EGFR testing was more commonly done among women, younger patients, stage IV disease, non-smokers, and adenocarcinoma histology. Of 581 cases successfully tested for EGFR mutations, 211 (36.3%) were positive, including 120 with exon 19 deletions and 63 with exon 21 L858R mutations. Of 381 cases tested for KRAS mutations, 30 (7.9%) were positive, including 25 G12 mutations. Patients who were EGFR mutation positive were more likely to be women, never smokers, never drinkers and to have adenocarcinma histology.
Conclusions: About 40% and 25% of the patients had tests for EGFR and KRAS mutations, respectively. The proportion of EGFR testing is increasing over time, but formal guidelines for NSCLC diagnosis and treatment should provide specific guidance on biomarker testing required in NSCLC.

9151 POSTER

Epidermal Growth Factor Receptor Tyrosine Kinase Inhibitor (EGFR-TKI) Treatment and Radiotherapy (RT) for Central Nervous System (CNS) Are Favorable Prognostic Factors for Carcinomatous Meningitis (CM) in Lung Adenocarcinoma (AD)

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Background: As a result of recent advances in systemic chemotherapy for advanced lung AD, the numbers of patients with CM tend to increase. Although various treatment strategies have already been applied to CM, there is still no treatment proved to be effective. The aim of this study was to identify prognositic factors of CM in lung AD.
Methods: We retrospectively reviewed 68 lung AD patients with CM diagnosed by cytology and/or contrast-enhanced MRI at Shizuoka Cancer Center from September 2002 to March 2011.
Results: The patient characteristics were as follows: median age (range), 64.5 years (35−80); females, 30 (44%); non-smokers, 24 (35%); performance status (PS) 0−2 at the time of diagnosis of CM, 38 (55%); EGFR gene status, mutant 10 (15%), wild type 15 (22%), unknown 43 (63%); number of patients treated with EGFR-TKIs after the diagnosis of CM, 37 (54%); number of patients treated with RT for CNS after the diagnosis of CM, 32(47%). The median survival time (MST) after the diagnosis of CM (range) was 121 days (10–817 days). A multivariate analysis showed good PS (hazards ratio (HR), 0.40: 95% confidence interval (CI), 0.22–0.73: p = 0.0031), EGFR-TKI treatment after the diagnosis of CM (HR, 0.21: 95% CI, 0.10–0.44: p < 0.0001) and RT for CNS after the diagnosis of CM (HR, 0.41: 95% CI, 0.21–0.79: p = 0.0079) were good prognostic factors, and EGFR wild type was a poor prognostic factor (HR, 2.35: 95% CI, 1.10–4.93: p = 0.0274). In an analysis of 37 patients treated with EGFR TKIs after the diagnosis of CM, there was no significant difference of survival between 21 patients treated with EGFR-TKI for the first time after the diagnosis of CM and 16 patients treated with EGFR-TKI both before and after the diagnosis of CM (240 vs 218 days,p = 0.9354). MST of 9 patients who were treated with gefitinib before the diagnosis of CM and with erlotinib after the diagnosis was significantly longer than that of 7 patients who were treated with gefitinib both before and after the diagnosis of CM (407 vs 205 days, p = 0.0081). 15 patients treated with both RT for CNS and EGFR-TKI after the diagnosis of CM had longer survival compared to 22 patients without RT for CNS (301 vs 123 days, p = 0.0069).
Conclusion: Taking the EGFR gene status into consideration, EGFR-TKI treatment, especially by erlotinib, combined with RT for CNS may be a promising therapeutic approach to improve the prognosis of lung AD patients with CM.

9152 POSTER

Comparative Value of Various Chemotherapy Regimens in 1st-line Treatment of Adenocarcinoma of the Lung

