

## Influence of age and gender on iodine-123 MIBG kinetics in normal lung

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Iodine-123 MIBG is a biochemical marker that can be used to monitor pulmonary norepinephrine (NE) metabolism. The purpose of this study was to characterize pulmonary I-123 MIBG kinetics in relation to age and gender.

**Materials and Methods:** Seventeen healthy volunteers and 14 patients with no cardiac or pulmonary disorders were included in this study (age range: 24 to 88 years, mean age  $50.2 \pm 17.6$  years; 16 males, 15 females). Planar images were obtained 15 min (early) and 3 h (delayed) after injection of I-123 MIBG (111 MBq). Pulmonary uptake of I-123 MIBG was quantified based on the lung-to-mediastinum ratio (LMR) on early and delayed images. The lung clearance rate (LCR) was calculated from both the early and delayed images.

**Results:** Both early and delayed LMR values increased slightly, although they showed no significant correlations with age. There was a significant inverse correlation between LCR and age ( $r = -0.57$ ,  $p < 0.001$ ). Neither LCR nor LMR differed significantly between male and female patients, but the mean age of the men was lower than that of the women.

**Conclusions:** Pulmonary I-123 MIBG kinetics may reflect age-dependent changes in NE metabolism. The effects of age should be taken into account when assessing pulmonary NE metabolism with I-123 MIBG.

**Key words:** I-123 MIBG, lung uptake, norepinephrine metabolism, endothelial cell