Vestibular perception in patients with Persistent postural perceptual dizziness (PPPD)

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Background
Persistent postural perceptual dizziness (PPPD) is a common functional disorder. It is characterized by a chronic sensation of dizziness which is exacerbated by upright posture. PPPD usually evolves as a consequence of a vestibular or other illnesses. As standard clinical vestibular tests are usually normal in these patients, we studied whether there are changes in vestibular perception.

Methods
12 patients with PPPD (Barany Society Criteria, 2017), 10 males, 2 females (mean age 59.3 years). 5 had a history of migraine with 3 suspected to have active migraine. 25 healthy controls, 12 males, 13 females (mean age 42.5 years). Vestibular perceptual thresholds (VPT) were determined for yaw-plane rotations with subjects sitting on a motorized chair and being rotated with half-cosine stimuli in random directions. Balance control was measured in the pitch (p) and roll (r) planes by a wearable device placed at the trunk close to the centre of mass. Handedness was assessed. Dizziness Handicap Inventory (DHI), Ten-item personality inventory (TIPI) and Hospital Anxiety and Depression Scale (HADS) were also assessed.

Results

Conclusions
• Vestibular perceptual thresholds (VPT) did not differ significantly in PPPD from those of normal controls
• An increased number of pathologic trunk pitch sway values were significantly correlated with higher VPT
• There was a trend in the subgroup of patients with migraine to have lower VPT and higher DHI values
• Elevated anxiety levels were significantly correlated with lower VPT values
• Dizziness Handicap Inventory (DHI) scores were not correlated with VPT or balance pathology

References

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