



GEN15 - Impact of Image Analysis Method on Diagnostic and Therapeutic Classification of Patients with Thoracic Aortic Aneurysms

OBJECTIVE: To determine the impact of methodological variance on quantification of aortic size

ORGANIZATION

Lead Investigators: Jonathan Weinsaft, MD

Co-Investigators: GenTAC Investigators

Funding Source: GenTAC

BACKGROUND AND RATIONALE

Aortic size is a key determinant of diagnostic classification and therapeutic management of patients with thoracic aortic aneurysms (TAA). Non-invasive imaging is essential for assessment of aortic size. While several modalities are established for this purpose, computed tomography (CT) is frequently used as it is widely available, offers comprehensive imaging of the entire thoracic aorta, and provides high spatial resolution data within short exam times. In addition, current generation CT offers the advantage of providing three dimensional imaging data, which enables image manipulation such that aortic dimensions can be measured in double oblique (DO) planes that adjust for patient-specific differences in aortic geometry.

DESIGN

Inclusion criteria:

- 50 subjects enrolled in GenTAC with CT images available for central reading.

Samples

- None

Data

- Imaging data

CONCLUSIONS

Results:

- Established linear methods for aortic measurement yield significantly different results that can affect clinical decision-making. Double oblique measurements yielded improved agreement with the reference of planimetry and differed with axial in proportion to geometric obliquity of the aorta. These findings support preferential use of double oblique linear measurements for imaging evaluation of patients with genetically-mediated TAA.
- An Imaging Core was established to read all GenTAC Images.

Publication

- Mendoza, D. D., Kochar, M., Devereux, R. B., Basson, C. T., Min, J. K., Holmes, K., et al. (2011). [Impact of image analysis methodology on diagnostic and surgical classification of patients with thoracic aortic aneurysms](#). *Annals of Thoracic Surgery*, 92, 904–912.