9019 POSTER DISCUSSION

Safety Analysis of Patient Subgroups Defined by Low and High Tumour Epidermal Growth Factor Receptor (EGFR) Expression in FLEX Study Patients With Advanced Non-Small Cell Lung Cancer (NSCLC) Receiving Chemotherapy With or Without Cetuximab as First-Line Therapy

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Background: The phase III FLEX study of first-line chemotherapy (CT) with or without cetuximab in patients with advanced NSCLC met its primary endpoint in demonstrating a statistically significant improvement in overall survival for patients in the CT plus cetuximab compared with CT arm. Prospectively collected immunohistochemistry (IHC) data were used to evaluate EGFR expression in tumours from FLEX study patients on a continuous scale of 0–300. The addition of cetuximab to first-line CT was found to substantially prolong overall survival in patients with high (IHC score $\geqslant$200) tumour EGFR expression.
Materials and Methods: Treatment emergent adverse events (AEs) were defined in the FLEX study according to MedDRA 10.0 terms and were graded according to NCI-CTC version 2. The safety profiles of patient subgroups defined according to treatment group and tumour EGFR expression level (low vs high, categorized by IHC scores of <200 vs $\geqslant$200) were evaluated.
Results: An EGFR IHC score was available for 1106 of 1110 patients (100%) of the FLEX study safety population, with 343 (31%) and 763 (69%) patients included in the EGFR high and EGFR low expression subgroups of this population. Baseline characteristics were comparable between treatment arms in each subgroup. Frequencies of the most common grade 3/4 AEs occurring in $\geqslant$5% of patients in either arm of the FLEX safety population were similar in the EGFR high and low expression groups of each treatment arm. In particular, this was true for side effects typically associated with the EGFR-targeting monoclonal antibody cetuximab, which were in the expected range in both the high vs low expression groups of the CT plus cetuximab arm: acne-like rash, 10% vs 11%; infusion-related reactions, 2% vs 4%, and low magnesium, 11% vs 12%, respectively. The frequencies of other commonly reported grade 3/4 AEs for patients in the CT plus cetuximab arm including those of special interest were also comparable for the high vs low expression groups: neutropenia, 51% vs 54%; febrile neutropenia, 22% vs 22%; cardiac events, 4% vs 6%, and septic events, 3% vs 5%, respectively.
Conclusions: The similarity in safety profiles between high and low EGFR expression groups in the CT plus cetuximab arm indicates that the survival benefit associated with the addition of cetuximab to CT in the high EGFR expression group is not associated with a clinically relevant increase in the incidence of side effects.

9020 POSTER DISCUSSION

Use of Bevacizumab (BV) After Induction Therapy is Associated With Survival Benefit in Patients (pts) With Non-small Cell Lung Cancer (NSCLC) in the ARIES Observational Cohort Study (OCS)

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Background: In NSCLC, the significant survival benefits observed with BV + CT in pivotal trials were achieved using BV therapy (tx) until progressive disease (PD). However, real-world data show divergent patterns of BV use as maintenance (mtc) subsequent to CT induction. We conducted landmark analyses for the ARIES OCS to evaluate the relationship between BV mtc and overall (OS) and progression-free survival (PFS) after induction with BV and 1st-line CT.
Methods: Pts with advanced NSCLC receiving BV with 1st-line CT were enrolled. The induction period (IP) was defined as 12−18 wks of CT (~4−6 cycles) used within 18 wks of initial CT+BV tx. Pts who continued to receive BV beyond their IP were considered to be on BV mtc (BVM). OS/PFS were measured from each pt's landmark, defined as the end of their IP. Pts who died or had PD prior to this landmark were excluded. OS/PFS were estimated by Kaplan–Meier methods. Hazard ratios (HR) were estimated by Cox regression, adjusting for baseline demographics, disease characteristics, comorbidities, BV + CT duration during the IP. A sensitivity analysis was also conducted, with a uniform landmark of 18 wks from 1st BV + CT tx.
Results: As of 2/2011, 1967 BV-treated NSCLC pts were enrolled; 1213 were alive and progression-free beyond their IP.

Post-landmark survival estimates (95% CI)

Analysis	Primary (Landmark = CT end date within 18 wks of 1st BV+CT tx)		Sensitivity (Landmark = 18 wks after 1st BV+CT tx)	
	BVM (n = 539)	Non-BVM (n = 674)	BVM (n = 526)	Non-BVM (n = 643)
Median (m) OS, mos	15.5 (14.2, 16.7)	11.2 (9.9, 12.5)	15.5* (14.3, 17.0)	11.5* (10.3, 12.7)
HR Unadjusted	**	0.75 (0.66, 0.86)	**	
HR Adjusted	0.76 (0.65, 0.87)	**	0.77 (0.66, 0.89)	**
mPFS, mos	5.1 (4.7, 5.7)	3.7 (3.4, 4.1)	5.0* (4.6, 5.8)	3.6* (3.3, 4.0)
HR Unadjusted	0.79 (0.71, 0.89)	**	0.81 (0.72, 0.91)	**
HR Adjusted	0.80 (0.71, 0.91)	**	0.82 (0.72, 0.94)	**

* mPFS/OS from 1st tx can be calculated from: indicated mPFS/OS + 4.1 mos (18 wks); **HR referent.

Conclusions: Our analysis in a real-world pt population with BV-treated NSCLC appears to show a benefit, in both OS and PFS, associated with BV mtc beyond induction with 1st line CT+BV.

9021 POSTER DISCUSSION

The Accumulated Dose and Volume Parameters for Healthy Tissue in Different Plans Based-on Deformable Registration in Lung Cancers

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Purpose: To find an accurate deformable registration method compared with the static plan to eveluate the accumulated dose and volume parameters of different plans on different CT images for lung cancer patients.
Methods: Ten 3D-CRT and IMRT lung cancer plans were analysed retropectly. During the radiotherapy period the patients had another CT scanning to replan in new PTV contours by the residual prescribed dose. The deformable CT image was produced in the new CT image deformed the old CT image. Then the accumulated dose produced in new CT image contours deformed the old dose. The accumulated organs at risk (OARs) dose and the static plan dose were compared in a statistical methed.
Results: The V5 of total lung in the static plan was lower than the deformable accumulated dose volume ($P > 0.05$). The V20 and V30 of total lung the static plan dose volume was all higher than the deformable accumulated dose volume ($P > 0.05$). The V30 of heart in the static plan dose volume was similar to the deformable accumulated dose volume ($P > 0.05$). But the V40 of heart the static plan dose volume was higher than the deformable accumulated dose volume ($P > 0.05$). The mean dose of the total lung (MLD) in the static plan dose was higher than the deformable accumulated dose ($P > 0.05$). The maximum dose of spinal-cord in static plan was lower than the deformable accumulated dose ($P > 0.05$).
Conclusions: No statistical significances were obseved between the static plan and deformalbe registration method for healthy tissue and OARs but the mean dose of right lung. The result preliminary investigated the static plan could be used to evaluate the dose and volume parameters for lung and heart in lung cancers. However, we needed more patients to further study to get the more accurate result.