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Clinicopathologic characteristics of NSCLC patients with uncommon EGFR mutations in Korea

Respiratory and critical care medicine

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Background and Aim

- Limited clinicopathologic data are available in
- NSCLC patients with **uncommon EGFR mutations** in Korea

Methods

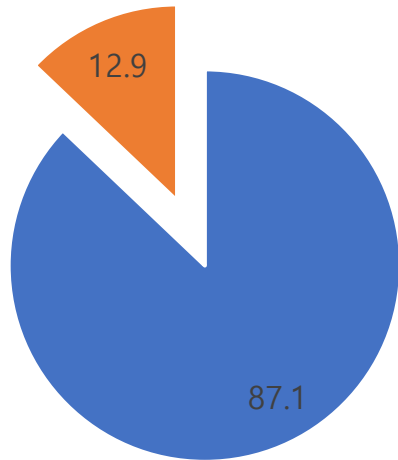
- Retrospective multi-center study
- Lung cancer cohort of the CMC of Korea
 - Between Jan 2018 and Dec 2021
 - 589 NSCLC patients harboring EGFR mutations

Category

- Uncommon EGFR mutations
 - Exon 20 insertions
 - 'major' uncommon mutations
 - G719X, L861Q, S768I
 - With/out other mutations except T790M or an exon 20 ins
 - Compound mutations

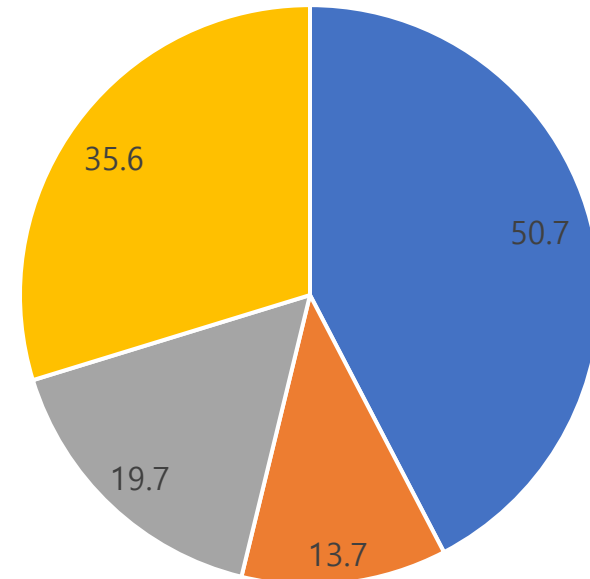
Result - composition

EGFR mutations



■ common ■ uncommon

uncommon EGFR mutations



■ major uncommon ■ compound ■ exon 20 ins ■ other

Comparison of clinicopathologic factors

	Common mutations n=513	Uncommon mutations n=76	<i>P</i> value
Age	66.69±10.42	68.22±10.21	0.856
Sex, male	198 (38.6%)	41 (53.9%)	0.011
Smoking history			0.005
never	323 (63.0%)	33 (43.4%)	
ever	118 (23.0%)	26 (34.2%)	
current	72 (14.0%)	17 (22.4%)	
pack years	27.68±22.28	35.19±30.17	0.096
COPD	65 (16.6%)	19 (33.3%)	0.003
Cell type			0.001
adeno	484 (94.3%)	67 (88.2%)	
sqcc	13 (2.5%)	9 (11.8%)	
adenosqcc	6 (1.2%)	0 (0.0%)	

