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Association between the 8-oxoguanine DNA glycosylase gene Ser326Cys polymorphism and age-related cataract: a systematic review and meta-analysis.

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Abstract

PURPOSE: To investigate the association between the 8-oxoguanine DNA glycosylase (OGG1) gene Ser326Cys (rs1052133) polymorphism and age-related cataract (ARC).

METHODS: MEDLINE and EMBASE were searched to identify potential studies published before May 19, 2017, investigating the association between the OGG1 gene Ser326Cys polymorphism and ARC risk. The quality of eligible studies was assessed using the Newcastle-Ottawa Scale tool. The association between the OGG1 gene Ser326Cys polymorphism and ARC was analyzed using meta-analysis. Publication bias and sensitivity analyses were also performed.

RESULTS: Six studies were included in this systematic review, and five of these studies with Hardy-Weinberg equilibrium were included in a meta-analysis. The sample size of the meta-analysis was 3716, including 1831 patients with cataract and 1885 controls. Odds ratios (ORs) were 0.67 (95% confidence interval (CI) 0.52-0.85), 0.90 (95% CI 0.54-1.51), 0.52 (95% CI 0.32-0.85) and 0.72 (95% CI 0.56-0.92) for recessive, dominant, additive and allele contrast models, respectively. Sensitivity analysis indicated that the results of the meta-analysis were robust. No publication bias was observed.

CONCLUSIONS: The OGG1 gene Ser326Cys polymorphism was associated with ARC risk.

KEYWORDS: 8-oxoguanine DNA glycosylase; Age-related cataract; Meta-analysis; Polymorphism; Systematic review

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