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Project: What is the expansion rate of abdominal aortic aneurysms in the octogenarian population?
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Sponsor: Age Concern

Introduction:
An abdominal aortic aneurysm (AAA) is an abnormal dilatation of the aorta and is the most common site of aneurysm formation. The dilatation is considered an aneurysm when it reaches a diameter of 30mm. It is usually slow-growing, expanding on average by about 2.6mm/year. The risk factors for developing AAA are: older age, a history of smoking, hypertension and a history of AAA in the family. Despite being slow-growing, AAA carries a high mortality if it ruptures, with the possibility of death being around 80%. To prevent this fatal consequence, management of patients in a surveillance programme is essential to monitor aortic growth over years. Once the size of the aneurysm reaches a set threshold (usually 55mm), elective repair is offered and this carries a much better prognosis compared to emergency repair at the time of rupture.

Aim:
The aim of this study was to document the growth rate of AAA in patients 80 years or older and compare them to a control group of those under the age of 80.

Impact:
Large population studies have not included patients older than 80 years old even though octogenarians are subjected to the same AAA surveillance programme.

Method:
A systematic search of an electronic database including 1292 patients who had at least one aortic scan was performed. Demographic factors and clinical risk factors were recorded from electronic medical charts. Aortic diameters from scans such as ultrasound, CT and MRI were also measured and recorded for each patient. Those patients with a single scan were excluded, leaving a total of 985 patients in the study. The expansion rate was calculated for each patient with two or more scans and expressed as millimetres per year (mm/year).

Results:
There were 783 (79.5%) patients less than 80 years old and 202 (20.5%) patients 80 years or older. The average size of aneurysms included was similar between the two groups. The overall expansion rate in the group less than 80 years old was 2.71mm/year, statistically significantly higher than the expansion rate for those 80 years old or greater (2.42mm/year). In the group less than 80 years old, there was no significant difference between female and male expansion rates. In contrast, in the group with octogenarians, females on average had aneurysms that expanded at a higher rate than males (2.62mm/year compared to 2.34 mm/year).

Conclusion:
The results of this study indicate that AAA expand slower in those 80 years or older and this finding is more apparent in males. This knowledge can offer recommendations to the current surveillance guidelines and might enable patient-specific surveillance depending on age.