Defense Health Agency (DHA) Clinical Communities Speaker Series

CCSS Jun 2021: Exploring Evidence-Based Practice in Modern Medicine Primary Care

S06: Practice Considerations When Triaging Patients With Hearing and Balance Symptoms

Resource List

The American Speech Language Hearing Association (ASHA) published In My Patients' Shoes (2016) which is an account from an audiologist/speech language pathologist who experienced sudden sensorineural hearing loss (SSNHL). Heather Knutson recounts her personal and medical experience when she had SSNHL, while she was working with an otolaryngologist. This article provides an interesting perspective on how this clinician dealt with and navigated treatment that she previously provided to patients.

The International consensus (ICON) on treatment of sudden sensorineural hearing loss (2018) reviews the discussion by experts convened at the 2017 Ear Nose Throat (ENT) World Congress in Paris France. The difficulty, as described by the experts in the panel arises from the wide variety of presentations of SSNHL. This includes the initial hearing deficits and the amount of hearing recovery. The use of systemic steroids is the most widespread primary therapy, however the evidence of efficacy is still lacking. This therapeutic approach is used in an attempt to reduce supposed inflammatory response to hyperbaric oxygenation to reverse the lack of oxygen in the inner ear. This article's systematic review of the literature supports this concern over the heterogeneity of the condition, therefore, more precise subject populations may allow for more accurate and efficacious indications of appropriate treatments.

Taking a further look into the concomitant issue of tinnitus, the article Residual tinnitus after the medical treatment of sudden deafness (2013) delves into a prospective study of patients to determine the prognostic factors of residual tinnitus after the final day of medical treatment for SSNHL. Forty-four patients were treated with systemic steroid for two weeks and oral intake of vasoactive drugs and vitamin B12 for six months. Their hearing improvement rates were then determined by comparing the hearing level before and six months after the start of treatment. Duration of tinnitus according to the tinnitus questionnaire were the most reliable subjective evaluation of tinnitus accompanied by SSNHL. Hearing improvement rates correlated significantly with tinnitus score improvement in regards to "duration" at six months after the start of treatment compared with before treatment.

The relationship between hearing loss and vestibular dysfunction in patients with sudden sensorineural hearing loss (2016) must also be considered. The goal of this study was to investigate the relationship between hearing loss and vestibular dysfunction in patients with SSNHL. Symptoms of vertigo of 149 patients with SSNHL were investigated retrospectively. Cochlear and vestibular function were assessed via pure tone audiometry, ocular vestibular-evoked myogenic potential (oVEMP) and cervical vestibular-evoked myogenic potential (cVEMP) evoked by air-conducted sound and caloric tests. The results indicated the patients with SSNHL with vertigo or abnormal caloric tests displayed worse hearing loss. Vertigo and abnormal caloric results happened more frequently in patients with profound SSNHL.

The article How vision and hearing contribute to service members' readiness (2021) reviews how our senses have an important function due to their interconnectivity that allow us to function, move and communicate. This article introduces key figures in the Department of Defense's Vision Center of Excellence (VCE) and Hearing Center of Excellence (HCE). The combination of these senses allows for a "360-degree threat detection system" that greatly impacts a service member's ability to fulfill a mission.

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References

Knutson, H. (2016). In My Patients' Shoes: An audiologist must deal with her own sudden sensorineural hearing loss. *The ASHA Leader*, 21(4). https://doi.org/10.1044/leader.FPLP.21042016.72

Marx, M., Younes, E., Chandrasekhar, S.S., Ito, J., Plontke, S., O'Leary, S., & Sterkers, O. (2018). International consensus (ICON) on treatment of sudden sensorineural hearing loss. *European Annals of Otorhinolaryngology, Head and Neck Diseases*, 135(1S), S23-S28. https://doi.org/10.1016/j.anorl.2017.12.011

Michiba, T., Kitahara, T., Hikita-Watanabe, N., Fukushima, M., Ozono, Y., Imai, R., & Inohara, H. (2013). Residual tinnitus after the medical treatment of sudden deafness. *Auris Nasus Larynx*, 40(2), 162–6. https://doi.org/10.1016/j.anl.2012.06.007

Niu, X., Zhang, Y., Zhang, Q., Xu, X., Han, P., Cheng, Y., Gao, Y., Zhang, R., Yang, Y., Chen, Z., Hu, J., Chen, Y., & Xu, M. (2016). The relationship between hearing loss and vestibular dysfunction in patients with sudden sensorineural hearing loss. *Acta Otolaryngologica*, 136(3), 225–31. https://doi.org/10.3109/00016489.2015.1110750

Sanchez-Bustamante, C. (2021, May). How vision and hearing contribute to service members' readiness. *Health.mil*, https://www.health.mil/News/Articles/2021/05/26/How-vision-and-hearing-contribute-to-service-members-readiness