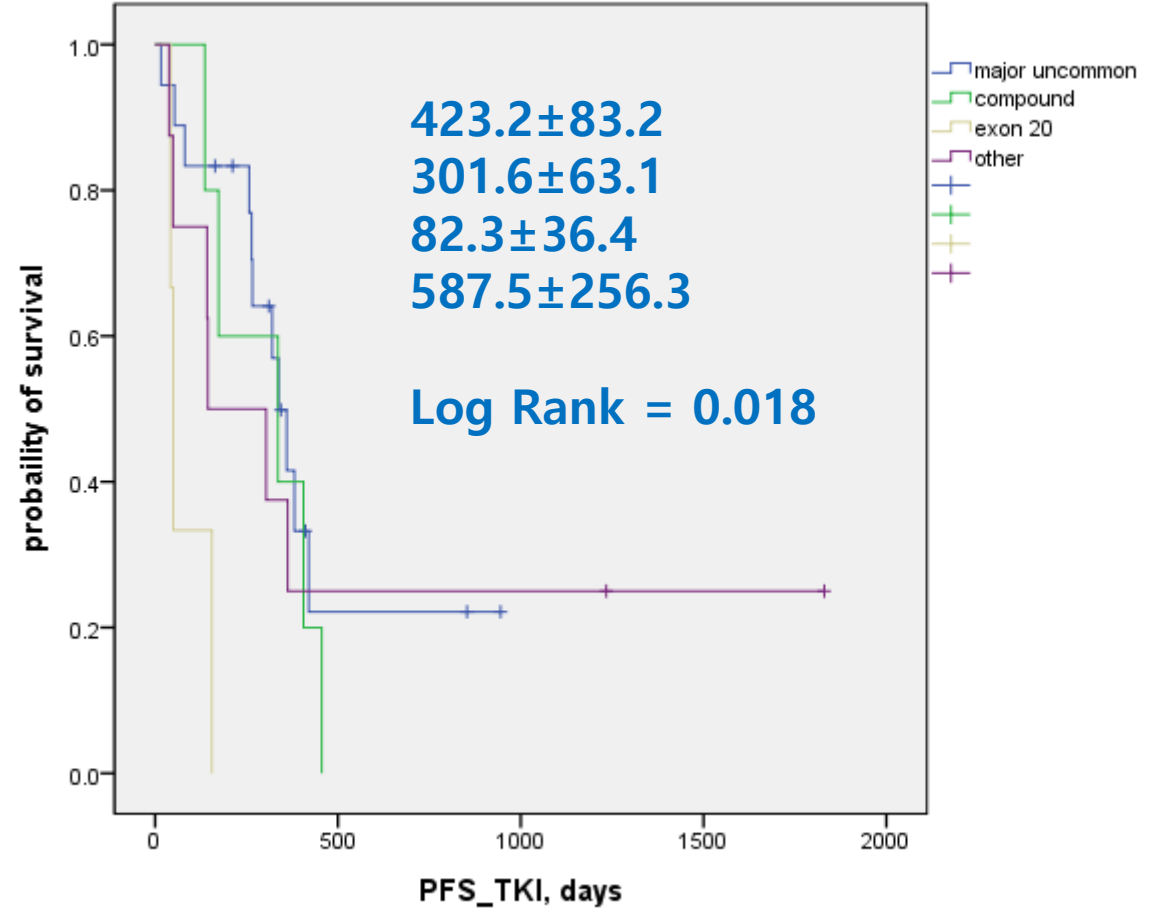
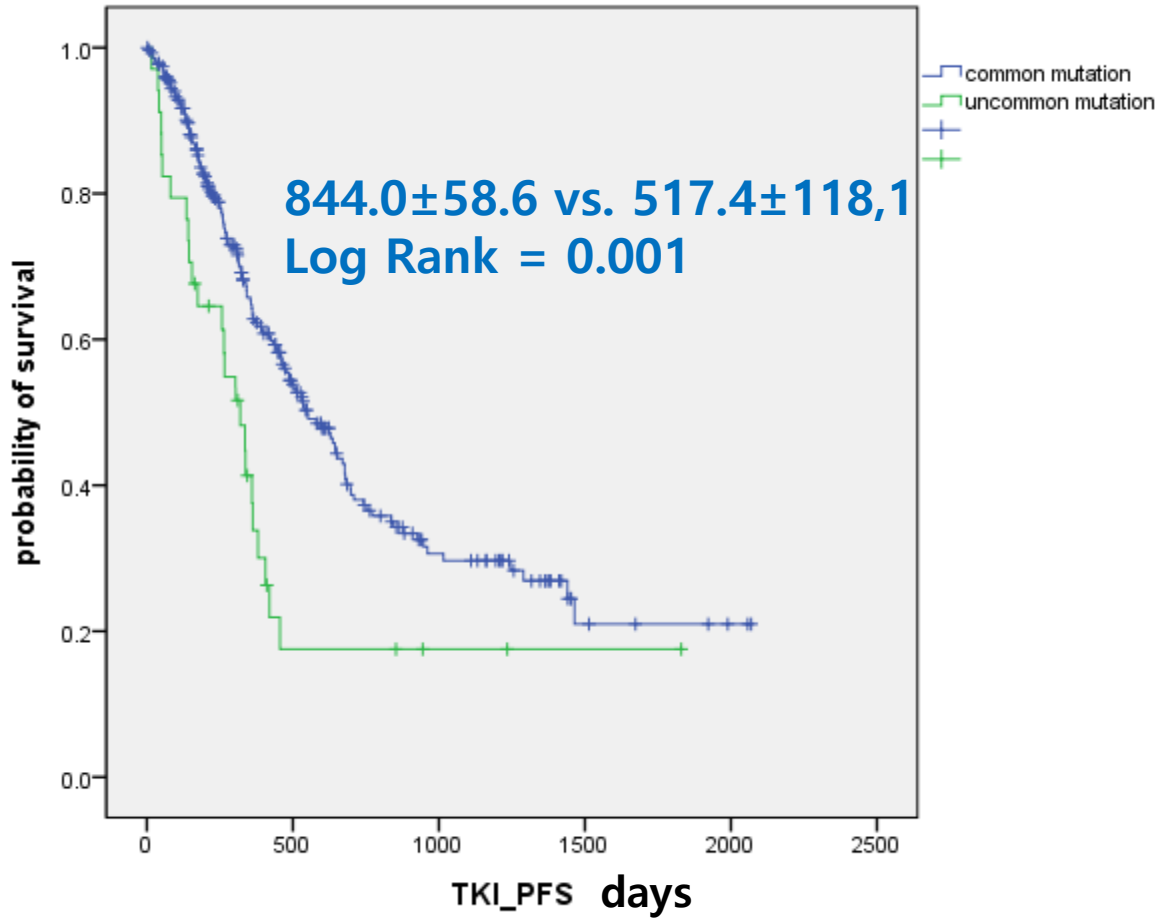
Comparison of clinicopathologic factors

