

median age 65 yrs (range 23-78), male 12 pts, adenocarcinoma 7 pts, second-line erlotinib 10 pts, non-smokers 5 pts. Response assessment with clinical and/or conventional radiological methods showed 1 partial response (PR), 10 progression (PD), 2 stable disease (SD). Three pts were too early for response evaluation in this analysis. Overall disease control was 23%. All patients were evaluated with FDG-PET before erlotinib: mean maximum SUV (SUV-max) and SUV tumor/liver ratio was 9 (range 3.5-15) and 5 respectively. Six patients were assessable for response with FDG-PET that showed 1 PR, 2 SD and 3 PD. One patient with SD on FDG-PET had progression on CT-scan whereas 1 pt with PD on FDG-PET had SD on CT-scan. As today the follow-up is too short to establish the prognostic value of FDG-PET (SUV and SUV ratio) in this subset of patients. Accrual is still ongoing and mature results will be presented at the XII world conference on lung cancer

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Imaging and Staging Posters, Mon, Sept 3

Evaluation of pulmonary tumors with PET/CT

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Background: F18-FDG PET/CT provides morphologic and metabolic information for diagnosis of malignant disease; however, increased glucose uptake is not exclusive of cancer. We analyzed PET/CT capacity to study pulmonary tumors in Chilean population.

Methods: 204 patients with solitary pulmonary tumors were prospectively included in the study, 91 males, mean age 63.2 years (27-96). Exams were performed in a PET-CT Scanner Siemens Biograph 6. We studied the group with biopsy and/or follow up longer than 6 months, 153 of the 204 fulfilled this requirements. 66 patients had nodules of less than 30 mm and 87 had masses between 31 and 120 mm. Based on radiological appearance and metabolic activity in PET/CT, lesions were classified in malignant (112), benign (30) and indeterminate (11).

Results: Malignancy was demonstrated in 106 of 112 lesions categorized as malignant by PET/CT (94.6%); 6 false positive results were due to 4 infectious/inflammatory lesions and 2 benign carcinoid tumors. In the group considered as benign, 3 malignant lesions were demonstrated by biopsy (10%, 2 metastasis of colorectal cancer, 1 of thyroid cancer). In the indeterminate lesions group, 4 of 11 resulted malignant (36.3%, 2 lung cancer, 1 metastasis of kidney cancer and 1 of colic cancer). Median SUV Max was 10.5 (1.8-35.9) in the malignant group, 1.0 (0.3-15.3) in the benign group, and 2.0 g/ml (0.7-5.3) in the indeterminate group. Difference on SUV of malignant and benign lesions was significant.

Positive predictive value (PPV) for malignancy in the malignant group was 94.6%. Malignant lesions were found in the 36.3% of the indeterminate group and in the 10% of the benign group.

Conclusion: F18-FDG PET/CT is a reliable method for the study of pulmonary lesions, with a 94.6% positive predictive value for malignancy and 90% of negative predictive value. In the indeterminate cases histological study is necessary a (33.6% of malignancy).

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Preoperative serum Cyfra 21-1 and CEA help to assess the stage of non-small cell lung cancer before surgery

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Background: Staging procedures before surgical treatment of non-small cell lung cancer (NSCLC) usually consist of chest CT scan, upper abdomen CT scan or abdomen ultrasound examination, and brain CT scan in selected individuals. The clinical suspicion of mediastinal lymph nodes involvement (N2 disease) is the indication for mediastinoscopy. The aim of the present study was to assess whether preoperative Cyfra 21-1 or CEA serum measurement could help to predict the extension of NSCLC before surgery.

Methods: 49 patients (pts), 38 men, 11 women, median age 65 (42-81) years referred to the Department of Thoracic Surgery entered this study. Mediastinoscopy was performed in 14 pts, lymph node metastases were found in 5 pts (further treated with neoadjuvant chemotherapy). Primary surgical treatment was performed in 44 pts. Pathologic stage of disease was Ia-IIb in 37 pts and IIIa-IV in 7 pts. Cyfra 21-1 and CEA were measured with Elecsys Roche in sera collected before any surgical procedure.

Results: Cyfra 21-1 values exceeding 3.3 ng/ml were found in 9/37 pts with stage Ia-IIb and 8/12 pts with stage IIIa-IV (p=0.03). Median Cyfra 21-1 value was 1.93 (0.7-7.6) ng/ml in the pts with Ia-IIb stage of disease and 4.6 (1.0-14.5) ng/ml in others (p=0.04).

Median CEA value was 2.59 (0.87-30.9) ng/ml in the pts with stage Ia-IIb and 3.17 (0.76-144.2) ng/ml in other pts (nonsignificant). Median CEA value was 13.8 (0.76-144.2) ng/ml in the group of pts with positive result of mediastinoscopy and 2.6 (1.0-4.81) ng/ml in those with negative mediastinoscopy (p=0.0001).

Conclusion: Serum Cyfra 21-1 elevation before surgery of NSCLC may indicate higher pathologic stage of disease, elevated serum CEA is possibly predictive for N2 disease, found on mediastinoscopy.

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Evaluation of FDG-PET/CT for lung cancer and lymph nodes metastasis

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Background: Fluorodeoxyglucose-Positron Emission Tomography/Computed Tomography (FDG-PET/CT) is useful for the diagnosis of lung cancer. Accurate diagnosis of pulmonary nodule and lymph node metastasis contribute to the decision of treatment.

Materials and Methods: 324 patients with suspected lung cancer was performed FDG-PET/CT Ninety-one tumors of 89 patients 70 male, 19 female, mean age; 67.7years) were diagnosed histologically at Tokushima University Hospital from December 2005 to November 2006. Standardized uptake value max (SUVmax) was used for evaluation of FDG uptake at early phase and delay phase, and Retention Index (RI) was calculated in (SUVmax at delay phase- SUVmax at early phase) / SUVmax at early phase X 100 (%). We retrospectively