

Abstract

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Aging, telomeres, and atherosclerosis.

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BACKGROUND: Although the level and pace of population aging display high geographical variability, virtually all countries have been experiencing growth in their elderly population, particularly in developed nations. Because aging is a major risk factor for atherosclerosis and associated disease, it is of up most importance to unravel the molecular mechanisms involved in vascular aging.

DISCUSSION: Telomeres are specialized DNA-protein structures located at the ends of eukaryotic chromosomes whose length is progressively reduced in most somatic cells during aging. It is accepted that telomere exhaustion contributes to organismal ageing at least by impairing cell proliferation and viability. An emerging question is whether telomere erosion contributes to atherosclerosis.

SUMMARY: Here we discuss recent advances on the molecular control of telomere length in vascular cells, as well as animal and human studies that address the role of telomeres in vascular pathobiology. Although the interrelationships between telomere length and cardiovascular disease appear obvious, a chief question that remains unanswered is whether telomere ablation is cause of vascular injury or a surrogate phenomenon.

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