

Comparison of [^{18}F]FDG-PET and L-3[^{123}I]-iodo- α -methyl tyrosine (I-123 IMT)-SPECT in primary lung cancer

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Objective: The aim of this study was to evaluate L-3[^{123}I]-iodo- α -methyl tyrosine (IMT)-SPECT and FDG-PET in pulmonary lesions suspected to be lung cancer. **Methods:** Whole body PET (measured transmission corrected emission scans) was performed 45 minutes after i.v. injection of 222–370 MBq (6–10 mCi) ^{18}F -FDG on a Siemens PET scanner (ECAT EXACT 47) including 5–6 bed positions. ^{123}I -IMT-SPECT (chest) was performed after injection of 370 MBq (10 mCi) with a dual head camera (Picker Prism 2000) and commercially available reconstruction algorithms. Ten patients (6 male and 4 female) with suspected lung cancer were investigated. The results were compared to histological findings after surgery or bronchoscopic biopsies and CT. **Results:** ^{123}I -IMT-SPECT and FDG-PET were able to detect all 9 cases of lung cancer (1–8 cm in diameter). One case was true negative. Both imaging methods were true positive with respect to mediastinal lymph node metastases in one patient. The tumor/background ratio was higher with PET (8.20 vs. 2.84). **Conclusion:** Despite the limited number of patients it may be concluded that IMT-SPECT as well as FDG-PET are suited to correctly diagnose lung cancer. Nevertheless, FDG-PET, if available, seems to be better suited because of the higher tumor/background ratio and better resolution.

Key words: ^{123}I -IMT, ^{18}F -FDG-PET, lung cancer