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Background: Continuing a series of studies mining a large US Oncology (USON) electronic health record (EHR) database (iKnowMed™) regarding non-small cell lung cancer (NSCLC) we sought to answer three questions: 1) Is there a difference in value among current chemotherapy regimens for adenocarcinoma alone? 2) Does large cell carcinoma respond differently than adenocarcinoma to current regimens? 3) Can we assess the cost effectiveness of the newest regimen − carboplatin/paclitaxel followed by maintenance pemetrexed (CPMPem)?
Methods: EHR data from USON outpatient community cancer centers was reviewed. Advanced NSCLC patients with adenocarcinoma or large cell carcinoma and documented 1st-line treatment with carboplatin + paclitaxel (CP), or carboplatin + paclitaxel + bevacizumab (CPB), or cisplatin + pemetrexed (CisPem), or CPMPem were identified between July 1, 2008 to August 31, 2010. Cytotoxic treatment and estimated 1-year and 2-year survivals were evaluated. Patients were excluded if they had participated in a clinical trial, had received 1st-line with cytotoxic treatment other than above, non-adenocarcinoma or non- large cell carcinoma histology, and/or insufficient data. Survival was estimated using the Kaplan–Meier method.
Results: 1) In the adenocarcinoma cohort, 339 pts received CP, 395 CPB, and 104 CisPem. Median overall survival (OS): 10.1, 17.3, 15.8 months, respectively (P < 0.05 for both CP vs. CPB and CP vs. CisPem). Estimated 2-year survivals were CP 21%, CPB 37%, and CisPem 49%. P = 0.26 for OS CPB vs CisPem. Previous calculations (ISPOR May 2010) indicated CPB was twice as costly as CisPem. 2) Median OS for the large cell carcinoma cohort was 10.7 months for 113 pts; 62 received CP, 51 received bevacizumab or pemetrexed regimens. P = 0.38 for OS for CP vs. any bevacizumab or pemetrexed regimens; P = 0.18 for all large cell carcinoma vs adenocarcinoma CP. 3) 48 cases existed of CP followed by pemetrexed. Due to coding discrepancies, no electronic logic could separate CP followed by pemetrexed to differentiate maintenance vs 2nd-line treatment.
Conclusions: 1) CPB and CisPem are markedly superior to CP in lung adenocarcinoma. CisPem is more cost effective. 2) Large cell carcinoma responds no better than adenocarcinoma to CP, and the benefit of new regimens is unproven. 3) We could not assess the benefit of CPMPem due to coding errors, perhaps a peculiar problem of maintenance regimens, adding a note of caution to electronic databases.

Oral Presentations (Sat, 24 Sep, 11:15−12:40)
Haematological Malignancies

9200 ORAL

A Phase 3 Study Comparing Melphalan-Prednisone-Lenalidomide (MPR) With High-dose Melphalan and Autologous Transplantation (MEL200) in Newly Diagnosed Patients With Multiple Myeloma (MM)

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Background: The introduction of new drugs has changed the treatment paradigm of multiple myeloma (MM) and questioned the role of autologous stem-cell transplantation (ASCT). The aim of the present prospective randomized study is to compare conventional chemotherapy plus new drugs [melphalan-prednisone-lenalidomide (MPR)] with tandem high-dose melphalan (MEL200) and ASCT in newly diagnosed MM patients (pts).
Materials and Methods: Four-hundred two pts were enrolled and received induction treatment with four 28-day cycles of lenalidomide (25 mg, days 1−21) in combination with low-dose dexamethasone (40 mg, days 1, 8, 15, 22). After induction therapy, 202 pts were randomly allocated to MPR treatment [six 28-day cycles of melphalan (0.18 mg/kg days 1−4), prednisone (2 mg/kg days 1−4) and lenalidomide (10 mg days 1−21)]; the other 200 pts were assigned to receive MEL200 (tandem melphalan 200 mg/m^2 with stem-cell support). Progression-free survival (PFS) was the primary endpoint of this study.
Results: Similar response rates were reported in the two groups (MPR vs MEL200): at least very good partial response (60% vs 58%, p = 0.24) and complete response (CR) (20% vs 25% p = 0.49). After a median follow-up of 20 months, the 18-month PFS was 68% in MPR and 78% in MEL200 (HR = 0.58, p = 0.006). The 18-month overall survival (OS) was similar in the two groups (91% vs 95%, respectively; p = 0.073). In the MPR and MEL200 groups, the respective incidence of grade 3−4 (G3−4) neutropenia was 55% vs 89% (p < 0.001); G3−4 infections were 0% vs 17% (p < 0.001); G3−4 gastrointestinal toxicity was 0% vs 21% (p < 0.001); DVT was 2.44% vs 1.13% (p = 0.43); the incidence of second tumours was 0.005% in both arms.
Conclusions: MEL200 led to longer PFS compared with MPR, despite MEL200 being associated with a significantly higher toxicity-profile. This is the first report showing a PFS advantage for ASCT in comparison with combinations including new drugs. At present, no significant OS differences between the two groups were detected, and longer follow-up is needed.