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Shih RD, et al, Diazepam and meclizine are equally effective in the treatment of vertigo: an emergency department randomized double-blind placebo-controlled trial, *The Journal of Emergency Medicine* (2016), <http://dx.doi.org/10.1016/j.jemermed.2016.09.016>

Clinical Question: Does diazepam control vertigo symptoms in the acute ED setting as well as meclizine? **Introduction:** Vertigo is a very common and debilitating condition that accounts for approximately 3% of all ED visits. Diazepam and meclizine are medications that are both used fairly frequently to help control symptoms. This study tried to determine if one medication was superior to the other.

Methods: This was a prospective double-blind clinical trial using a randomized convenience sample of adult patients aged 18 to 65 suffering from acute peripheral vertigo. The study was conducted at a suburban teaching ED with average annual census of 80,000. The two arms consisted of a 5 mg diazepam group and a 25 mg meclizine group, both PO. Patients recorded their initial level of vertigo on a 100 mm visual analog scale (VAS) at 0, 30 and 60 minutes. The primary outcome parameter was the average change in VAS score from 0-60 minutes. Patients with mild vertigo or vertigo measured as <40 mm on the VAS and patients requiring IV medication were excluded. Patients with any sign of centrally-induced, cardiac, syncope, pregnant or drug-induced vertigo were also excluded. Stats were then analyzed using Chi square, Mann-Whitney U test, and Student's t-test.

Results: Forty patients were enrolled in the study, 20 into each arm. Both groups had similar demographics with median age of 44 years and the mean duration of symptoms were 6.5 hours and 6.25 hours respectively. There was no statistically significant differences in proportions between the groups in relationship to headache, nausea, hearing changes, nystagmus and worsening of symptoms with head turning. The mean t 0 score was 55 mm for diazepam and 62 mm for the meclizine group (-6.7; 95% CI -18.2 to 4.8; p=0.24). Both treatments were associated with rapid improvement in vertigo scores (t 0 to t 60 VAS scores). At t 60, the mean improvement in diazepam and meclizine groups were 36 mm and 40mm, respectively (difference -4, CI -20, 12; p=0.60). No significant difference was found.

Discussion: Both drugs worked rapidly to dissipate symptoms, despite different mechanisms of action. This study had a small sample size, therefore, side effects of the meds were difficult to discern. This study only focused on the first hour of treatment without any mention of symptoms several hours to a day after initiation of treatment.

Bottom Line: Oral diazepam and meclizine were both effective treatments for peripheral vertigo symptoms presenting to the ED.
