

The influence of age on N-isopropyl-p-[¹²³I]iodoamphetamine accumulation in the human heart

Masayuki NAKAJO, Yoshiaki NAKABEPPU, Shinji IWASHITA and Shinji SHINOHARA

Department of Radiology, Faculty of Medicine, Kagoshima University, Kagoshima, Japan

Variations in heart intensity in the 30 min and 4 hr chest images of the radiolabelled lipophilic amine, N-isopropyl-p-[¹²³I]iodoamphetamine (¹²³I-IMP) were observed in 130 patients with lung diseases, aged 23 to 85 yrs. The heart intensity had a significant positive linear correlation with age ($r=0.43$ at 30 min, 0.66 at 4 hr). The ratio of 4 hr heart intensity to 30 min heart intensity also had a positive linear correlation ($r=0.59$), suggesting slower clearance of the radioactivity from the heart in older than in younger patients during this interval. Other parameters including sex, EKG findings, liver function, blood pressure, the presence of diabetes mellitus and smoking history had no relationship to heart intensity. A significant difference between heart intensities in bronchogenic carcinoma and pneumonia patient groups might be probably due to the age difference between the two groups. Therefore heart intensity in the 4 hr ¹²³I-IMP image may reflect certain metabolic and/or myocardial change(s) with aging.

Key words: ¹²³I-IMP, heart, aging