494P Comparison of pattern of disease progression and prevalence of acquired T790M mutation in Malaysia patients with EGFR mutant lung adenocarcinoma upon failure of first-line afatinib, gefitinib and erlotinib

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Background: Patients receiving first-line afatinib, gefitinib or erlotinib for epidermal growth factor receptor (EGFR) mutant advanced non-small cell lung cancer develop progression of disease (PD) after an average of 9-13 months.

Methods: A retrospective analysis of PD pattern and prevalence of acquired T790M mutation among patients failing first-line afatinib versus gefitinib or erlotinib at University Malaya Medical Centre from 1st January 2015 to 31th December 2018.

Results: Of 87 patients who developed PD while on first-line EGFR-tyrosine kinase inhibitor (TKI) treatment, 19 (21.8%) were on afatinib, 49 (56.3%) were on gefitinib, and 19 (21.8%) were on erlotinib. The median progression-free survival (mPFS) of these patients is as shown in the table. Of 20 patients (23.0%) who developed new symptomatic brain metastases, one (5.0%) had new leptomeningeal metastases, three (15.0%) had both new leptomeningeal metastases and solid brain metastases, and the remaining 16 (80.0%) had new solid brain metastases only. New leptomeningeal metastases occurred in one patient treated with afatinib and three patients treated with gefitinib. Forty-nine patients (56.3%) were investigated for acquired T790M mutation either by plasma biopsy or tissue biopsy or both. The prevalence of acquired T790M mutation was 61.2%. There was no difference in the pattern of PD or prevalence of acquired T790M mutation among patients treated with afatinib, gefitinib or erlotinib.

Conclusions: New leptomeningeal metastases were uncommon in patients receiving first-line EGFR-TKI. The choice of first-line first- or second generation EGFR-TKI did not influence the pattern of PD and prevalence of acquired T790M mutation. However, patients receiving afatinib appeared to have longer mPFS than those on gefitinib or erlotinib.

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Table: 494P

Pattern of PD		Patients with PD (n = 87)	Afatinib (n = 19)	Gefitinib (n = 49)	Erlotinib (n = 19)	p-value
Median PFS, months		11.0	13.1	10.9	7.8	0.479
New brain metastases, No. (%)	Yes No	20 (23.0) 67 (77.0)	5 (26.3) 14 (73.7)	12 (24.5) 37 (75.5)	3 (15.8) 16 (84.2)	0.692
New solid brain lesion metastases, No (%)	Yes No	19 (21.8) 68 (78.2)	4 (21.1) 15 (78.9)	12 (24.5) 37 (75.5)	3 (15.5) 16 (84.2)	0.735
New leptomeningeal metastases, No. (%)	Yes No	4 (4.6) 83 (95.4)	1 (5.2) 18 (94.8)	3 (6.1) 46 (93.9)	0 19 (100)	0.550
No. of patients tested for acquired T790M mutation		n = 49	n = 14	n = 27	n = 8	p-value
Acquired T790M mutation detected, No. (%)	Yes No	30 (61.2) 19 (38.8)	9 (64.3) 5 (35.7)	16 (59.3) 11(40.7)	5 (62.5) 3 (37.5)	0.949