INVITED COMMENTARY

Commentary on "Predictors Associated with Increased Prevalence of Abdominal Aortic Aneurysm in Chinese Patients with Atherosclerotic Risk Factors"

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Screening for abdominal aortic aneurysms (AAAs) in elderly men with ultrasound is regarded as an established method to reduce AAA related mortality. Initial studies have reported a reduction of AAA related mortality of more than 40% in screening programs.[1–4] In the past 5 years, however, further epidemiological studies have indicated a reduction in the incidence of AAA. Current data in UK and Sweden have demonstrated an incidence of almost half that seen in screening trials, it is but still regarded as cost efficient.[5,6] Earlier studies of the prevalence of AAA in men of Asian origin showed a low incidence and therefore there is uncertainty about cost effectiveness of screening Asian patients.[7,8] In this issue of the *European Journal of Vascular and Endovascular Surgery*, Dr. Li and colleagues[9] report independent predictors for AAA and also the incidence of AAA in Chinese patients.

The patients studied consisted of 1582 consecutive patients with atherosclerotic risk factors undergoing coronary angiography for coronary artery disease (CAD). Previous studies in male patients with CAD have demonstrated an incidence of up to 9.5% for AAA.[10] The overall incidence in the current study (men and women) was 1.6% and increased to 2.9% in male patients aged over 65 years. Data on incidence reported were thus similar to recent studies from Sweden and UK. These data suggest the hypothesis that the prevalence of AAA in the Chinese may be lower than expected, even in the presence of risk factors such as CAD. The pathogenesis of AAA and CAD is different but risk factors such as advanced age, smoking, and hypertension all promote both atherosclerosis and aneurysmal degeneration. The change in epidemiology in Europe and the USA is probably due to reduced smoking and improved treatment of risk factors such as hypertension and may also be relevant to the current study.

The absolute diameters of the aorta might differ between Caucasians and Asians because of differences in body size. A study measured the average aortic diameter of Chinese patients to be 14.6 mm, which was significantly smaller than Caucasians.[11] In the current study, the average aortic diameter was 18.6 mm in patients without AAA and is similar to data from Sweden and the ADAM study where the non-aneurysmal aortic diameter was 19 and 20 mm respectively.[5,12] A method to further define the aortic size in relation to body size is to calculate the aortic size index (ASI). This is performed by dividing the aortic diameter by the body size area (BSA); for example, ASI = aneurysm diameter (cm)/BSA (m^2). This has been performed in women, and the aneurysm diameter indexed to body size is the most important determinant of rupture for women.[13]

Aortic root diameter was also investigated in the study and a diameter >30 mm was an independent predictor of AAA. An official cutoff for the definition of aortic dilatation has not been determined because of the variability of this measure. Also in this location, the ASI might be used which takes into account the body surface area, thus minimising the classification of normal aorta as pathologically dilated and vice versa.

With the relatively low incidence of AAA in the current study despite the presence of several risk factors in the study cohort questions arise about cost effectiveness of a more generalised screening program. Patients studied were selected from an in hospital cohort and it is difficult to extrapolate the findings to a larger population. The data, however, support a relatively low incidence of AAA in screened Chinese patients with atherosclerotic risk factors. Further larger scale population based studies are necessary to further define the true incidence of AAA in Chinese patients.

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