

Serum carotenoids and risk of age-related macular degeneration in a chinese population sample.

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Source

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Abstract

Purpose. It has been hypothesized that the macular carotenoids protect against age-related macular degeneration (AMD). In this study, the association between serum concentrations of carotenoids and the presence of AMD was evaluated in a case-control sample of elderly Chinese subjects. **Methods.** Two hundred sixty-three individuals aged between 50 and 88 years enrolled in the study. Subjects included 82 cases with exudative AMD, 92 cases with early AMD, and 89 control individuals. Serum carotenoids (lutein, **zeaxanthin**, lycopene, α - and β -carotenes, and β -cryptoxanthin) and retinol were measured with reversed-phase high-performance liquid chromatography (HPLC).

Results. Serum levels of carotenoids and retinol were significantly lower in the cases with exudative AMD than in the controls. Median levels of lutein and **zeaxanthin** were 0.538 and 0.101 μM , respectively, in the control subjects, and 0.488 and 0.076 μM , respectively, in cases with exudative AMD. After adjustment for age, sex, smoking status, and body mass index (BMI), a significant inverse association was observed for exudative AMD with serum **zeaxanthin** (relative risk ratio [RRR], 0.04; 95% confidence interval [CI], 0-0.35), lycopene (RRR, 0.22; 95% CI, 0.1-0.48), and α -carotene (RRR, 0.24; 95% CI, 0.12-0.51). Early AMD was inversely associated only with lycopene (RRR, 0.49; 95% CI, 0.28-0.86) but was positively associated with α -carotene (RRR, 2.22; 95% CI, 1.37-3.58). No significant associations were observed between serum lutein and cases with early or exudative AMD.

Conclusions. The data suggest that higher levels of serum carotenoids, in particular **zeaxanthin** and lycopene, are associated with a lower likelihood of having exudative AMD. Serum levels of carotenoids were relatively higher in this Chinese cohort than in samples of other ethnicities in previous reports.