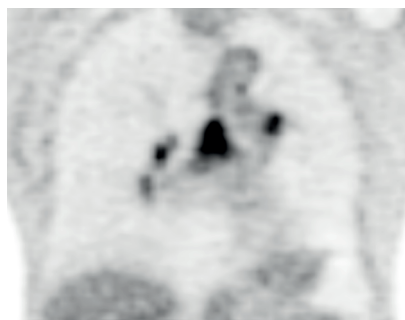
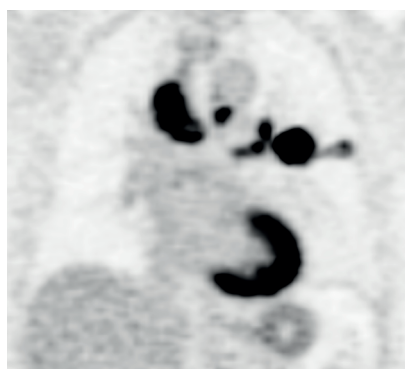




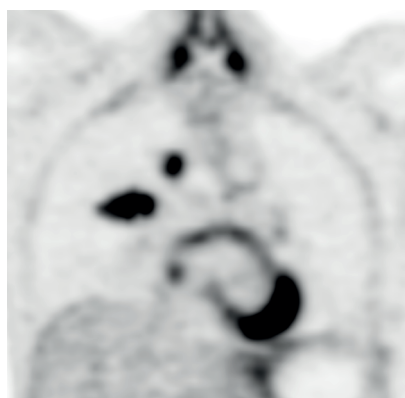
Case 1: NSCLC cT1, cN2 | FDG-PETCT



Case 2: NSCLC cT2, cN1 | FDG-PETCT



Case 3: NSCLC cT4, cN3 | FDG-PETCT



Case 4: NSCLC cT2, cN2 | FDG-PETCT

Aim

To evaluate the incremental performance of FDG-PET/CT in preoperative lymph node staging of non small cell lung cancer based on an outpatient single centre database.

Methods

Out of a total of approx. 5870 examinations from 2007-2021 integrated FDG-PET/CT examinations were performed according to EANM procedure guidelines and EARL performance standard for Initial staging in n=375 patients with newly diagnosed non-small cell lung cancer. Standardized reports were generated according to TNM-7 and TNM-8 respectively. Lymph node staging was pathologically confirmed in all patients on surgical specimen, TBNA, EBUS and/or mediastinoscopy.

Pre-PET/CT staging was based on CT-scans in all patients. Lymph nodes in FDG-PET/CT were considered positive if corresponding focal FDG-uptake was equal or higher than mediastinal-blood-pool level.

Results

In the current analysis integrated PETCT correctly N-staged 260 out of 375 patients (69,3%). Pre-PET/CT N-Staging based on CT scan and clinical appearance remained unaltered in 42% of the cases. Upgrade of the N-stage resulted in 40% of the cases and downgrade in 7%, histologically confirmed in 23 % and 3,2 % respectively. Sensitivity and specificity of PET/CT were 85% and 75%. 7% of cases were falsely staged N0. Possible reasons were direct tumor infiltration, low uptake, neoadjuvant chemotherapy but predominantly truly PET negative cases.

Conclusions

These data obtained from a private outpatient setting are in agreement with the published literature as well as current guidelines and confirm an incremental value of integrated PETCT to CT alone in pretherapeutic N-staging of NSCLC patients. However PET/CTs primary scope is M-staging. Reasons for false negative PET/CT reports are identified.

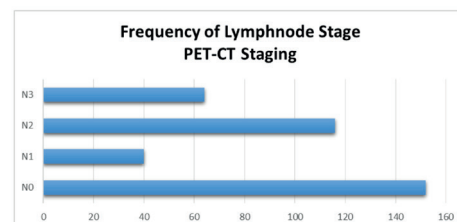


Diagram 1: Nodal Stage after PETCT/Number of Patients (375)

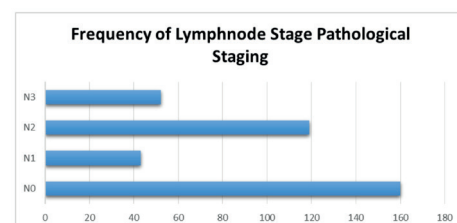


Diagram 2: Pathologically confirmed LN/Number of Patients (375)

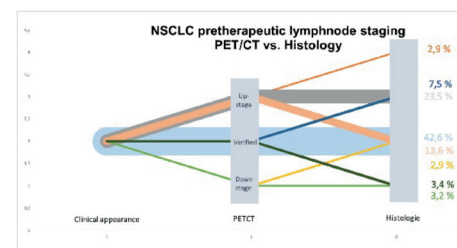


Diagram 3: Nodal Staging Results

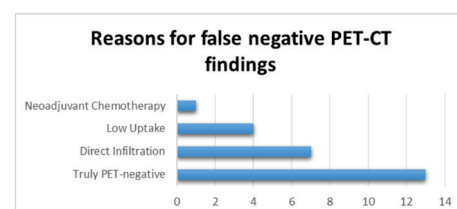


Diagram 4: Reasons falsely N0 staged cases (n=25)

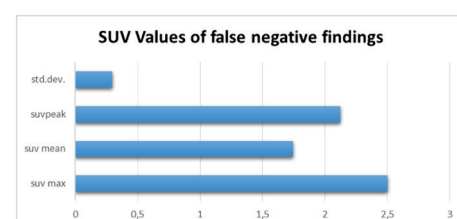


Diagram 5: SUV values falsely N0 staged cases (n=25)