

### Abstract

Acute vertigo is a common emergency problem in any department. However, in Japan clinical strategies for acute vertigo are diverse and vary among care providers especially in diagnostic tests and the treatment including sodium bicarbonate. Sodium bicarbonate is widely used in Japan specifically for the treatment of vertigo, yet there are no reviews of vertigo treatment in other countries and research about sodium bicarbonate in relationship to acute vertigo in Japan or other countries was limited to nonexistent.

We investigated whether there were differences of acute vertigo diagnosis (Dix-Hallpike test, Head-Impulse-Nystagmus-Test of Skew exam, CT, MRI) or treatment (Metoclopramide, antihistamine, sodium bicarbonate, Epley maneuver) between otolaryngologists and non-otolaryngologists (emergency medicine [EM] and internal medicine [IM]). This was a multi-center case-based survey. Four clinical vignettes of acute vertigo (benign paroxysmal positional vertigo [BPPV], vestibular neuritis, Meniere disease, and nonspecific vertigo) were employed in this survey.

Participants were 151 physicians from study sites. In the diagnostic domain, otolaryngologists preferred to employ less CTs for BPPV (OR=0.39,  $p < 0.01$ ).

Otolaryngologists tended to order more MRIs for vestibular neuritis (OR=3.27,  $p < 0.01$ ). In the treatment domain, at least 20% of physicians willing to prescribe sodium

bicarbonate for vertigo patients, and otolaryngologists preferred to prescribe more sodium bicarbonate for vestibular neuritis (OR= 26.05,  $p < 0.01$ ). There were significant practice differences in acute vertigo care between otolaryngologists and non-otolaryngologists. To detect efficacy of sodium bicarbonate and standardize acute vertigo care, we need random controlled trials.

*Keywords:* Acute vertigo, Comparing acute vertigo treatments, Sodium Bicarbonate, Otolaryngologist