Meta-analysis of an association of codon 72 polymorphisms of the p53 gene with increased endometrial cancer risk

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ABSTRACT. Polymorphisms of the p53 gene have been associated with susceptibility to endometrial cancer. However, whether there is a specific association is still controversial. We investigated a possible association between p53 codon 72 polymorphism and endometrial cancer risk by conducting a meta-analysis. Publications addressing this association were selected from the Pubmed, Embase and CBM databases (up to January 2011). Data were extracted from the studies by two independent reviewers. The meta-analysis was performed using RevMan 5.0.25 and STATA 9.2 softwares. The odds ratio (OR) with 95% confidence intervals (CI) was calculated. Then, 10 case-control studies were retrieved, with a total of 917 endometrial cancer patients and 1680 healthy controls. Meta-analysis results showed that the Pro allele and Pro carrier (Arg/Pro + Pro/Pro) of p53 codon 72 polymorphism were significantly related with endometrial cancer risk (OR = 1.25, 95%CI = 1.10-1.41, P = 0.0005; OR = 1.34, 95%CI = 1.12-1.59, P = 0.001, respectively). In the subgroup analysis, based on ethnicity, studies were divided into Asian and Caucasian populations; the Pro allele and Pro carrier (Arg/Pro + Pro/Pro) of p53 codon 72
polymorphism were significantly related with endometrial cancer risk in Asian populations (OR = 1.41, 95%CI = 1.19-1.66, P < 0.0001; OR = 1.66, 95%CI = 1.30-2.13, P < 0.0001, respectively), but not in Caucasian populations (both P > 0.05). We concluded that the Pro allele (Arg/Pro + Pro/Pro) of p53 codon 72 polymorphism is a potential risk factor for endometrial cancer.

**Key words:** Endometrial cancer; Polymorphism; Susceptibility; Meta-analysis; p53 gene