

Antioxidant supplements prevent oxidation of cysteine/cystine redox in patients with age-related macular degeneration. [1]

GreenMedInfo Summary

Abstract Title:

Antioxidant supplements prevent oxidation of cysteine/cystine redox in patients with age-related macular degeneration.

Abstract Source:

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Abstract:

PURPOSE: Determine whether antioxidant supplements alter the plasma glutathione and/or cysteine redox potential in age-related macular degeneration (AMD) patients. **DESIGN:** This was an ancillary study to the Age-Related Eye Disease Study (AREDS), where subset of AREDS subjects at two sites were studied at two time points, an average of 1.7 and 6.7 years after enrollment. **METHODS:** Plasma glutathione (GSH), glutathione disulfide (GSSG), cysteine (Cys), and cystine (CySS) were measured by high-performance liquid chromatography, and redox potentials of GSH/GSSG (E(h) GSH) and Cys/CySS (E(h) Cys) were

calculated. The means of the metabolites and redox potentials were compared by repeated-measures analysis of variance for subjects receiving antioxidants and those not receiving antioxidants. RESULTS: At the first blood draw, the means for the antioxidant group (n = 153) and no antioxidant group (n = 159) were not significantly different for any of the metabolites or redox potentials. At the second draw, the GSH parameters were not significantly different between the antioxidant (n = 37) and no antioxidant (n = 45) groups; however, mean Cys was significantly higher in the antioxidant group (9.5 vs 7.2 micromol/l, P = .008). Also, mean E(h) Cys was significantly more reduced in the antioxidant group (-74 vs -67.3 mV, P = .03). CONCLUSIONS: The AREDS antioxidant supplements reduced oxidation of E(h) Cys but had no effect on GSH. Because Cys is important for cell growth, apoptosis, and immune function, the beneficial effect of antioxidant supplementation on progression to advanced AMD may be partially explained by its effect on E(h) Cys and/or its effect on Cys availability.

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Study Type : Human Study

Additional Links

Substances : [beta-Carotene : CK\(330\) :](#)

[AC\(55\) \[2\], Vitamin C : CK\(2484\) :](#)

[AC\(569\) \[3\], Vitamin E : CK\(1881\) : AC\(335\) \[4\]](#)

Diseases : Macular Degeneration : CK(207) : AC(34) [5]
Pharmacological Actions : Antioxidants : CK(8430) : AC(3132) [6]

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