Summary

Phase 1 Clinical Study of ^{123}I-FP-CIT, a New Radioligand for Evaluating Dopamine Transporter with SPECT (I): Biodistribution and Absorbed Dose

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A Phase 1 clinical study of ^{123}I-FP-CIT, *N*-(3-fluoropropyl)-2β-carbomethoxy-3β-(4-iodophenyl)nortropane (^{123}I), developed for evaluation of dopamine transporter (DA-T) by single photon emission computed tomography (SPECT), was performed in 12 healthy male volunteers. No adverse reactions to ^{123}I-FP-CIT (167 MBq) injection were observed. In sequential whole-body images after intravenous injection, the radioactivity was distributed mainly in the liver, abdomen, lungs and brain, and it decreased gradually with time. The radioactivity was excreted mainly in the urine and no prolonged retention of radioactivity was observed in any organs at 2 days post-injection. The radiation absorbed dose of ^{123}I-FP-CIT, calculated on the basis of the pharmacokinetics, was equal to or less than those of other brain diagnostic imaging agents. These results suggest that i.v. injection of ^{123}I-FP-CIT causes no significant problems in terms of its safety, biodistribution or absorbed dose.

Key words: ^{123}I-FP-CIT, Dopamine transporter, Biodistribution, Absorbed dose, Single photon emission computed tomography.