

# Evidence lacking to guide treatment for sudden hearing loss

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Although steroids are the most widely used treatment for sudden hearing loss, little scientific evidence supports their use or that of any other therapies for this condition, according to a systematic review and meta-analysis both published in the June issue of Archives of Otolaryngology–Head & Neck Surgery, one of the JAMA/Archives journals.

Sudden sensorineural hearing loss is acute hearing impairment involving loss of at least 30 decibels of hearing over at least three test frequencies occurring within three days, according to background information in the article. The condition affects about five to 20 of every 100,000 individuals yearly. Treatment varies widely and includes antiviral medications, vitamins, minerals, herbs, hyperbaric oxygen and agents that dilute the blood. “In addition, some otolaryngologists choose not to treat sudden sensorineural hearing loss at all, citing spontaneous recovery rates of 32 percent to 70 percent,” the authors write. “However, the most common approach to treatment of sudden sensorineural hearing loss in North America is with systemic steroids, which has been deemed by some authors to be the gold standard of treatment.”

Anne Elizabeth Conlin, B.A. & Sc., M.D., of the University of Ottawa, Ontario, and Lorne S. Parnes, M.D., F.R.C.S.C., of the University of Western Ontario, London, Canada, searched for all randomized clinical trials evaluating treatments for sudden hearing loss published between 1966 and 2006.

For the systematic review, 21 trials were identified and evaluated, all of which used measures from hearing tests to define treatment outcomes. “Only two studies used identical criteria to define sudden sensorineural hearing loss,” the authors write. “The method of randomization was described in two studies. Validity scores ranged from two to eight (of nine). Positive results were reported favoring systemic steroids, intratympanic [inside the inner ear] steroids, batroxobin, magnesium, vitamin E and hyperbaric oxygen, although there were serious limitations in each study with a positive finding.”

This includes the article cited as the landmark study for the use of steroids, which was not described as a randomized trial and therefore may have produced exaggerated treatment effects, the authors note. The authors suggest that this study also used inconsistent doses of steroids and did not measure outcomes at the same time for all participants. “The study therefore does not inform the otolaryngologist of what dose of steroids to use, nor at what time after treatment to expect improvement,” the authors write.

“To our knowledge, no valid randomized controlled trial exists to determine effective treatment of sudden sensorineural hearing loss,” they conclude. “Systemic steroids cannot be considered the gold standard of treatment of sudden sensorineural hearing loss, given the severe limitations of the landmark study supporting their use.”

For the meta-analysis, data from the same trials were combined when they covered the same therapies. Five trials were eligible for the analysis. “Pooling of data from two randomized clinical trials that compared steroids with placebo showed no difference between treatment groups,” the authors write. “No difference existed between patients treated with antiviral plus steroid therapy vs. placebo plus steroid therapy. Finally, there was no difference between subjects treated with steroids vs. subjects treated with any other active treatment.”

Treating sudden hearing loss is difficult because its cause is often unknown, the authors note. However, it is still important to identify the therapy that most benefits the patient. “At present, sudden sensorineural hearing loss remains a medical emergency without a scientific understanding of its cause or a rational approach to its treatment,” they conclude.

Source: JAMA and Archives Journals

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