympanic injections of methylprednisolone (0.5 ml of 40 mg/ml, at weekly intervals). Non responders to steroids were treated by methotrexate (initial dose 7.5 mg/week, increasing to 25 mg/week over 8 weeks).

Oral steroid therapy resulted in hearing improvement in 60.5 %, while intratympanic application of steroids resulted in better hearing in 68.6% of the patients, but only for frequencies over 2000 Hz. Improvement was achieved for mild to moderate initial hearing loss. There were no significant changes of obtained improvement, after five months. The results of methotrexate treatment were not satisfactory, with improvement in only 11.1% of the patients. Subjective estimation of hearing improvement was lower than found on pure tone audiometry (42.9% vs 61.2%).

The recovery of HL in persons with RA has not been sufficiently studied. Steroid treatment for autoimmune ear diseases produces significantly better results in cases without systemic diseases. However important side effects prevent long term treatment in chronic diseases³.

Intratympanic injections of corticosteroids is reported to achieve higher concentration for the longest duration in the perilymph, compared to oral and intravenous administration⁴.

Some studies concluded that methotrexate in low doses improved hearing and balance in autoimmune inner ear disease (AIED). However, a randomized, double-blind, placebo controlled trial reported that methotrexate was not effective in maintaining the hearing improvement achieved with prednisone therapy in patients with AIED⁵.

Since we cannot predict hearing improvement after steroid therapy, and they cannot be applied for a prolonged period, we recommend oral steroid administration for one month, for patients with RA who develop HL. The responders can be safely treated with intratympanic steroids, with or without insertion of ventilation tubes. Intratympanic steroids have been successfully used for sudden HL, but no study reported on their application in RA patients.

Further studies are needed to define the improvement of hearing in RA using different treatment modalities. Optimization of dosage and protocol of intratympanic steroid injections is also mandatory.

We conclude that RA patients with HL that respond well to initial oral steroid therapy can be successfully and safely treated by intratympanic application of steroids for longer period of time.

Conflict of interest

None.

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