Sarcopenia predicts outcomes in major limb amputations

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BACKGROUND
- The association between sarcopenia and adverse outcomes following abdominal surgery, including Abdominal Aneurysm, is well reported.
- Measurement of the psoas muscle area is a well recognised morphometric surrogate in quantifying sarcopenia.
- Limited evidence existing describing its role following limb amputations.

RESULTS
- 225 patients were included in this study.
- Trans-tibial amputation n = 108. Trans-femoral amputation n = 117.
- Mean age: 68.9 years (67.1-70.7). Gender: 156 (69.3%) were male.

Co-morbidities: Smokes (n=173, 76.9%), previous ipsilateral disease (n=147, 65.3%) Diabetes (n=119 52.9%), Hypertension (n=110, 48.9%), Ischaemic heart disease (40.9%)

Indications: Tissue loss (n = 103, 45.8%), acute limb ischaemia n = 52 (22.7%), uncontrolled infection (n=42, 18.7%)

METHODS
- Prospective data was analysed relating to major limb amputations in Leeds Teaching Hospital Trusts between Dec 2012 - Jan 2017 from the National Vascular Registry (NVR).
- Data collected included patient; demographics, co-morbidity, operative details, Total psoas muscle area (TPMA), and routine morbidity and mortality data.

1. Morbidity outcomes
- Need for higher level care, Critical care stay, Post operative hospital stay, 30 day re-admission, Patient rehabilitation.

2. Mortality outcomes
- 30 day mortality, 4 year mortality, Overall mortality.

STATISTICS
- Intra- and inter- observer variation as well as inter-modality variation was assessed using Bland-Altman analysis.
- Cox-regression and linear regression modelling was performed to assess the influence of TPMA.
- Analysis is reported unadjusted and adjusted for age, sex, year of intervention, type of amputation.

MEASURING TOTAL PSOAS MUSCLE AREA
- TPMA was measured by two independent observers from routine Computer Tomographic (CT) and Magnetic resonance (MR) imaging.
- Measurements of the right and left psoas muscle area were measured at the level of the third lumbar vertebrae on the sagittal view.
- The PACS viewer IMPAX was utilised to mimic current clinical practice. Refer to fig 1.

CONCLUSIONS
No significant inter- or intra- observer or inter-modality differences were measured when observing TPMA.
There was no association between TPMA and morbidity and mortality following major lower limb amputation.