

## Quantitative measurement of regional cerebral blood flow with I-123 IMP SPECT: A correction of the microsphere model by global extraction between artery and internal jugular vein

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Quantitative measurements of regional cerebral blood flow with N-isopropyl-(Iodine 123)p-iodoamphetamine (I-123 IMP) as a microsphere model were performed in forty cases. The regional cerebral blood flow values obtained with I-123 IMP were slightly underestimated compared with those of Xe-133 inhalation methods ( $y=0.90x-2.1$ ,  $r=0.85$ ,  $p<0.01$ ). After correction by global extraction (87%) between the artery and internal jugular vein, which was measured in four patients by means of a catheter technique, the underestimation of the values obtained with I-123 IMP was improved ( $y=1.0x-2.4$ ,  $r=0.85$ ,  $p<0.01$ ). Several problems in the accurate quantitative measurement of regional cerebral blood flow with I-123 IMP are discussed.

**Key words:** regional cerebral blood flow, I-123 IMP, quantitative measurement, extraction, SPECT