

CORRESPONDENCE

Time Trends in Cardiometabolic Risk Factors in Adults—Results From Three Nationwide German Examination Surveys From 1990–2011

by Dr. phil. Jonas D. Finger et al. in issue 42/2016

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New Perspectives for the Importance of Cardiometabolic Risk Factors

So far, only the classic risk factors for the development of cardiovascular diseases have been discussed, but the important co-existing inflammatory processes have not been sufficiently considered. However, for more than 20 years it has been scientifically proven that local inflammatory reactions play an important role in the development and progression of such disorders (1). These conclusions agree with the scientific results that had already been published more than 40 years ago by our research group in New York (2). During our studies on the antigenic structure of cardiovascular tissue, we demonstrated that in different stages of atherosclerosis, C-reactive protein as well as two different vascular-specific autoantigens—lipoprotein and a glycoprotein—play an important role during the development of these diseases. On this background, several years later many different and intensive studies, dealing with the development and dynamics of atherosclerosis, have been performed subsequently. More than 10 years ago, Wick et al. could demonstrate that in the early stages of atherosclerosis, the heat shock protein 60 (HSP 60) of the vascular intima cells is of special pathogenetic importance as its release causes local inflammatory processes associated with severe damage of vascular tissue (3). Interestingly, shortly thereafter Udvanoki et al. have reported that HSP 60 shows cross-reactions with the C-reactive protein. Later on, Koenig et al. were able to demonstrate that C-reactive protein can likewise trigger atherosclerotic lesions.

All these scientifically and clinically proven facts opened up completely new perspectives on the development of atherosclerosis as well as other cardiovascular diseases: they are not just caused by degenerative, but also by inflammatory and most likely autoimmune reactions. This means from the clinical perspective that not only the classic but also the inflammatory risk factors should be considered in the diagnostic evaluation and therapy of these diseases. The therapeutic consequences are a specialized treatment with antibiotic and immunosuppressive drugs or even a specific immunization. Such therapeutic means are currently in development and under study.

DOI: 10.3238/arztebl.2017.0212a

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In Reply:

We thank our correspondents for pointing out the important and manifold research insights regarding the role of inflammatory processes in the development and progression of atherosclerosis. Measures of serum high-sensitivity C-reactive protein (hs-CRP) undoubtedly have particular importance as a cardiovascular risk marker. However, a causal role of hs-CRP remains uncertain (1). Likewise, the benefit of measuring hs-CRP in addition to classical risk factors as part of individual risk assessment remains uncertain. Individual cardiovascular risk assessment may be improved in certain subgroups (2). Ongoing randomized clinical trials will provide information on the therapeutic benefit of targeted anti-inflammatory treatment; these trials are focused less on hs-CRP rather than early pro-inflammatory cytokines (3). Against this background, it will in any case make sense to include standardized measures of inflammatory biomarkers, such as hs-CRP, in the monitoring of cardiovascular risk factors at the population level, and to analyze these markers in context with classical cardiovascular risk factors. Our analysis of time trends in cardiometabolic risk in Germany based on three survey periods was limited to available data on classical cardiovascular risk factors (4). Current in-depth analyses that include data from two survey periods so far (German National Health Interview and Examination Survey 1998 and German Health Interview and Examination Survey for Adults 2008–2011) take hs-CRP into consideration (Abstract: Truthmann et al; *Gesundheitswesen* 2016; 78–A47).

DOI: 10.3238/arztebl.2017.0212b

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Conflict of interest statement

The authors of both contributions declare that no conflict of interest exists.