Thrombus Volume & Thickness in AAA by 3D-CEUS

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I have the following potential conflicts of interest to report:

- Receipt of grants/research support
- Receipt of honoraria and travel support
- Participation in a company sponsored speakers’ bureau
- Employment in industry
- Shareholder in a healthcare company
- Owner of a healthcare company

I do not have any potential conflict of interest
BACKGROUND

IMAGING MODALITIES

- **Anatomy**
  - High sensitivity
  - High specificity

- **Morphology**
  - High sensitivity
  - High specificity

- **US**
  - High sensitivity
  - Low specificity
MATERIAL & METHODS

3D-CEUS ACQUISITION

- Transducer: X6-1 xMatrix
- US contrast agent: SonoVue
- Delineation of vessel wall and thrombus surface
MATERIAL & METHODS

3D-CEUS QUANTIFICATION

- Offline semi-automated quantification software
- Partial volume (60mm)
- Maximum thrombus thickness
MATERIAL & METHODS

STUDY DESIGN

- Prospective study
- Consecutive
- Outpatient clinic

INCLUSION

- Oral informed consent
- 3D-CEUS and CTA
- Infrarenal AAA 30-55mm

FLOWCHART

- Recruited – 137 pt.
- Screening - Jan.15 – Dec.16

EXCLUSION

- Iliac or thoracic involvement
- Renal impairment
- Diabetes Mellitus

STATISTICS

- Bland-Altman plot
RESULTS

- Bland Altman plot

3D-CEUS vs. 3D-CTA – ILT Volume

Mean diff: 2.2ml ROV: ±10.5

3D-CEUS vs. 3D-CTA – ILT Thickness

Mean diff: 0.6mm ROV: ±4.5
CONCLUSION

- 3D contrast enhanced US is a applicable method for thrombus volume and thickness estimation.

- Good agreement with 3D-CTA.

- Has the potential to become non-invasive technique, for thrombus estimation in future studies.
THANK YOU

FOR YOUR ATTENTION