

Digital vs. analog PET/CT: intra-subject comparison of the SUVmax in target lesions and reference regions

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© 2019, The Author(s). Purpose: The purpose of this study was to assess whether digital photon counting technology in digital PET/CT influences the quantification of SUVmax in target lesions and regions of reference compared to analog PET/CT before an interchangeable use of either system in follow up studies. Methods: From January to June of 2018, 100 oncological patients underwent successive PET/CT imaging with digital and analog systems in the same day. Fifty-eight patients underwent analog imaging first and digital imaging thereafter, and 42 patients the other way round. SUVmax was measured in reference regions (liver and mediastinal blood pool) and in the most metabolically active target lesion in each patient. According to the sequence order of PET/CT acquisition, two groups of SUVmax values were obtained, i.e. group 1: analog PET/CT performed first; group 2: digital PET/CT performed first. Results: Mean SUVmax in the total sample (regardless of the order of PET/CT acquisition) in