Clinical outcomes of aortic aneurysm patients with and without accompanying coronary artery disease

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Introduction

- The objective of this retrospective analysis is to investigate the prevalence of associated severe coronary artery disease (CAD) in the veteran population from VA North Texas Health Care System, with an established diagnosis of thoracic and abdominal aortic aneurysm (AA) and its association with month major adverse cardiovascular event rates (MACE).
- Evidence from multinational data registries of patients with aortic aneurysm indicate that patients with proximal aortic root disease are protected against arteriosclerosis and may have fewer adverse cardiovascular (CV) events.[1, 2] The observation for reduced burden of atherosclerosis has also been claimed for peripheral arteries of the lower extremities.[1] This evidence has important implications as patients requiring urgent endovascular or open surgical intervention for aneurysms, are often referred for CV risk stratification for the likelihood of ischemic CV events and evaluation of associated CAD.[3] In our quest towards driving to answer this question with a prospective study proposal for VA, we are conducting a retrospective analysis of cardiology and cardiothoracic surgery patients with the diagnosis of aortic aneurysm.

Methods

- The study analyzed data from 501 VA out-patients diagnosed with AA between October 1992 and April 2013.
- AA diagnosis was defined by computed tomography or ultrasound as ≥1.5 times the normal aortic diameter.
- CAD was defined using a diagnosis from medical records and severe CAD as those revascularized with percutaneous coronary intervention (PCI) or coronary artery bypass graft surgery (CABG).
- Outcomes included all-cause death, non-fatal myocardial infarction (MI), stroke, PCI or CABG, rupture and endovascular or surgical repair of AA at 5 years after AA diagnosis.
- Cochran-Mantel-Haenszel statistics was used to examine associations of CAD with outcomes.

Results

Figure 1.A. 5-year outcomes of AA patient with and without CAD

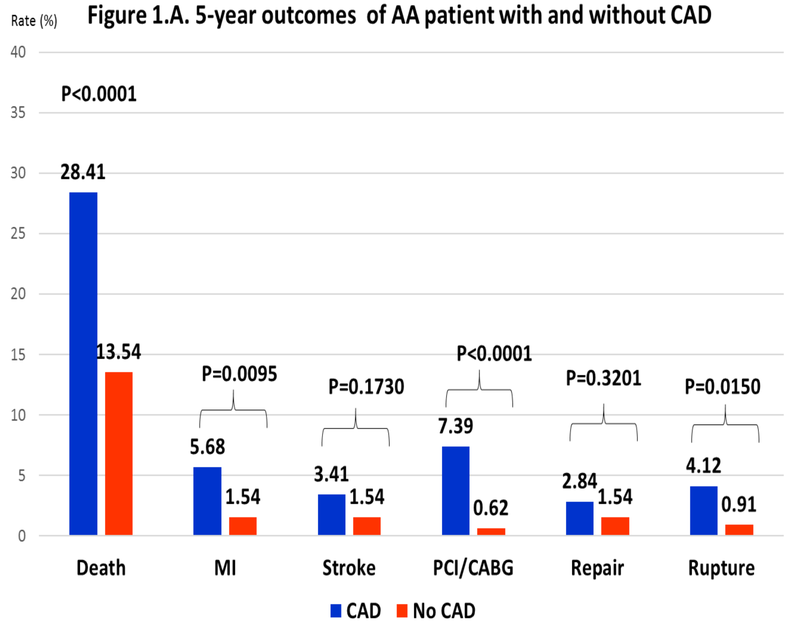
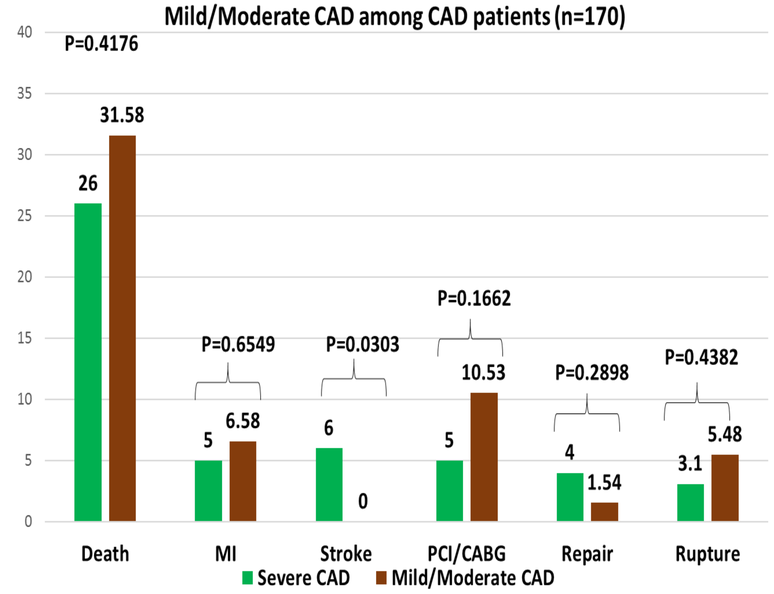


Figure 1.B. 5-year outcomes of AA patient with Severe vs. Mild/Moderate CAD among CAD patients (n=170)



Results and Discussion

- 1/3 of the sample was comorbid with CAD, of which 57% were severe CAD.
- Majority of patients (n=498, 99.4%) were male and 85.6% (n=428) were White, 7.4% (n=37) African American, 1.2% (n=6), 5.8% Hispanic, and others (n=29). Average age at AA diagnosis was 70.3 years with standard deviation of 8.4 years.
- AA patients with CAD had a higher MACE and aneurysm rupture rates at 5 years than those without (**Figure 1.A**).
- Rates of AA endovascular or surgical repair were similar between AA patients with and without CAD (including severe CAD).
- Severe CAD was significantly associated with an increased risk of 5-year stroke, but not with aneurysm rupture (**Figure 1.B**).

Conclusion

- Mid-term follow-up of veterans with aortic aneurysms revealed that concomitant CAD is associated with increased risk of all-cause death, non-fatal MI and rupture.
- Concomitant CAD in veterans with aortic aneurysms is not associated with rate of eventual aneurysm repair.
- Severe CAD in veterans with aortic aneurysms is associated with an increased 5-year stroke rate.

Future Direction

- Analyze the impact of different medications such as steroids, NSAIDS, statins, or other cholesterol agents on the progression of aortic aneurysms.
- Analyze whether certain lab values such as Hgb, cholesterol, triglyceride, or INR can be indicative of aortic aneurysm progression.
- Analyze whether all forms of imaging used for aortic aneurysm diagnosis are consistent in terms of measurement of the aortic aneurysm.
- Continue to analyze impact of CAD diagnosis on major cardiac outcomes on 2000 more patients.

References

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