Psoas Muscle Area as a Prognostic Factor for Survival in Patients with an Asymptomatic Infrarenal Abdominal Aortic Aneurysm: A Retrospective Cohort Study


**Objectives**: Loss of muscle mass has been associated with poor survival in several surgical patient populations, including those with an abdominal aortic aneurysm (AAA). We wanted to replicate these findings and assess the association between psoas muscle area (PMA) and survival in patients with an asymptomatic AAA.

**Methods**: Patients with an asymptomatic infrarenal AAA who underwent computed tomography (CT) scanning between January 1, 2007, and December 31, 2013, were included in this single-centre retrospective cohort study. PMA was measured with thresholding on an axial image at the centre level of the third lumbar vertebra. The lowest tertile of PMA in all patients was used as a cutoff value for a low PMA. Then, in separate analyses for conservatively and surgically managed patients, survival was estimated with the Kaplan-Meier method. Differences in survival between patients with and without a low PMA were tested with the log-rank test.

**Results**: Of 228 patients, 104 were managed conservatively and 124 underwent AAA repair. Seventy-seven patients (62%) had an endovascular repair. In these 228 patients, the median PMA was 16.85 cm², while the cutoff value for low PMA was 14.56 cm². Patients who were managed conservatively were more often classified as having low PMA (45/104, 43%, vs. 31/124, 25%; p = .004) and were significantly older (mean 73.44 ± 9.05 years vs. 69.03 ± 7.46 years; p < .001). Low PMA was not associated with survival, either in patients managed conservatively or in those who underwent AAA repair (p = .512 and p = .311, respectively).

**Conclusions**: The association between low PMAs and poor survival could not be replicated. In this study, low PMA was not associated with survival in patients with an asymptomatic AAA. Further research is recommended before PMA can be used for pre-operative risk stratification.

Endovascular Repair of Acute Thoraco-Abdominal Aortic Aneurysms


**Objectives**: The outcome of endovascular repair (EVAR) for acute TAAA is reported and the applicability of the t-Branch off the shelf (OTS) device is determined.

**Methods**: Interrogation of a prospectively maintained database identified all patients who underwent EVAR for acute TAAA between September 2012 (when the first non-elective t-Branch case was performed) and November 2015. Early and medium-term outcomes were analysed. Survival and re-intervention-free survival were calculated by Kaplan-Meier analysis.

**Results**: A total of 39 patients (27 men; mean ± SD age, 72 ± 8 years) were treated for acute symptomatic (n = 29) or ruptured (n = 10) TAAA (20 anatomical extent I–III, 19 extent IV). Fourteen patients had mycotic aneurysms. The mean aneurysm diameter was 80 ± 20 mm. The mean ± SD follow-up was 21.4 ± 15.4 months. Surgeon modified fenestrated EVAR was used in 24 patients, chimney/periscope EVAR in two, and t-Branch in 13 (33%) patients. Aortic coverage was greater than 40 mm above the coeliac axis in all patients. A total of 127 target vessels (TVs) were preserved (mean 3.3 per patient) and two occluded within 30 days. The 30 day mortality was 26%. Four (10%) patients developed spinal cord ischaemia (SCI): two with paraplegia died within 30 days, and two with paraparesis recovered completely with blood pressure manipulation and cerebrospinal fluid drainage. Estimated overall survival (±SD) at 12 and 24 months was 71.8 ± 7.2% and 65.2 ± 7.9%, respectively. Estimated freedom from re-intervention at 12 and 24 months was 93 ± 4.8% and 85 ± 6.8%, respectively.

**Conclusions**: EVAR for acute TAAA is associated with acceptable early and mid-term results in patients who have no other treatment options. Only one third of these patients were suitable for the t-Branch device, indicating that further advances in device design are required to treat the majority of acute TAAA patients with commercially available OTS technology.

Calcification of Thoracic and Abdominal Aneurysms is Associated with Mortality and Morbidity


**Introduction**: Cardiovascular events are common in people with aortic aneurysms. Arterial calcification is a recognised predictor of cardiovascular outcomes in coronary artery disease. Whether calcification within abdominal and thoracic aneurysm walls is correlated with poor cardiovascular outcomes is not known.

**Patients and methods**: Calcium scores were derived from computed tomography (CT) scans of consecutive patients with either infrarenal (AAA) or descending thoracic aneurysms (TAA) using the modified Agatston score. The primary outcome was subsequent all cause mortality during follow-up. Secondary outcomes were cardiovascular mortality and morbidity.

**Results**: A total of 319 patients (123 TAA and 196 AAA; median age 77 [71–84] years, 72% male) were included with a median follow-up of 30 months. The primary outcome occurred in 120 (37.6%) patients. In the abdominal aortic aneurysm group, the calcium score was significantly related to both all cause mortality and cardiac mortality (odds ratios (OR) of 2.246 (95% CI 1.591–9.476, p < .001) and 1.321 (1.076–2.762, p = 0.003)) respectively. In the thoracic aneurysm group, calcium score was significantly related to all cause mortality (OR 6.444, 95% CI 2.574–16.137, p < .001) and 1.321 (95% CI 1.765–4.654, p = 0.042) and cardiac morbidity (OR 2.128, 95% CI 1.973–4.342, p = 0.002).

**Conclusions**: Aortic aneurysm calcification, in either the thoracic or the abdominal territory, is significantly associated with both higher overall and cardiovascular mortality. Calcium scoring, rapidly derived from routine CT scans, may help identify high risk patients for treatment to reduce risk.

Outcomes of Patients with Critical Limb Ischaemia in the EUCLID Trial


**Objectives**: Critical limb ischaemia (CLI) implies an increased risk of cardiovascular morbidity and mortality, and the optimal antithrombotic treatment is not established.

**Design, Materials, Methods**: The EUCLID trial investigated the effect of monotherapy with ticagrelor versus clopidogrel in 15,685 patients with peripheral artery disease (PAD); the primary endpoint was cardiovascular death, myocardial infarction, or ischaemic stroke. Patients planned for revascularisation or amputation within 3 months, were excluded. This analysis focuses on the subgroup with CLI, defined by rest pain (58.8%), major (9.0%) or minor (32.2%) tissue loss.

**Results**: In EUCLID, 643 patients (4.6%) had CLI at baseline. Diabetes mellitus was more common in the CLI group, while coronary disease, carotid disease, and hypertension were more common in the non-CLI group. A majority of CLI patients (62%) had only lower extremity PAD. In patients enrolled on the ankle brachial index (ABI) criteria, ABI was 0.55 ± 0.21 (mean ± SD) for those with CLI versus 0.63 ± 0.15 for those without CLI. The primary efficacy endpoint significantly increased among patients with CLI compared with those without CLI with a rate of 6.85 versus 4.28/100 patient years (adjusted for baseline characteristics hazard