Good news, bad news: rAAA deaths down, but 43% occur in people that don’t qualify for screening

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EPIDEMIOLOGY OF FATAL RUPTURED AORTIC ANEURYSMS IN THE UNITED STATES (1999-2016). Journal of Vascular Surgery, February 2019.

CHICAGO, Illinois, Feb. 11, 2019 – Even though the number of deaths due to ruptured aortic aneurysms has decreased 68 percent in recent years, a significant number of deaths from ruptured aortic aneurysms occur in patients whose demographics exclude them from screening guidelines, according to a newly published study in the Journal of Vascular Surgery.

Specifically, 34 percent of deaths occurred in women and 9 percent occurred in men under age 65. Screening guidelines recommend screening men age 65 and older who have either smoked or a first degree relative with aortic aneurysm.

Ruptured aortic aneurysm has a very high mortality and is currently the 15th leading cause of death in men over the age of 65. Over the past several decades, significant attention has been given to this disease in the form of risk factor modification, screening programs and endovascular therapy for ruptures.

The mortality rate due to ruptured aortic aneurysm in the United States is not well-studied, as previous research has focused on inpatient settings, operative mortality, specific communities or older data sets. The questions that remain include: What has been the impact of these improvements on aneurysm mortality in the United States? And, can we do better?

Researchers led by University of Chicago vascular surgeon Dr. Ross Milner, performed a retrospective review of the national death certificate data from the U.S. National Vital Statistics System to study deaths due to ruptured aortic aneurysm between 1999 and 2016.

Of 104,458 deaths, the mean age was 77 +/- 11 years, 62 percent were male, and 92 percent were white. The overall age-adjusted incidence of fatal ruptures was 23 per 1 million; specifically, abdominal, 15.1 / million; thoracic, 3.1 / million and thoraco-abdominal, 0.4 / million.

Importantly, the annual incidence of rupture decreased by 68 percent, from 40 per million in 1999 to 13 per million in 2016. These trends were consistent across age groups, gender and race.

Other notable trends included a seasonal variation, with the highest rupture rates in winter, and a regional variation, with the lowest rates in the southern U.S.

“The reason for this significant decrease in mortality due to ruptured aortic aneurysm remains speculative,” Dr. Milner noted, “but is likely multifactorial, including risk factor modification, population screening, improvement in regional centralization, adequate emergency preparedness, and improvement in surgical care.”

He also noted the significant number of rupture deaths in patients not currently included in screening guidelines. Specifically, 43% of deaths occurred in either women (34%) or men under 65 years old (9%).

“Further studies are required to identify the efficacy and cost-effectiveness of population-based screening for aneurysm in women,” Dr. Milner he said.

Undoubtedly this study highlights the significant strides have been made to decrease mortality from aortic aneurysm in the United States over the past decade. This data furthers our understanding as to the specific populations at higher risk for rupture and may suggest improvements in the criteria for screening. The scholarly article is available free online through March 31, 2019: https://vsweb.org/JVS-rAAATrends .

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