

Pentraxin-3 and cognitive function in older adults: The cardiovascular health study

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Topic: Vascular Inflammation and Cognitive Health in Older Adults.

Target Audience: Clinicians and researchers in the field of cardiovascular and cognitive health

Abstract: The importance of systemic inflammation, measured by C-reactive protein, in cognitive decline has been well-described; however, the role of vascular inflammation is less understood. We investigated the association between pentraxin 3 (PTX3), a novel marker of vascular inflammation, and changes in cognitive function measured by the Modified Mini Mental State Exam (3MSE). We followed adults 65 and older for up to 9 years ($n = 1,547$) in the Cardiovascular Health Study. Linear mixed effects models adjusted for demographic, behavioral and clinical risk factors were used to evaluate the relationship. Mediation by cardiovascular disease (CVD) events and effect modification by sex was also examined. The association between PTX3 and change in 3MSE differed between women and men ($p = 0.05$). In the fully adjusted model, each standard deviation increase in PTX3 was associated with a 0.21 decrease in 3MSE score per year in women over follow-up (95% CI: -0.39, -0.03; $p = 0.03$), compared to a 0.08 increase in 3MSE scores per year in men (95% CI: -0.14, 0.30; $p=0.5$). This population-based prospective cohort study of older adults, we found that vascular inflammation was significantly associated with cognitive decline in women.

Learning objectives:

1. Demonstrate the effect of pentraxin-3 on cognitive decline.
2. Identify sex differences in the relationship between vascular inflammation and cognitive decline.

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