GEN22 - Gender-related differences in genetically triggered aortic disease.

OBJECTIVE: To assess the gender differences in genetically triggered aortic disease.

ORGANIZATION

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BACKGROUND AND RATIONALE

Girls and women with cardiovascular disease face unique risks. Importantly, this difference seems to be mostly determined by gender-alone in multivariate analyses. On the other hand, there is recent evidence that female gender is cardioprotective. The international aortic disease registry, IRAD identified significant gender-related differences in individuals who had aortic dissection. That study found that gender is involved in some inherited aortopathies but not in others. For example, there appears to be no gender-based difference in the risk for aortic dissection in Marfan syndrome. However, the situation for BAV is very different. The IRAD considered only individuals who presented with aortic dissection and didn't enroll individuals who were at risk but had not dissected (i.e., they didn't consider individuals with aortopathy syndromes who had not dissected). The contribution of the sex chromosomes to inherited aortic disease is essentially unknown.

DESIGN

Hypothesis:

- Gender plays a significant role in the incidence, clinical characteristics, management, and, outcome of genetically-triggered aortic disease.

Inclusion criteria:

- Adults with Marfan syndrome (MFS), familial thoracic aortic aneurysm or dissection (FTAAD), bicuspid aortic valve (BAV) with thoracic aortic aneurysm or dissection, and subjects under 50 years of age with thoracic aortic aneurysm or dissection

Samples

- None

Data

- Surgical and imaging data. Organ system review, demographics and family history.

CONCLUSIONS

Results:

- Among 1449 subjects, 32% were women, including 21% of patients with BAV, 34% with FTAAD, 22% with TAAD <50y, and 47% with MFS. Thoracic aortic dissections occurred with equal gender frequency yet women with BAV had more extensive dissections. Aortic size was smaller in women but was similar after controlling for body size. Age at operation for aortic valve dysfunction, aneurysm or dissection did not differ by gender. Overall women had significantly fewer total aortic surgeries and were less likely to receive angiotensin converting enzyme inhibitors (ACEi).

Publication: Holmes KH et al. (2012) GenTAC Registry Report: Gender Differences Among Individuals with Genetically-Triggered Thoracic Aortic Aneurysm and Dissection. *Submitted*