

# Autopsy-based study examines prevalence of atherosclerosis among US service members

December 25 2012

---

Among deployed U.S. service members who died of combat or unintentional injuries between 2001-2011 and underwent autopsies, the prevalence of coronary atherosclerosis was 8.5 percent, with factors associated with a higher prevalence of the disease including older age, lower educational level and prior diagnoses of dyslipidemia, hypertension, and obesity, according to a study in the December 26 issue of *JAMA*.

"An early breakthrough in the understanding of the natural history of atherosclerotic heart disease was achieved in 1953, when Enos and colleagues at the Armed Forces Institute of Pathology reported a 77 percent prevalence of [coronary atherosclerosis](#) among U.S. soldiers killed in the Korean War. By demonstrating anatomically that atherosclerosis affected a large proportion of young individuals without [clinical evidence](#) of heart disease, their study revolutionized the understanding of the onset and progression of [cardiovascular disease](#). A follow-up report in the [Vietnam War](#) era, along with a number of autopsy studies in the [civilian population](#) provided additional evidence that the onset of atherosclerosis may occur at an early age," according to background information in the article. Since the publication of these studies, [health policies](#) have been implemented to reduce the [risk of cardiovascular disease](#) associated with risk factors such as hypertension, diabetes, cholesterol, and smoking.

Bryant J. Webber, M.D., of the Uniformed Services University of the Health Sciences, Bethesda, Md., and colleagues conducted a study to

assess the prevalence of atherosclerosis in the U.S. armed forces. The study included all U.S. service members who died of combat or unintentional injuries in support of Operations Enduring Freedom and Iraqi Freedom/New Dawn between October 2001 and August 2011 and whose cardiovascular autopsy reports were available at the time of data collection in January 2012. Prevalence of atherosclerosis was analyzed by various [demographic characteristics](#) and medical history.

Classifications of coronary atherosclerosis severity were determined prior to data analysis and designed to provide consistency with previous military studies: minimal (fatty streaking only), moderate (10 percent - 49 percent luminal [interior of the vessel] narrowing of one or more vessels), and severe (50 percent or more narrowing of one or more vessels). Of the 3,832 service members included in the analysis, the average age was 26 years.

The overall prevalence of coronary or aortic atherosclerosis was 12.1 percent. The prevalence of any coronary atherosclerosis was 8.5 percent; severe coronary atherosclerosis was present in 2.3 percent, moderate in 4.7 percent, and minimal in 1.5 percent. The researchers found that age consistently produced the strongest association with prevalent atherosclerosis. Service members with atherosclerosis (average age, 30.5) were approximately 5 years older than those without; those 40 years of age and older had about 7 times the prevalence of disease as compared with those 24 years of age and younger (45.9 percent vs. 6.6 percent)

Lower education level and higher military entrance body mass index (BMI) were significantly associated with prevalent atherosclerosis, after adjusting for age. As compared with those who completed high school or less, those who completed at least some college had lower prevalence of disease. As compared with those with a normal BMI on military entrance, those with a BMI in the overweight or obese range had a significantly higher prevalence of atherosclerosis

The authors also found that age-adjusted atherosclerosis prevalence was associated with several diagnoses. As compared with those with no major cardiovascular risk factor diagnoses, those with a diagnosis of dyslipidemia (50.0 percent vs. 11.1 percent), hypertension (43.6 percent vs. 11.1 percent), or obesity (22.3 percent vs. 11.1 percent) had a significantly higher prevalence of atherosclerosis.

The researchers note that the prevalence rates found in this study demonstrate a decline from the rates of 77 percent noted in the Korean War and 45 percent in the Vietnam War, but add that targets for further improvement remain.

"Military and civilian health care systems should continue to help patients reduce their cardiovascular risk factors, beginning in childhood and continuing throughout adult life. Despite remarkable progress in prevention and treatment, cardiovascular disease remains the leading cause of death in the United States and other developed nations, and even small improvements in the prevalence of smoking and other risk factors may reduce death rates further and prolong healthy lives."

Daniel Levy, M.D., of the National Heart, Lung, and Blood Institute, Bethesda, Md., comments on the findings of this study in an accompanying editorial.

"Autopsy studies have demonstrated that coronary disease begins at a young age. Consequently, primary prevention campaigns to address obesity and related risks should begin in childhood. Declines in cardiovascular disease [risk factors](#) have almost certainly contributed to the observed reductions in prevalence of subclinical [atherosclerosis](#), incidence of clinical atherosclerotic disease, and deaths from heart disease. Although age-adjusted [heart disease](#) death rates have declined by 72 percent since their peak during the Vietnam War years, cardiovascular disease remains the leading cause of death in the United

States. The national battle against heart [disease](#) is not over; increasing rates of obesity and diabetes signal a need to engage earlier and with greater intensity in a campaign of pre-emption and prevention.

**More information:** *JAMA*. 2012;308(24):2577-2583  
*JAMA*. 2012;308(24):2624-2625

Provided by JAMA and Archives Journals

Citation: Autopsy-based study examines prevalence of atherosclerosis among US service members (2012, December 25) retrieved 29 April 2024 from <https://medicalxpress.com/news/2012-12-autopsy-based-prevalence-atherosclerosis-members.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.