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Assessment of the influence of the Beta parameter in the reconstruction of Q.Clear.

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Molecular PET / CT imaging is used for the diagnosis of patients with neuroendocrine tumors with the use of radiolabelled somatostatin analogues. Iterative image reconstruction techniques are used to obtain the image.Unfortunately, as a result of the significant impact of the so-called “Partial Volume Effect” in minor changes in pathological radiopharmaceutical uptake, the results of the quantitative assessment are underestimated. In PET images, it affects the assessment of the diagnostic test results as a false negative result. The selection of appropriate Q.Clear reconstruction parameters in the PET / CT MI DR system can reduce the impact of this phenomenon. In order to perform the appropriate analysis, measurements has been made using the NEMA IEC PET Body Phantom, in which the hot spheres have been filled concentration 10:1 of 68Ga isotope. The raw data was reconstructed using a Q.Clear reconstruction for a Beta parameter in the range 150-1000, in steps of 50. The analysis showed a clear decrease in the maximum values and mean SUVs with higher values of the Beta parameter for the smallest spheres.

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