Table 5 Long-term outcomes—ground glass and screen-detected tumors

Ordered by degree of confidence that results reflect the effect of the treatment, resection type, stage

1st author year (reference)	Study characteristics					Adjustment for confounding										Confid RE Tmt effect	Adjusted OS 5yr %		Adjusted OS W/Seg *vs.* Lobe		Adjusted LCSS W/Seg *vs.* Lobe		Comments
	Source	Years	n	Lobe *vs.*	Stage [a]	Demogr F	CoMorbid	Hi stage	Time span	Q settings	Q surgery	Fav tumor	Statistical Methods	Subset	# adj for		W/Seg	Lobe	HR	P	HR	P	
Screen-detected																							
Altorki 2014 (120)	I-ELCAP	93-11	306	SL	cIA1,2								PA PQ	-	17	L	86 [b]	**89** [b]	1.5	NS	-	-	Solid, screening
Altorki 2014 (120)	I-ELCAP	93-11	347	SL	cIA								PA PQ	1	17	L	84 [b]	**91** [b]	1.3	NS	-	-	Solid, screening
Mostly GG tumors																							
Tsutani 2013 (121)	Japan x4	05-10	162 [e]	Seg	cIA								MV PM	-	6	M	**96**	87	-	NS	[-] [d]	[NS]	Many GGN
Okada 2006 (122)	Japan x3	92-01	567	Seg [c]	cIA1,2								MV	-	6	L	89 [b]	90 [b]	1.36	NS	[1.24] [d]	[NS]	Healthy pts, GGN
Zhang 2021 (123)	China x1	11-18	167	SL	cIA1,2								MV PM	1	11	L	**96**	92	0.11	NS	-	-	CTR <0.5, [f] adeno
Zhang 2021 (123)	China x1	11-18	125	SL	cIA1,2								MV PM	1	11	L	67	**89**	7.19	.02	-	-	**CTR ≥0.5**, adeno
Kodama 2016 (124)	Japan x1	97-10	138 [e]	Seg [g]	cIA1,2								MV PM	-	6	VL	**97**	90	-	NS [g]	[1.99] [d]	[NS]	Excluded pure GGN
Chiang 2020 (125)	China x1	11-16	568 [e]	SL	cIA								MV PM	-	4	VL	99	98	-	-	-	-	CTR < 0.5 in 56%
Okada 2014 (126)	Japan x1	05-?	200 [e]	Seg	cIA								MV PM	-	6	VL	**94**	84	0.68	NS	-	-	Adenocarcinoma
Hwang 2015 (127)	S Korea x1	05-13	188 [e]	Seg [g]	cI-II								PM	-	7	VL	[94] [h]	[96] [h]	-	NS [g]	-	-	Many GGN

Inclusion criteria: studies using multivariate or propensity adjustment to compare wedge resection or segmentectomy *vs.* lobectomy, 2000–21, >50 pts per arm, ground-glass or screen-detected tumors. The HR reference is lobectomy, i.e., HR >1 reflects worse outcome compared with lobectomy. Bold highlights better outcome (>2-point difference); Red font highlights accrual occurring primarily before 2000; Light green shading highlights statistically significant difference.

Legend for adjustment for confounding: Demogr F, demographic factors (age, sex, socioeconomic); CoMorbid, comorbidities; Hi stage, occult stage inaccuracy due to differences in extent of assessment; Time span, adjustment for changes during the study period or differential use of the interventions; Q settings, discrepancy in the facilities or settings performing the interventions; Q Treatmt, quality of the treatment (e.g., margin distance, adjuvant therapy); Fav tumor, selection of less aggressive tumors for an intervention; Statistical methods, methods used to adjust for confounding; Subset, additional subset or sensitivity analyses; # adj for, number of factors adjusted for; Conf RE tmt effect, Confidence that results reflect the effect of the treatment *vs.* confounding factors. MV, multivariable model (e.g., Cox regression); PA, propensity score adjustment; PM, propensity matching; PQ, analysis of propensity score quintiles

Color code:	Categories of confounding	Addressed	Neutral (likely little effect)	Limited concern	Moderate concern	High concern	Clearly confounded
	Confidence RE treatment effect	VH-very high	H-high	M-moderate	L-low	VL-very low confidence	

[a], 8th edition stage (reported stage is translated into current 8th edition nomenclature for the sake of uniformity and contemporary application); [b], unadjusted results; [c], predominantly (≥80%); [d], disease free survival (shown in brackets because it is not fully comparable to LCSS); [e], matched pairs (total); [f], excluded pure GGN; [g], ~50% were "lobe-like" segments (left upper tri-segmentectomy, lingulectomy or basilar quadri-segmentectomy); [h], 3-year survival (shown in brackets because it is not comparable to 5-year OS).

Adeno, adenocarcinoma; CTR, consolidation/tumor ratio (solid size on lung windows/whole tumor size); GGN, ground glass nodule; HR, hazard ratio; I-ELCAP, International Early Lung Cancer Action Project; LCSS, lung cancer specific survival; Lobe, lobectomy; NS, not significant; OS, overall survival; pts, patients; Seg, segmentectomy; SL, sublobar resection; W, wedge.