
INTRODUCTION. An estimated 29% of aviators experience symptoms of Simulator Sickness (SS) following simulator training. Highly sensitive measures are required to assess the aftereffects of simulator training on balance and coordination, and the impact on performance and safety. The Neurocom Equitest System is a clinical device that examines the interaction of vestibular, visual and proprioceptive inputs on the balancing ability of subjects. The purposes of this study were to develop a normative aviator database as compared to established normal norms, and to determine learning effects from repeated test sessions. METHODS. Fifty-three male and 33 female aviators were tested on an initial day using an Equitest System. Repeat testing was completed on 19 males and 11 females on four additional days. RESULTS. Sensory Organization Test (SOT) equilibrium scores for the aviators were significantly higher than the clinical norms. Equilibrium scores on the first trial were significantly lower than on the two subsequent trials. Differences between males and females existed in a correlation between equilibrium and strategy scores. A significant learning effect existed for equilibrium, with a plateau reached after 3 days. Motor Coordination Test latency scores for male aviators were significantly faster than for females. CONCLUSIONS. The high aviator scores demonstrate the importance of establishing population-specific norms for balance research. Gender differences among the aviators on latency scores support previous research establishing similar differences in reaction time. The learning effects from repeated SOT tests, which could have a positive effect on the SOT, may be minimized by random-order trials.


INTRODUCTION. Cinnarizine (Cn) is an antihistaminic agent with specific vestibular Ca2+ channel blocking capacity which has been found effective as an anti-motion sickness drug. We used the Vestibulo-circular reflex (VOR) and the optokinetic nystagmus (OKN) to evaluate Cn's effects on the eye movement control mechanisms. METHODS. The VOR parameters were evaluated using the Smooth Harmonic Acceleration Test (SHAT) at 3 frequencies: 0.01-0.04 Hz. The study was conducted on 16 healthy subjects aged 18-22. The effects of Cn 50 mg vs placebo were compared using a double-blind, randomized, crossover design 2 hours after drug administration. All 16 subjects underwent the SHAT test, but only 12 completed the OKN test. RESULTS. Under the influence of Cn 50 mg, VOR gain at 0.04 Hz and phase lead at 0.16 Hz were significantly lower while on the OKN test, phase lead values were higher at 0.01 Hz. CONCLUSIONS. Cn 50 mg partially affects both VOR and OKN parameters. The drug's influence on the OKN's phase parameter suggests that Cn affects the oculomotor pathways as well as the vestibular end organ.


Introduction. Space Motion Sickness (SMS) has been a problem affecting approximately 74% of first-time Shuttle flyers. Promethazine injections have been used for 29 cases of SMS to decrease the severity of their illness. Although repeated drug injections are effective in reducing symptoms in 27 of the 29 cases, there has been no proof of its efficacy. METHODS. Retrospective analysis of general medical records examining the symptoms scores for nausea, vomiting, dizziness, and stomach awareness were performed. Each symptom is rated on a mild-moderate-severe system for flight day. Crewmember scores from the first three flights were compared to the same scores from the last flight. RESULTS. The promethazine had not been used compared to scores in a later flight which the promethazine was utilized. Scores were also compared in a similar group who did not use promethazine. RESULTS. There was a decrease in median scores for all symptoms except nausea, however it was significant (p=0.014) only for the vomiting score. CONCLUSIONS. injectable promethazine has been associated with a significant decrease in vomiting compared to earlier flights in which injectable promethazine was not used.