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Influence of Tube Potential on CT Body Composition Analysis

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Highlights

- Changes in tube potential in CT acquisition changes muscle attenuation values.
- Changes in tube potential changes Skeletal muscle index and statotic muscle area.
- CT acquisition parameters should be standardized for body segmentation.

Abstract

Purpose: To investigate whether tube potential in contrast enhanced Computed Tomography (CT) affects body composition analysis

Methods: Images from dual-source, dual-energy CT from the abdomen with intravenous contrast media administration were used. 17 patients (11 women, mean ag 52) with a mean BMI of 20.8 kg/cm^2 were included. Simultaneously acquired images with a tube voltage of 80kV and 140kV were compared. Body composition was analyzed on a single slice at the L3-level. Parameters evaluated included muscle and fat attenuation (Hounsfield Units, HU), skeletal muscle index (SMI, cm^2/m^2), muscle area (cm^2) and steatotic muscle area (cm^2). Significant differences between 80kV and 140kV series were compared using the paired Student's t-test.

Comment [FM1]: Minor Comment – C1