



Review

Infection and atherosclerosis. An alternative view on an outdated hypothesis

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Abstract:

Already at the beginning of the 20th century, a potential role for microbes in vascular diseases was suggested. However, not until the late '70 of that century, much attention has been paid to this infection hypothesis. Then, predominantly based on the pioneering work of Fabricant et al., evidence for a contributing or even initiating role for microbes in atherosclerosis, as well as other vascular diseases, was accumulating. Also, the seminal paper by Saikku and co-workers, demonstrating serological evidence of an association of *Chlamydia pneumoniae*, an obligate intracellular respiratory gram-negative bacterium, with chronic coronary heart disease and acute myocardial infarction, significantly boosted the research on the infection hypothesis. Since then, numerous papers have been published demonstrating associations between a large variety of pathogens and atherosclerotic disease. Furthermore, many molecular mechanisms have been suggested by which microbes may affect atherogenesis. Nevertheless, in recent large randomised prospective trials, evaluating the efficacy of antibiotic treatment for the secondary prevention of coronary events, no reduction in the rate of cardiovascular events was observed, thereby seriously challenging the validity of the infection hypothesis. Nevertheless, the large body of supporting evidence, which has accumulate over the past decades, should not be ignored and maybe we should look at the hypothesis, and in particular the mechanisms by which microbes affect the disease, from a different angle.

Key words:

infection, atherosclerosis, toll-like receptors, cytomegalovirus, chlamydia
