Abstract

Purpose. To compare the diagnostic capability of PET-HCT image fusion and helical computed tomography (HCT) for nodal and distant metastases detection in patients with lung cancer. Material and method. Between February, 2003 and March, 2004 sixty-six consecutive lung cancer patients (45 men and 21 women, mean ages: 63 y.o., range: 38 to 96 y.o.) who underwent HCT and PET-HCT fusion imaging were evaluated retrospectively. All patients had histological confirmation of lung cancer and a definitive diagnosis established on the basis of pathology results and/or clinical follow-up. Results. For global nodal staging (hilar and mediastinal) HCT showed a sensitivity, specificity, positive predictive value and negative predictive value of 72%, 47%, 62% and 58% respectively, versus 94%, 77%, 83% and 92% corresponding to PET-HCT examination. For assessment of advanced nodal stage (N3) PET-HCT showed values of 92%, 100%, 100% and 98% respectively. For detection of distant metastasis, HCT alone had values of 67%, 93%, 84% and 83% respectively versus 100%, 98%, 96% and 100% for the PET-HCT fusion imaging. In 20 (30%) patients under-staged or over-staged on the basis of HCT results, PET-HCT allowed accurate staging. Conclusions. PET-HCT fusion imaging was more effective than HCT alone for nodal and distant metastasis detection and oncology staging.

Keywords
Lung, Cancer, Helical computed tomography, Positron emission tomography.