with mutated lung adenocarcinoma. We evaluate the use of computed tomographic guided (CT-guided) core needle biopsy for assessment of EGFR gene mutation in the patients with advanced lung adenocarcinoma who failed the chemotherapy with the correlation to the responses to gefitinib.
Materials and Methods: Between August 2005 and January 2006, 17 patients with histologically proved advanced lung adenocarcinoma who had failed chemotherapy were enrolled in the study. All fresh specimens obtained from the target cancers by CT-guided core needle biopsy were sent frozen for DNA analysis (EGFR mutation) before the treatment of gefitinib (250 mg/day). The mutant and non-mutant groups were correlated to the responses on the basis of RECIST criteria measured by computed tomography (mean interval days on 61 after gefitinib therapy) and clinical assessment (on 194 days after gefitinib therapy). The early response was recorded to positive when the biopsy target cancers were documented to partial response (>30% of tumour size reduction) under the RECIST criteria and the clinical assessment were either based on clinical presentation, chest film or CT.
Results: Nine male and 8 female patients (mean age = 58 years old; age range = 41 to 78) were enrolled in this study. Twelve patients (70%) exhibited EGFR mutations were classified to mutant and 5 were nonmutant. Fifteen patients (12 mutant and 3 nonmutant patients) finally received gefitinib therapy and 2 nonmutant patients refused gefitinib treatment. The overall early responses rates were counted to 73.3% (11/15), with 91.6% (11/12) for mutant group and 0% for nonmutant group. However, the overall clinical assessment of response resulted 80% (12/15), with 100% for mutant group and 0% for nonmutant group. Both responses were statistically significant with p values less than 0.01.
Conclusion: CT-guided core needle biopsy for EGFR mutation analysis is feasible for planning targeted therapy on lung adenocarcinoma. Presence of EGFR mutation is an independent predictor of gefitinib response.

1007 POSTER

Treatment of malignant vena cava syndrome with large self-expandable nitinol stents

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Background: More than 85% of cases of superior vena cava syndrome (SVCS) and are due to an underlying malignancy. The exact incidence of malignant inferior vena cava syndrome (IVCS) is not known, but both and IVCS and SVCS represent a severe complication of some malignancies. Radiation therapy and chemotherapy are effective but may require 2−4 weeks for relief of symptoms. Endovascular stenting may cause rapid symptom relief and does not interfere with the subsequent application of radiotherapy, chemotherapy or both. In literature most of the stenting procedures are done with either balloon-expanding or self-expanding stainless steel stents or self-expanding stents made of cobalt-chromium alloy, but little data exists on the use of nitinol stents. The goal of our study was to retrospectively evaluate safety, feasibility and outcome of large self-expandable nitinol stents to treat malignant venous stenosis.
Material and Methods: From May 2005 to November 2006, 27 patients (20 men, 7 women) with malignant disease and superior/inferior vena cava syndrome underwent endovascular treatment using Zilverstents (William Cook, Bloomington, IN, USA).
Results: Technical and radiological success was 100%. All patients who underwent SVC stenting (20/20) had immediate relief of symptoms. Five of the 7 patients (71%) with stenting of inferior vena cava/iliac vein stenosis had relief of symptoms within 1 week.
Fifteen patients (56%) died during follow-up (mean: 4.5 months, range: 2 days – 14 months) due to progressive malignant disease.
Early stent thrombosis (within 24h) occurred in 2 patients (7%). One patient died two days later, the other underwent successful fibrinolysis and additional stenting.
Instent stenosis with/without recoil occurred in 6 patients (22%). Therapy consisted of PTA alone in one, additional Zilverstent placement in two and placing a balloon-expandable stent (Express Vascular, Boston Scientific, Nanterre Cedex, France) in the Zilverstent in three patients.
Conclusion: The use of large self-expandable nitinol stents for treatment of malignant venous stenosis is safe and efficacious. Recurrent symptomatic stenosis/occlusion can be treated by additional stenting, preceded by fibrinolysis if necessary.

1008 POSTER

Dynamic contrast-enhanced ultrasonography (DCE-US) with quantification for the early evaluation of metastatic renal cancer treated with tyrosine kinase inhibitors

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Background: To determine the best quantitative parameters of dynamic contrast-enhanced ultrasonography (DCE-US) for predicting the early functional response to tyrosine kinase inhibitors (TKI) in patients with metastatic renal cancer.
Materials and Methods: Twenty-five patients with metastatic renal cancer, treated with (TKI) (sorafenib and sunitinib) were prospectively followed up by DCE-US, with primary objective to predict response to therapy.
DCE-US examinations were performed using contrast agent (Sonovue, Bracco) and perfusion (VRI: Vascular Recognition Imaging) and quantification softwares (CHI-Q: Contrast Harmonic Imaging Quantification, Toshiba) using raw linear data recorded over 3 minutes.
A qualitative analysis was performed based on the percentage of contrast uptake on the recorded video. Seven quantitative parameters characterizing tumor vascularization were calculated after modelizing contrast uptake curves. DCE-US was performed before treatment, after 2 weeks, 2 months and every 2 months. Changes in tumor vascularisation will be compared to best response obtained on CT scan performed every 2 cycles.
Results: To date, 17 patients have been followed up at baseline and after 14 days of treatment, and 11 by DCE-US and CT scan at 2 months. Seven patients had clinical benefits (stable disease and partial response) and 4 patients were non responders at 2 months. Preliminary data showed a dramatic decrease in qualitative and quantitative parameters in patients treated with TKI.The median variation in the decrease in contrast uptake at 14 days was 60%. The median decrease in blood volume represented by the peak intensity (PI) and the area under the curve (AUC) was more than 80%. The median decrease in blood flow represented by the sloap of the wash-in was more than 80%. The wash-out AUC decreased by 86%. However, due to the low number of patient with available data, the power of the study was extremely low and correlations between the wash-in AUC, the mean transit time (MTT), the time to peak intensity and response to treatment were not significant. Updated results involving all the patients will be presented during the meeting.
Conclusion: DCE-US with quantification based on raw linear data points out different parameters characterizing tumor vascularization modified during TKI treatment. Correlation with clinical results will be presented.

1009 POSTER

Additional FDG PET-CT in week 5−6 of radiotherapy for patients withNSCLC as a means of dose escalation planning

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Aims: To detect a reduction in disease volume during radical radiotherapy for non-small cell lung cancer (NSCLC) using PET-CT and to determine whether this would facilitate dose escalation.
Methods: Ten patients with localised inoperable NSCLC were prospectively enrolled. Each received conformally planned radiotherapy to a dose of 66 Gy/33# over 6.5 weeks using 6−15 MV photons and prescribed to the 100% isodose. PET-CT imaging was performed just prior to and following 50 or 60 Gy. Target volume definition was performed by one senior radiation oncologist with the help of a senior radiologist and nuclear medicine physician. For all patients and at both time points CT and PET-delineated gross tumour volumes were generated (GTVCT, GTVPET). A composite GTV was then created (GTVCT+PET) and 15 mm added in all planes to form