

《招待講演》

New Radiopharmaceuticals for the Study of Brain Function by SPECT

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Tc-99m chemistry as well as I-123 chemistry seem to continue to permit the labelling of a variety of compounds with applications for single photon emission computed tomography (SPECT) of the brain. Since the advent of the I-123 labelled monoamines and diamines for studies of cerebral blood flow (CBF), a variety of Tc-99m labelled radiopharmaceuticals have been introduced to clinical practice. Tc-99m HMPAO (hexamethylpropylene amine oxime) was the first of these tracers and a significant body of knowledge with this compound has now been accumulated. Newer Tc-99m labelled compounds for CBF studies have recently been proposed—these will be reviewed and their relative merits discussed.

Most recently, I-123 labelled tracers are being developed for the general area of neuroreceptor imaging. The benzodiazepine receptor, the dopa-

mine D1 and D2 receptor, the opioid receptor, the serotonin receptor, the muscarinic receptor, have all been the subject of significant effort in terms of the development of specific radiopharmaceuticals. Greatest clinical experience so far seems to center around I-123-IBZM (I-123-S-N-1-ethyl-2-pyrrolidinyl-methyl-2-hydroxy-3-iodo-6-methoxybenzamide). Clinical studies have already demonstrated the ability of this compound to discriminate between patients on and off neuroleptic medication and to give an indication of the degree of blockade achieved on when on medication. With special purpose instrumentation dynamic SPET studies are possible and time activity curves can be recorded in a reproducible manner. This presentation will review the progress achieved so far in the areas of neuroreceptor mapping and discuss possible areas of clinical interest.