Summary

Phase 1 Clinical Study of ^{123}I-IBF, a New Radioligand for Evaluating Dopamine D_2 Receptor with SPECT (I); Biodistribution and Dosimetry

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A Phase 1 clinical study of ^{123}I-IBF, (S)-5-iodo-7-N-[(1-ethyl-2-pyrrolidinyl)methyl]carboxamido-2,3-dihydrobenzofuran, developed for evaluation of dopamine D_2 receptor (D_2-R) with SPECT, was performed in 12 healthy male volunteers. No side effects due to ^{123}I-IBF (i.v. 167 MBq) injection were observed. In sequential whole-body images, the radioactivity was distributed mainly in the liver, lungs and brain, and decreased gradually. No significant retention of radioactivity was seen in any organ at 24 hr after injection. The absorbed dose of ^{123}I-IBF, calculated based on the whole-body pharmacokinetics, was equal to or less than those of other brain perfusion imaging agents. No significant problems were observed in terms of the safety, pharmacokinetics or absorbed dose of ^{123}I-IBF.

Key words: ^{123}I-IBF, Dopamine D_2 receptor, Biodistribution, Dosimetry, Single photon emission computed tomography.