EFFECT OF INTRATYMMPANIC INJECTION OF LATANOPROST AND LATANOPROST SALT ON SYMPTOMS IN MENIERE’S DISEASE. A REVIEW OF THE RESULTS OF TWO PHASE-II, DOUBLE-BLIND, PLACEBO-CONTROLLED CLINICAL TRIALS

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Introduction: Latanoprost is a selective FP prostanoid receptor agonist used for glaucoma treatment. It enhances aqueous humor drainage from the eye thereby reducing intraocular pressure. We have demonstrated the inner ear expression of FP prostanoid receptors (1) and that intratympanic injection of latanoprost improves speech discrimination and reduces vertigo in a clinical pilot study (2). The results of two clinical trials with latanoprost ester/salt are reviewed here.

Materials and Methods: 50 patients with unilateral, mainly end stage, Menière’s disease were included in 2 clinical trials. Four patients were excluded due to incorrect inclusion or adverse events. Both studies adopted a double-blind, crossover design with a washout period of 1-3 months between treatment periods. Latanoprost (ester) 0.005% was administered by intratympanic injection once daily on days 1, 2 and 3 to 17 patients and latanoprost salt 0.005%, 0.015%, 0.045% or 0.15% to 33 patients under a dose-escalation protocol. Tone audiogram, speech discrimination, tinnitus loudness were recorded at audiologic departments, and vertigo investigated using visual analogue scale (VAS). VAS was also used for studying the effect on speech discrimination and tinnitus. Audiometric measurements were performed before injection and at days 5, 15 and 29 following the first administration.

Results: Both latanoprost ester (0.005%) and salt (0.045% and 0.15%) increased speech discrimination and reduced tinnitus loudness statistically significantly (p<0.05). The 0.005% and 0.015% doses of latanoprost salt had no effect on any of the variables. A clear-cut dose-response relationship was obtained in tinnitus loudness with latanoprost salt and a tendency towards dose-response obtained in speech discrimination. Based on VAS clinically significant effects were obtained in one or several of the study variables in 40% of the patients treated with latanoprost ester and the two highest doses of latanoprost salt (p<0.05) and a moderate or marked effect was obtained in 50% of the patients. In about 70% of the patients a slight, moderate or marked effect were registered in VAS in one or several variables. The corresponding figures for placebo were 13, 33 and 50%.

Conclusions: Intratympanic injection of latanoprost ester/salt, alleviated Meniere’s disease symptoms. It is hypothesized that the effect is based on a reduction of the endolymphatic hydrops.

References:


Conflict of interest: Both authors own shares in Synphora AB, Sweden developing latanoprost as a treatment for Meniere’s disease.