



## Benign paroxysmal positional vertigo and osteoporosis

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One case–control study by Choi et al. published in *Eur Arch Otorhinolaryngol* demonstrated that patients with benign paroxysmal positional vertigo were 1.29 times more likely to have osteoporosis than those patients without benign paroxysmal positional vertigo (adjusted odds ratio 1.29; 95% confidence interval 1.23–1.35) [1]. Some of my ideas are shared with the readers. First, Table 1 in Choi et al. study demonstrated that the prevalence rates of osteoporosis were 28.16% (3797/13,484) in the benign paroxysmal positional vertigo group and 23.47% (12,657/53,936) in the control group [1]. These data are different from the description in result section. Second, Choi et al. study was a case–control study and the outcome was benign paroxysmal positional vertigo. That is, the authors selected cases with benign paroxysmal positional vertigo and controls without benign paroxysmal positional vertigo. Then, cases and controls were compared to retrospectively examine whether or not they had osteoporosis before benign paroxysmal positional vertigo. A causal relationship cannot be established by a case–control study. However, Choi et al. findings can be supported by a cohort study in Taiwan showing that patients with osteoporosis were 1.82 times more likely to develop benign paroxysmal positional vertigo than those patients without osteoporosis (adjusted hazard ratio 1.82; 95% confidence interval 1.34–2.48) [2]. One case–control study in Japan also demonstrated that the recurrence rate of benign paroxysmal positional vertigo was significantly higher in

patients with osteoporosis than those patients with normal bone mineral density (56.3% versus 16.2%) [3]. Finally, the association between benign paroxysmal positional vertigo and osteoporosis is a new topic, but related studies are few. More real-world data are necessary to examine this kind of association. I appreciate Choi et al. great efforts to provide the up-dated study on this topic.

### Compliance with ethical standards

**Conflict of interest** The author discloses no conflicts of interest.

### References

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