Competing treatments comparable for sudden hearing loss

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A relatively new treatment for sudden hearing loss that involves injecting steroids into the middle ear appears to work just as well as the current standard of oral steroids, a study by researchers at Johns Hopkins and other institutions suggests. The findings, published in the May 25 *Journal of the American Medical Association*, could lead to more options for the 1 in 20,000 people who suffer from this often baffling and disabling condition each year.

As the name implies, sudden hearing loss (SHL) is a dramatic loss of hearing that occurs over a short period, usually less than 72 hours. Often, physicians never figure out the cause of the problem. Though about a third of patients regain some hearing on their own, others suffer a permanent loss if untreated. Patients are more likely to regain their hearing if they're treated within two weeks of the start of symptoms.

The usual treatment is a course of oral steroids, which are thought to reduce inflammation that might be responsible for the hearing loss. Some doctors have recently begun treating SHL patients instead with a series of steroid injections delivered through the eardrum and into the middle ear. In theory, these injections could deliver a heavier dose of steroids directly to the source of the problem, explains John Carey, M.D., a professor in the Department of Otolaryngology–Head and Neck Surgery at the Johns Hopkins University School of Medicine. However, he adds, the relative rarity of this condition and potential for it to improve without treatment left physicians puzzled over how these two treatments compare.

To investigate, he and his colleagues conducted a trial of the two different treatments at 16 academic medical centers across the country. The researchers randomly assigned 250 patients who came into these centers for SHL treatment to receive either a two-week course of oral steroids or four steroid injections spaced out over two weeks. Before treatment, these patients each had a 50-decibel or greater hearing loss in one of their ears.

Two months after treatment, the researchers tested the study subjects' hearing again. Results showed that patients treated with oral steroids had an average 30.7-decibel improvement in the affected ear, compared to a 28.7-decibel improvement in those treated with injections. The treatments were comparable for most patients, Carey explains, with the exception of patients with very severe hearing loss (greater than 90 decibels), who tended to have better results with oral steroids.

He adds that both treatments have a variety of pros and cons. For example, oral steroids come with a host of side effects, including insomnia, weight gain and an increase in blood sugar, but have a low cost and can be taken conveniently at home. Steroid injections can avoid these side effects, but are expensive and potentially painful, and need to be performed in a doctor's office.

"This study suggests that for most SHL patients, oral and injected steroids appear to be equally effective," Carey says. "This could lead to better options for patients that match their personal preferences."

He and his colleagues plan to eventually study whether the treatments might be even more effective if they're give concurrently or sequentially.

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