APC polymorphisms and the risk of colorectal neoplasia A HuGE review and meta-analysis

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Abstrak

Adenomatous polyposis coli gene (APC) polymorphisms may influence the risk for colorectal neoplasia. However, results thus far have been inconclusive. We performed a systematic literature search of the Medline, Embase, Cochrane Collaboration, and HuGE databases and reviewed the references of pertinent articles through May 2012. Odds ratios with 95% confidence intervals were used to estimate the association between 3 APC polymorphisms (D1822V, E1317Q, and I1307K) and colorectal neoplasia. In total, 40 studies from 1997 to 2010 were included in this meta-analysis, and individuals with the D1822V variant homozygote VV genotype had a slight decrease in the risk for colorectal neoplasia compared with the wild-type homozygote DD genotype (pooled odds ratio = 0.87, 95% confidence interval: 0.77, 0.99). There was a small association between the APC E1317Q polymorphism and a risk for colorectal neoplasia (variant vs. wild-type: pooled odds ratio = 1.41, 95% confidence interval: 1.14, 1.76), particularly for colorectal adenomas (variant vs. wild-type: odds ratio = 2.89, 95% confidence interval: 1.83, 4.56). Compared with those who carried the wild-type I1307K, Ashkenazi Jews who carried the I1307K variant were at a significantly increased risk for colorectal neoplasia, with a pooled odds ratio of 2.17 (95% confidence interval: 1.64, 2.86). Our study suggests that APC is a candidate gene for colorectal neoplasia susceptibility.