

## Intra-arterial infusion of N-isopropyl-p[<sup>123</sup>I]iodoamphetamine for assessing effective blood supply to pulmonary and hepatic neoplasms

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The biodistribution and pharmacokinetics of intra-arterially administered N-isopropyl-p[<sup>123</sup>I]iodoamphetamine (<sup>123</sup>I-IMP) were prospectively evaluated in 38 patients with histologically proven pulmonary or hepatic tumors. Intra-arterially infused <sup>123</sup>I-IMP was distributed initially in peripheral tissues in which the blood supply was maintained. Its concentration in malignant neoplasms was demonstrated to be higher than in normal tissues. In pulmonary cancer, the tumor uptake of the administered dose without a tissue attenuation correction (% uptake) of <sup>123</sup>I-IMP at 1-2 min after injection was  $14.7 \pm 5.7\%$  (s.d.). The tumor to normal tissue ratio was  $2.1 \pm 0.7$  in hepatocellular carcinoma and  $1.4 \pm 0.7$  in metastatic tumors. The biodistribution of <sup>123</sup>I-IMP was also compared to that of <sup>99m</sup>Tc-macroaggregated albumin (<sup>99m</sup>Tc-MAA) in 9 cases of hepatic cancer. The distribution of <sup>123</sup>I-IMP resembled that of <sup>99m</sup>Tc-MAA in 5 cases and was different in 4 cases. <sup>123</sup>I-IMP was more concentrated in the tumor than <sup>99m</sup>Tc-MAA.

Intra-arterial infusion scintigraphy with <sup>123</sup>I-IMP seems to provide information on effective blood supply to neoplasms which are targeted in interventional radiology.

**Key words:** tumor blood flow, intra-arterial infusion, N-isopropyl-p[<sup>123</sup>I]iodoamphetamine (<sup>123</sup>I-IMP), interventional radiology