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Characteristics of advantage of positron emission tomography over computed tomography for n-staging in lung cancer patients

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Background: The characteristics of advantages of positron emission tomography (PET) over computed tomography (CT) for N-staging in lung cancer patients were analyzed.
Methods: Preoperative PET and CT scans were performed for 1926 lymph node stations in 192 patients with peripheral type lung cancer more than 1cm in size. The advantages of PET over CT in N-staging were analyzed in lymph node locations and histological subtypes.
Results: The pathological N-stages were N0 in 131 patients, N1 in 31, N2 in 23, and N3 in 7. PET could diagnose N0 in 127 patients, N1 in 19, N2 in 15, and N3 in 7, which were more accurate than those of CT, i.e. N0 in 117 patients, N1 in 10, N2 in 6, and N3 in 3 ($p = 0.03$, 0.04, 0.02, and 0.07, respectively). In the upper mediastinal lymph node stations, both of the false negative and false positive were significantly less frequent in PET than in CT ($p = 0.01$). In the lower mediastinal, hilar, and supra clavicle lymph nodes, PET showed less frequent false negative than CT ($p = 0.03$, 0.04, and 0.003, respectively), but there was no significant difference of the false positive between PET and CT. The PET showed less frequent understaging in adenocarcinoma ($p = 0.02$) and less frequent overstaging in squamous cell carcinoma ($p = 0.04$) than CT.
Conclusion: PET has advantage for N-staging of lung cancer over CT, especially in the upper mediastinal lymph nodes. PET reduced the understaging in adenocarcinoma and overstaging in squamous cell carcinoma, compared with CT.

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A phase I-II study of imatinib mesylate (Glivec) in combination with irinotecan (CPT-11) in patients with relapsed or refractory small cell lung cancer (SCLC)

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Background: Irinotecan is an active agent against SCLC. c-Kit over-expression is often seen in SCLC and its tyrosine kinase is inhibited by glivec. We evaluated in a phase I-II study the toxicity and efficacy of the combination in chemotherapy-pretreated patients with extensive stage SCLC.
Patients and treatment: The first 6 patients received CPT-11 at 180 mg/m^2 IV over 90 minutes administered every 2 weeks in combination with Glivec at 400 mg/day. As 3 out six patients developed dose-limiting toxicities (grade III-IV neutropenia resulting in treatment delay), in the next group of 6 patients the CPT-11 dose was reduced to 150 mg/m^2 and only one patient developed grade IV neutropenia. The study was then continued with CPT-11 150 mg/m^2 and glivec 400 mg/day as a phase II trial requiring mandatory c-kit expression by the tumor.
Results: Twenty-four treated patients were evaluable for toxicity and 17 for response (13 refractory, 4 relapsed disease). A median of 4 cycles/patient (range 1–12) were administered. At the phase II doses grade II-IV neutropenia occurred in 5 (28%) patients, febrile neutropenia in one (6%), grade II anemia in 2 (11%), grade II-III thrombocytopenia in 2 (11%) and grade II-III diarrhea in 4 (22%). Seventeen (12%) cycles were delayed for a median of 5 days (range 3–17) and 10 (7%) cycles required dose reduction due to haematological toxicity. We observed one complete and one partial response for an overall response rate of 11.8% (95% CI 0–27.1%). Additionally 6 (26%) patients had stable disease. The median time to tumor progression was 2.6 months and the overall survival 5.7 months.
Conclusion: The doses of CPT-11 150 mg/m^2 with glivec 400 mg/day are well tolerated with modest activity in pretreated patients with SCLC. Pharmacokinetic data will be presented.

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A multicenter phase II study with docetaxel plus gemcitabine in untreated patients with advanced lung adenocarcinomas

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Purpose: It was previously reported that adenocarcinoma histology was an independent predictive factor for response to the docetaxel/gemcitabine (DG) combination. To further evaluate that possibility, a phase II of the DG regimen was conducted in patients with lung adenocarcinomas.
Patients and methods: Chemotherapy patients with locally advanced or metastatic lung adenocarcinomas were enrolled. Study treatment consisted of gemcitabine (G) 1100 mg/m^2 (days 1 + 8) and docetaxel (D) 100 mg/m^2 (day 8) every 21 days with G-CSF support (day 9–15).
Results: One hundred-twenty two patients (104 men and 18 women), aged 37–75 (median 61) years were enrolled. Sixty-three (63%) patients had PS 0 and 74% stage IV disease (stage III_B). Thirty-eight (31%) patients had locally advanced disease. A total of 542 cycles were administered with a median of 4 cycles/pt (range 1–9). Grade 3/4 neutropenia occurred in 26% of patients, asthenia in 6%, febrile neutropenia in 5% and diarrhea in 4%. Other toxicities were mild. There were no toxic deaths. On an ITT analysis, for the 116 evaluable patients [(6 patients were too early); median follow-up: 7 months (range 0.5–46.2)], the overall response rate was 30.2% (95% C.I. 21.82–38.53%) with 3 (2.6%) CRs; 30 (26%) patients had stable disease. The median time to progression was 4.3 months (95% C.I. 3.17–5.49 months) and the median overall survival 11.4 months (95% CI 8.58–14.22 months); the 1-year survival rate was 48.42% and the 2-year survival rate 21.7%.
Conclusion: The DG combination is an active and well tolerated first-line treatment for advanced or metastatic lung adenocarcinomas; histology does not seem to be a factor favoring response to this regimen. Less toxic and more convenient and provide equivalent survival and improved quality of life compared with older platinum–based combinations for advanced NSCLC patients, regardless of the tumor type. Additional correlational studies are ongoing.

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First line chemotherapy with docetaxel plus gemcitabine in elderly or poor performance status patients with advanced non-small cell lung cancer: The experience of the Hellenic Oncology Research Group (HORG)

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Objective: The efficacy and toxicity of the docetaxel and gemcitabine combination (DG) was analyzed in elderly ($\geqslant$70 years) or performance status (PS) 2 patients with stage IIIB and IV non-small cell lung cancer (NSCLC).
Patients and methods: The DG regimen was administered as front-line treatment in 477 stage IIIB and IV NSCLC patients enrolled in 3 prospective phase III and 2 phase II studies conducted by the Hellenic Oncology Research Group (HORG). Gemcitabine (900–1100 mg/m^2) was given on days 1 and 8 and docetaxel (100 mg/m^2) on day 8, every 3 weeks. All patients received prophylactic rhG-CSF 150 μg/m^2.
Results: Among the 477 patients, 101 were $\geqslant$70 years old and 60 had a PS of 2. Median survival in patients $\geqslant$70 was 9.2 months versus 9.4 months in patients <70 years ($p = 0.17$). The 1-year survival rate was 34% for the older and 37.4% for the younger patients. The PS 2 patients had a median survival of 8.6 months and the PS 0–1 patients 9.4 months ($p = 0.30$). The 1-year survival rate was 32.2% and 37.3% for PS 2 and PS 0–1 patients, respectively. The older patients had a higher incidence of grade 3–4 fatigue (10% vs 4.3%) ($p = 0.04$). The incidence of grade 3–4 neutropenia was lower in the PS 2 patients (10% v 23%) ($p = 0.03$); however, the incidence of febrile neutropenia was not different between the PS 0–1 and 2 patients. No statistically significant differences were observed between older and younger patients and among PS 0–1 and PS 2 patients in other grade 3–4 adverse events, in treatment discontinuation due to toxicity or in the toxic death rate.
Conclusions: Age and PS did not seem to negatively affect the outcome and the tolerance of docetaxel/gemcitabine regimen in patients with advanced/metastatic NSCLC.