

**P008****Influence of CT-based attenuation correction on presynaptic dopamine transporter SPECT with <sup>123</sup>I-FP-CIT**

**J. Brumberg**<sup>1</sup>, C. Lapa<sup>1</sup>, T. Spehl<sup>2</sup>, I. U. Isaias<sup>3</sup>, S. Schlögl<sup>1</sup>, M. Lassmann<sup>1</sup>, K. Herrmann<sup>1</sup>, P. T. Meyer<sup>4</sup>; <sup>1</sup>Department of Nuclear Medicine, University Hospital Würzburg, Würzburg, GERMANY, <sup>2</sup>Department of Nuclear Medicine, University Hospital Freiburg, Freiburg, GERMANY, <sup>3</sup>Department of Neurology, University Hospital Würzburg, Würzburg, GERMANY, <sup>4</sup>Department of Nuclear Medicine, University Hospital Freiburg, Würzburg, GERMANY.

**AIM:** Dopamine transporter imaging using <sup>123</sup>I-labelled radiopharmaceuticals like *N*-ω-fluoropropyl-2β-carbomethoxy-3β-(4-iodophenyl)nortropine (FP-CIT) is of great value in the work-up of parkinsonism. For data processing, guidelines recommend attenuation correction (AC) which is generally performed by means of a calculated homogeneous matrix. However, AC based on computed tomography (CT-AC) scans may improve diagnostic accuracy. This study aimed to assess the impact of CT-AC in comparison to conventional AC using Chang's or no attenuation map. **MATERIAL AND METHODS:** We performed single photon emission computed tomography in combination with computed tomography (SPECT/CT) and <sup>123</sup>I-FP-CIT in 30 consecutive patients. Before image evaluation, three different methods of attenuation correction were applied: a) CT-based AC, b) AC according to Chang and c) no AC. Striatal, caudate and putaminal binding potential (*BP<sub>ND</sub>*), asymmetry indices between left and right as well as binding ratios between caudate nucleus and the putamen were calculated and compared for each method. Furthermore, an analysis of diagnostic performance and a correlation with clinical scores was performed. **RESULTS:** Significantly different values of regional binding potential were obtained from each AC method. However, no relevant differences between Chang-AC and CT-AC with regards to discrimination accuracy between neurodegenerative parkinson syndromes and non-neurodegenerative movement disorders were found. CT attenuation corrected images showed slightly better correlation between UPDRS score, H&Y stage and disease duration than Chang-AC and non-corrected data. **CONCLUSION:** In FP-CIT SPECT/CT, CT-based attenuation correction does not significantly alter diagnostic accuracy as compared to conventional AC according to Chang. However, correlation with clinical scores is higher using CT-AC, suggesting a potential role in clinical studies. Additionally, morphologic additional information may prove valuable, especially in delineating the occipital reference region.