

Severe dizziness treated with steroid injections into the eardrum

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Injections of steroid into the ear are an effective treatment for a common form of severe dizziness, suggests a new study.

In a new trial, scientists from Imperial College London compared current treatments for Meniere's disease, which causes debilitating dizzy spells.

They found that injections of the steroid methylprednisolone, through the ear drum, are as effective as the current 'gold standard' treatment. The current option is an antibiotic called [gentamicin](#), and is also injected into the ear, where it destroys inner ear cells. The treatment prevents dizziness attacks, but can leave [patients](#) with permanent hearing damage.

The new trial, published in the *Lancet*, found that the [steroid injections](#) are as effective as gentamicin, but without the side effects. Patients who received the steroid injections were better at hearing speech clearly, compared to those who received the gentamicin injections.

The researchers are now recommending medics offer the steroid injections to patients before trying gentamicin.

Professor Adolfo Bronstein, lead author on the paper from the Department of Medicine at Imperial, said: "Meniere's disease causes disabling attacks of dizziness that in some cases can leave people unable to work. However at the moment the only treatment we have for severe cases is a so-called 'destructive treatment' that kill cells in the inner ear.

Doctors, including ourselves, always assumed steroid injections were less effective than the current treatment, but we were surprised to see they work just as well as gentamicin, but do much less harm."

Meniere's disease affects around 30,000 people in the UK, and causes intense attacks of dizziness that last anything from a few minutes to 24 hours. During the attacks a person is usually unable to stand, and suffers from hearing loss, as well as nausea or even vomiting. The condition usually strikes people over 40, though scientists still do not know what triggers the disease. One theory is that the condition causes a build-up of salt and fluid in the inner ear.

This section of the ear, which is closest to the brain, holds equipment crucial to maintaining balance. This equipment constantly communicates with the brain, eyes and limbs to keep us on our feet.

Scientists believe the build-up of pressure can cause tiny leaks of fluid in the inner ear, which can cause the balance equipment to malfunction. The condition can also lead to [permanent hearing loss](#).

There is no cure, although the early stages of the disease can be treated with medication and exercises. Severe cases can be treated with injections of gentamicin. After being injected into the ear, the medicine travels to the inner ear where it destroys the cells responsible for balance, and stops the dizzy spells. Usually only one ear is affected, therefore patients still have a working balance mechanism in their healthy ear, and can re-train their balance with exercises.

However, gentamicin can also destroy hearing cells, and up to one in five patients can be left with permanent hearing loss.

In the latest study, researchers at Imperial gave 60 patients with severe Meniere's disease either injections of gentamicin or steroids. The

patients were on average having more than one dizziness attack a week. They were given two injections of one of the treatments, under local anaesthetic, two weeks apart. Neither the patient nor the researcher knew whether a patient received steroid or the gentamicin.

After a two year period, all patients' dizziness attacks had reduced by around 90 per cent. However the patients who received the steroid injections had better speech discrimination - the ability to hear words clearly - than those who received gentamicin.

Neither treatments were found to have any other side effects, although the injections of gentamicin often triggered a severe [dizziness](#) attack when first administered.

Professor Bronstein added that those who received steroid injections were more likely to need additional jabs to stop their dizzy spells.

"For a patient who lives in a remote location where accessing repeat injections would be difficult, then gentamicin would be an option. However, if a patient is able to receive repeat injections, and is concerned about future [hearing loss](#), the steroid injections may be a better choice."

Natasha Harrington-Benton, Director of the Meniere's Society, who funded the research said: "We are pleased to have been able to support this research and are encouraged by the outcome. The trial has led to a better understanding of gentamicin and steroid treatments for Meniere's disease; giving hope to those affected by this complex condition."

"Intratympanic methylprednisolone versus gentamicin in patients with unilateral Ménière's disease: a randomised, double-blind, comparative effectiveness trial" by M.Patel et al is published in *The Lancet*.

Provided by Imperial College London

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