

Abstract

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Serum insulin-like growth factor-I concentration is associated with leukocyte telomere length in a population-based cohort of elderly men.

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CONTEXT: Both leukocyte telomere length and IGF-I are associated with the aging process. A previous in vitro study suggested that IGF-I may modulate telomerase activity in white blood cells, but little is known whether these two systems interact in vivo.

PATIENTS AND METHODS: Leukocyte telomere length was determined using a quantitative PCR assay in 2744 elderly men (mean age 75.5 yr, range 69-81 yr) included in the population-based Osteoporotic Fractures in Men-Sweden study. Serum IGF-I concentration was measured using RIA.

RESULTS: Subjects with a leukocyte telomere length in the lowest tertile group had lower serum IGF-I concentration than subjects in the two tertile groups with longer telomere lengths ($P = 0.005$). Logistic regression analyses showed that a higher serum IGF-I concentration was associated with a significantly reduced risk of having a leukocyte telomere length in the lowest tertile group and also after adjustment for multiple covariates ($P < 0.01$). Multivariate linear regression analyses demonstrated that tertile of leukocyte telomere length was positively, whereas age was negatively, associated with serum IGF-I concentration in elderly men.

CONCLUSIONS: In this large population-based, cross-sectional study, leukocyte telomere length was positively associated with serum IGF-I concentration in elderly men. The mechanisms underlying the association between serum IGF-I concentration and leukocyte telomere length remain to be determined.

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