



***COL1A1* gene -1997G/T polymorphism and risk of osteoporosis in postmenopausal women: a meta-analysis**

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ABSTRACT. Studies investigating the association between the *COL1A1* gene -1997G/T polymorphism and the risk of osteoporosis in postmenopausal women have reported conflicting results. We performed a meta-analysis based on the evidence currently available from the literature to make a more precise estimation of this relationship. We conducted searches of the published literature in the PubMed and Embase databases up to September 2014. We estimated the pooled odds ratios with their 95% confidence intervals to assess the associations using fixed- or random-effect models. Publication bias was investigated by Begg's funnel plot. Meta-analysis was performed using the STATA package version 12.0. No significant association was found between the -1997G/T polymorphism in the *COL1A1* gene and osteoporosis risk in the total population analysis (TT vs GG: OR = 1.28, 95%CI = 0.76-2.17; TT vs GT: OR = 1.04, 95%CI = 0.60-1.78; dominant model: OR =

0.84, 95%CI = 0.50-1.40; recessive model: OR = 1.18, 95%CI = 0.84-1.66). In a subgroup analysis by nationality, the results also showed that no significant associations between the *COL1A1* gene -1997G/T polymorphism and osteoporosis risk existed in either Caucasian or Asian populations. No evidence of publication bias was found. In conclusion, the *COL1A1* gene -1997G/T polymorphism might not be a risk factor for osteoporosis in postmenopausal women. Further large and well-designed studies are needed to confirm these conclusions.

Key words: COL1A1; Gene polymorphism; Osteoporosis; Meta-analysis