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Association of lactase 13910 C/T polymorphism with bone mineral density and fracture risk: a meta-analysis.

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Abstract

A number of studies have investigated the association of lactase (LCT,C/T-13910) gene polymorphismwith bonemineral density (BMD) and fracture risk, but previous results were inconclusive. In this study, a meta-analysis was performed to quantify the association of LCT (C/T-13910) polymorphism with BMD and fracture risk. Eligible publications were searched in the PubMed, Web of Science, Embase databases, Google Scholar, Yahoo and Baidu. Pooled weighed mean difference (WMD) or odds ratio (OR) with their 95% confidence interval (CI) were calculated using a fixed-effects or random-effects model. A total of nine articles with 8871 subjects were investigated in the presentmeta-analysis. Overall, the TT/TC genotypes of LCT 13910 C/T polymorphism showed significantly higher BMD than those with the CC genotype at femur neck (FN) (WMD = 0.011 g/cm^2, 95% CI = 0.004-0.018, P = 0.003). Besides, LCT 13910 C/T polymorphism may decrease the risk of any site fractures (for TT versus TC+CC, OR = 0.813, 95% CI = 0.704-0.938, P = 0.005; for T allele versus C allele, OR = 0.885, 95% CI = 0.792-0.989, P = 0.032). However, there was no significant association of LCT 13910 C/T polymorphism with BMD at lumbar spine and risk of vertebral fractures under all genetic contrast models (all P values were >0.05). The meta-analysis suggests that there are significant effects of LCT 13910 C/T polymorphism on BMD and fracture risk. Large-scale studies with different ethnic populations will be needed to further investigate the possible race-specific effect of LCT 13910 C/T polymorphism on BMD and fracture risk.

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