Smoking and the risk of age-related macular degeneration: a meta-analysis.

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Abstract

PURPOSE: Some studies were undertaken to evaluate the association between cigarette smoking and age-related macular degeneration (AMD). This meta-analysis summarized the risk estimate of smoking and AMD and provided robust evidence for the association.

METHODS: Relevant studies were identified by searching PubMed and MEDLINE (from 1966 to June 2007) and reviewing the reference lists of key articles. The summary relative risk ratio (RR) or odds ratio (OR) and 95% confidence interval (CI) were calculated. Study-specific risk estimates were pooled using a random-effects model.

RESULTS: Five prospective cohort and eight case-control studies met our inclusion criteria. Ever smoking was statistically significant associated with increased risk of AMD among cohort studies (RR, 1.61; 95% CI, 1.01-2.57) or case-control studies (RR, 1.76; 95% CI, 1.56-1.99). Current smokers were at higher risk of AMD than past smokers. Both geographic atrophy (GA) and neovascular AMD (NV) are subtypes of AMD. A significant relationship was found between smoking and GA risk. Smoking increased the risk of NV, with marginal nonsignificance (RR, 1.47; 95% CI, 0.92-2.37) in cohort studies and significance in case-control studies (RR, 1.96; 95% CI, 1.69-2.27).

CONCLUSIONS: This meta-analysis indicated smoking, especially current smoking, was significantly associated with increased risks of AMD and its subtypes.