	Common mutations n=513	Uncommon mutations n=76	<i>P</i> value
PD-L1 (SP263)	10.67±22.03	16.54±27.15	0.015
PD-L1 (22C3)	14.40±26.89	14.11±21.80	0.206
PFT			
FEV1/FVC	74.28±8.59	71.04±11.69	<0.001
FEV1, %	95.59±23.74	93.45±26.04	0.374
FVC, %	92.89±31.18	91.75±19.16	0.649
Total lung capacity	94.9±16.4	102.4±47.9	0.015
Residual volume	85.9±28.5	99.8±107.9	0.001
DLco	86.9±20.2	85.3±19.9	0.027
Metastasis			
pleural mets	424 (82.7%)	70 (92.1%)	0.036
pericardial effusion	0 (0.0%)	1 (1.3%)	0.009
pleural nodules	21 (4.1%)	0 (0.0%)	0.072

Treatment

	Common mutations n=513	Uncommon mutations n=76	<i>P</i> value
Afatinib	147 (28.7%)	18 (23.7%)	0.046
Gefitinib	97 (18.9%)	11 (14.5%)	
Erlotinib	16 (3.1%)	5 (6.6%)	
Osimertinib	8 (1.6%)	0 (0.0%)	
Dacomitinib	8 (1.6%)	0 (0.0%)	
Cytotoxic chemotherapy	1 (0.2%)	2 (2.6%)	
Conservative	176 (34.3%)	29 (38.2%)	

TKI PFS



Conclusion

- Different clinicopathologic characteristics between common and uncommon EGFR mutations
 - Smoking, male and PD-L1 expression
 - Clinical outcomes
 - Further investigations are needed
 - Responsiveness to immunotherapy in this subgroup