Abstract

Objectives: Although epidemiological studies have consistently demonstrated a higher incidence of abdominal aortic aneurysm (AAA) in men than women, limited data are available regarding the differences in the risk factors that predispose to AAA between genders. We therefore investigated the contribution of known epidemiological risk factors for AAA stratified by gender.

Methods: A retrospective cohort study was undertaken based on data collected from 3,696,778 self-referred individuals in a nationwide screening program from 2003 to 2008. AAA was defined as an aortic maximum diameter $\geq 3$ cm by ultrasound imaging. Each patient filled a questionnaire and reported information including demographics, cardiovascular diseases and aneurysmal risk factors. Multivariate analysis was used to determine independent risk factors for AAA. A univariate logistic regression model was implemented for each risk factor in men and women followed by a multivariate regression model to correct for confounding factors.

Results: The database was filtered for missing data and duplicates leaving a library of 1,679,465 patients dataset (620,703 men, mean age 64.0±9.8; 1,058,762 women, mean age 63.2±9.9). The prevalence of AAA was 1.88% in men (n=11,704) and 0.26% in women (n=2,800). Interestingly, when comparing women to men, hypertension (odds ratio [OR], 1.93 [95% confidence interval, 1.72-2.17]; P<.001 in women vs 1.26 [1.21-1.32]; P<.001 in men), smoking history (OR, 5.48 [5.01-5.99]; P<.001 in women vs 3.07 [2.93-3.21]; P<.001 in men), and coronary artery disease (CAD) (OR, 1.90 [1.62-2.23]; P<.001 in women vs 1.57 [1.47-1.68]; P<.001 in men), were more important risk factors for developing AAA in female population. In contrast, family history of AAA (OR, 3.24 [2.98-3.51]; P<.001 in men vs 0.20 [0.18-0.23]; P<.001 in women), Caucasian (OR, 1.50; [1.28-1.76]; P<.001 in men vs 0.82 [0.67-1.01]; P<.001 in women) and Native American ethnicity (OR, 1.56 [1.29, 1.90]; P<.001 in men vs 1.17 [0.91, 1.52]; P<.001 in women) were more important risk factors for men than women.

Conclusions: There is a differential pattern of risk factors associated with AAA in males and females. Smoking, hypertension and CAD are more impactful factors for women than men. Family history and ethnicity seem to be more predictive of AAA in men. This information may have important implications for appropriate design of future screening studies for AAA.