

Supplementary Table S4. The reported studies on targeted genetic alterations in young lung cancer patients

Author	Pathology	Groups	No.	Test	EGFR	KRAS	ALK	BRAF	RET	ROS1	HER2	Reference
Ting Ye, et al.	AC	≤40 years	36	non-NGS	52.8%	8.3%	5.6%	0.0%	2.8%	/	0.0%	PMID: 25364516
		>40 years	87	non-NGS	63.3%	3.4%	4.6%	3.4%	1.1%	/	2.3%	
Kosuke Tanaka, et al	AC	≤40 years	81	non-NGS	29.6%	2.5%	40.7%	0.0%	2.5%	2.5%	4.9%	PMID: 28177518
		>40 years	1665	non-NGS	45.3%	9.9%	4.2%	/	/	/	/	
Barbara Gitlitz, et al.	AC	≤40 years	71	NGS	24.0%	/	45.0%	/	3.0%	7.0%	3.0%	2015 WCLC: P1.49
Chiara Catania, et al.	AC	≤40 years	34	non-NGS	14.7%	14.7%	26.5%	/	/	/	0.0%	PMID: 25832878
Osamu Nagashima, et al.	AC	≤40 years	12	non-NGS	33.3%	/	41.7%	/	/	/	/	PMID: 23372947
Christopher J. VandenBussche, et al.	AC	≤50 years	/	non-NGS	20.0% (10/50)	25.5% (13/51)	11.6% (5/43)	/	/	/	/	PMID: 25288236
Lucia Kim, et al.	AC	≤40 years	31	non-NGS	22.6%	/	3.2%	/	/	/	/	PMID: 22969248
		>50 years	261	non-NGS	24.9%	/	5.0%	/	/	/	/	
Chia-Hung Hsu, et al.	NSCLC	≤45 years	1074	non-NGS	52.5%	/	/	/	/	/	/	PMID: 27191886
		>45 years	20462	non-NGS	60.6%	/	/	/	/	/	/	
Shang-Gin Wu, et al.	AC	≤50 years	161	non-NGS	57.8%	/	/	/	/	/	/	PMID: 28717642
		>50 years	878	non-NGS	66.1%	/	/	/	/	/	/	
Stefania Scarpino, et al.	AC	≤40 years	/	non-NGS	17.4% (4/23)	/	30.4% (7/23)	/	/	18.2% (4/22)	/	PMID: 27237034
		41-50 years	/	non-NGS	10.9% (6/55)	/	13.0% (6/46)	/	/	0.0% (0/24)	/	
		>50 years	/	non-NGS	16.3% (116/711)	/	6.0% (34/568)	/	/	1.2% (4/330)	/	
		Total	/	non-NGS	16.0% (126/789)	/	7.4% (47/637)	/	/	2.1% (8/376)	/	
^a Adrian G. Sacher, et al.	NSCLC	<40 years	/	non-NGS	32.1% (25/78)	9.1% (6/66)	19.1% (13/68)	0.0% (0/62)	/	5.6% (3/54)	1.6% (1/63)	PMID: 26720421
		40-49 years	/	non-NGS	34.0%	13.3%	12.8%	0.5%	/	1.9%	5.2%	

			(80/235)	(28/210)	(26/203)	(1/195)		(3/154)	(10/192)
≥50 years	/	non-NGS	24.6%	29.2%	3.0%	1.6%	/	1.2%	2.3%
			(435/1765)	(459/1570)	(45/1512)	(23/1438)		(14/1160)	(33/1419)
Total	/	non-NGS	26.0%	26.7%	4.7%	1.4%	/	1.5%	2.6%
			540/2078	(493/1846)	(84/1783)	(24/1695)		(20/1368)	(44/1674)

^aIn this study, HER2 exon 20 and BRAF V600E were detected. AC: adenocarcinoma; NSCLC: non small cell lung cancer.