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RE: Study of sudden deafness comparing *Ginkgo biloba* and pentoxifylline


Sudden deafness is a type of acute hearing loss that is usually reversible. It is the most common acute functional disorder affecting the inner ear, and it appears to involve a sensorineural auditory defect. The potential causes of sudden deafness include viral and bacterial infections, autoimmune diseases, and circulatory disorders affecting the inner ear. In most cases, only one ear is affected. Patients with sudden deafness may experience pressure and tinnitus (ringing) in the ear, in addition to hearing loss. About 10 to 20 cases occur per 100,000 people each year.

In the United States, sudden deafness is typically treated with oral cortisone on an outpatient basis. In Germany, sudden deafness is usually treated on an inpatient basis with vasoactive substances such as pentoxifylline; this treatment method is known as rheological infusion therapy or hemodilution therapy. The goal of this approach is to improve blood circulation in the inner ear. In many cases of sudden deafness, spontaneous remission occurs. Two previous studies reported spontaneous recovery rates of 65% and 68%, respectively.

This article describes a randomized, double-blind study that was done to compare the standardized ginkgo (*Ginkgo biloba*) extract EGB 761 (Dr. Willmar Schwabe Pharmaceuticals, Karlsruhe, Germany) with pentoxifylline for treating sudden deafness. The study included 72 patients with sudden hearing loss of 20 dB or more (average of 30 dB over the frequency range 250–6000 Hz). All patients sought treatment within 4 days
after their symptoms began, and there was no apparent cause of the hearing loss in any of the cases.

Each day for 10 days, patients received either EGb 761 (200 mg/day; 37 patients) or pentoxifylline (300 mg/day; 35 patients). Both treatments were given by intravenous infusion. After 5 and 10 days, patients were evaluated with pure-tone audiograms and were interviewed about their symptoms.

The results showed that the two treatment groups were equivalent in terms of the initial severity of hearing loss (32 and 34.5 dB in the ginkgo and pentoxifylline groups, respectively). The degree of improvement during treatment was also similar for the two groups. After 5 days of treatment, the mean improvement in hearing loss was 10.4 and 11.7 dB in the EGb 761 and pentoxifylline groups, respectively. After 10 days (the end of treatment), the mean improvement was 13.4 and 12.4 dB in the EGb 761 and pentoxifylline groups, respectively; these values were not significantly different.

Tinnitus was reported by 41% and 39% of patients in the EGb 761 and pentoxifylline groups, respectively, at the beginning of treatment. By the end of treatment, tinnitus persisted in 27% and 22% of patients in the EGb 761 and pentoxifylline groups, respectively. In addition, the patients' ability to understand speech was assessed. "No differences were found between the treatment groups with regard to the criteria for a return to normal speech discrimination," the authors reported.

The results of treatment were also evaluated by the patients using a 5-point rating scale with values from 1 (very good) to 5 (unsatisfactory). Patients in the EGb 761 group gave mean ratings of 2.2 for hearing and 2.4 for tinnitus. Patients in the pentoxifylline group gave mean ratings of 2.6 for hearing and 2.9 for tinnitus. The data showed a trend of greater benefit in the EGb 761 group, the authors note.

The two treatments were found to be equally safe. One patient in each group had an apparent allergic reaction to the medication carrier solution. The only other symptoms reported by patients were nonspecific (tiredness, drowsiness, and itching) and were not clearly related to the study treatment. Patients in both groups and their physicians rated the patient's tolerance of the treatment as very good.

Finally, the article reviews and compares the different therapeutic approaches for sudden deafness. The standard approach in Germany (rheological infusion therapy or hemodilution therapy) has been questioned and rejected in France and the United States, where cortisone therapy is considered the only effective approach. However, controlled trials found only limited evidence that cortisone was effective.

In conclusion, the authors state, "the present comparison of the success of treatment with either Ginkgo biloba extract or pentoxifylline, which is the substance selected by the majority of authors as a reference substance…showed no statistically significant difference with regard to efficacy and tolerance of the two preparations." The authors also discussed the possibility that the patients improved spontaneously and neither
treatment had any actual benefit. This raised the question of whether patients with sudden deafness should receive any treatment at all. However, withholding treatment would not be feasible in Germany, because sudden deafness is considered an otological (affecting the ear) emergency. When choosing a treatment method for sudden deafness, physicians should remember that some patients may prefer ginkgo because they view it as a natural alternative to medications.

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