Excess of serum copper not related to ceruloplasmin in Alzheimer disease

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Abstract Full Text Full Text (PDF)

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ABSTRACT

Objective: To assess the role of serum copper in relation to ceruloplasmin and other peripheral markers of inflammation in Alzheimer disease (AD).

Methods: The authors studied serum levels of copper, ceruloplasmin, and transferrin, as well as total peroxides, antioxidants, and other peripheral markers of inflammation in 47 patients with AD, 24 patients with vascular dementia (VaD), and 44 healthy controls. Biochemical variables were related to the patients' and controls' clinical status.

Results: The authors found that copper ($p < 0.001$), peroxides ($p = 0.026$), and ceruloplasmin ($p = 0.052$) were increased and TRAP was decreased ($p = 0.006$) in patients with AD, while no other markers of inflammation were altered. The calculation of the ratio between copper and ceruloplasmin suggested the presence in the serum of AD patients, but not of VaD or normal controls, of a large pool of non-ceruloplasmin-bound copper.

Conclusions: Changes in the distribution of the serum copper components, consisting of an increase of a copper fraction not explained by ceruloplasmin, seem to be characteristic of Alzheimer disease and may be implicated in the pathogenesis of the disease.

RESPONSES TO THIS ARTICLE

Reply to Brenner
Rosanna Squitti
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Full Text

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