

Table 3 Short-term surgical outcomes in patients with limited pulmonary reserve
Ordered by approach, extent of resection, and decreasing pulmonary reserve

	1 st author year (reference)	Study characteristics					% Op Mort ^a	% Complication		New postop O ₂ use	
		n	Years	Source	% Lobe	Criteria		All	Pulm	Temp	Chronic
VATS	Sandri 2015 (73)	141	12-14	UK x1	100	>75 y, CAD, FEV1, DLCO <50%	1.5	-	21 ^b	-	-
	Wang 2013 (76)	61	00-11	China x1	100	GOLD 3,4 (mean FEV1 38%)	3.3	-	36	-	-
	Berry 2010 (75)	47	99-07	US x1	100	ppoFEV1 ≤45%	-	-	13	-	-
	Berry 2010 (75)	28	99-07	US x1	100	ppoDLCO ≤45%	-	-	14	-	-
	Zhang 2015 (72)	350	-	Sys Rev	100	ppoFEV1 or DLCO ≤40% ^c	2.5	39	26	-	-
	Kachare 2011 (77)	47	01-09	US x1	100	ppoFEV1 or DLCO ≤40%	2.1	-	4	43	13 ^d
	Ceppa 2012 (74)	-	00-10	STS	94 ^e	ppoFEV1 ≤40%	-	-	18	-	-
	Burt 2014 (71)	210	09-11	STS	100	ppoFEV1 30-40%	0	-	13 ^b	-	-
	Burt 2014 (71)	127	09-11	STS	100	ppoDLCO 30-40%	1.7	-	14 ^b	-	-
	Burt 2014 (71)	58	09-11	STS	100	ppoFEV1 20-30%	3	-	12 ^b	-	-
	Burt 2014 (71)	24	09-11	STS	100	ppoDLCO 20-30%	2.9	-	16 ^b	-	-
Open	Berry 2010 (75)	40	99-07	US x1	100	ppoFEV1 ≤45%	-	-	45	-	-
	Berry 2010 (75)	27	99-07	US x1	100	ppoDLCO ≤45%	-	-	37	-	-
	Zhang 2015 (72)	257	-	Sys Rev	100	ppoFEV1 or DLCO ≤40% ^c	7.8	58	46	-	-
	Kachare 2011 (77)	23	01-09	US x1	100	ppoFEV1 or DLCO ≤40%	4.3	-	21	44	22 ^d
	Lau 2010 (78)	35	97-09	UK x1	100	ppoFEV1 ≤40%	14	-	51	-	-
	Ceppa 2012 (74)	-	00-10	STS	94 ^e	ppoFEV1 ≤40%	-	-	23	-	-
	Burt 2014 (71)	260	09-11	STS	100	ppoFEV1 30-40%	3.5	-	22 ^b	-	-
	Burt 2014 (71)	148	09-11	STS	100	ppoDLCO 30-40%	4.4	-	18 ^b	-	-
	Burt 2014 (71)	45	09-11	STS	100	ppoFEV1 20-30%	7.5	-	22 ^b	-	-
Burt 2014 (71)	30	09-11	STS	100	ppoDLCO 20-30%	5.5	-	21 ^b	-	-	
Mixed open/VATS	Taylor 2014 (79)	206	99-11	US x1	100	ACOSOG high risk ^f	0.5	-	[10] ^g	-	-
	Puri 2014 (80)	117	00-10	US x1	100	ACOSOG high risk ^f	2	-	[4] ^g	-	-
	Taylor 2014 (79)	131	99-11	US x1	100	ppoFEV1 or DLCO ≤40%	0.8	-	[10] ^g	-	-
	Paul 2013 (81)	50	95-13	US x1	100	ppoDLCO ≤40%	0	30	14	8	-
	Hattori 2017 (82)	184	08-13	Japan x1	80	ACOSOG high risk ^{f,h}	1.6	45	-	18	-
	Sancheti 2016 (83)	180	09-13	US x1	68	ACOSOG high risk ^f	2.2	48	[16] ⁱ	-	-
	Puri 2014 (80)	194	00-10	US x1	60	ACOSOG high risk ^f	1	28	[5] ^g	-	-
	Fernando 2011 (84)	222	06-10	PrCT	0	ACOSOG high risk ^f	1.4	[28] ⁱ	[14] ⁱ	-	-
	Lau 2010 (78)	49	97-09	UK x1	37	ppoFEV1 ≤40%	8	-	22	-	-
	Linden 2005 ^j (85)	100	97-03	US x1	14	FEV1 ≤35%	1	36	8	11	-
Fernando 2011 (86)	27	06-10	PrCT	0	FEV1 or DLCO <30%	3.7	-	[7] ⁱ	30	0	

Inclusion criteria: studies 2000–21 of resection in patients with poor pulmonary reserve involving ≥50 patients total.

^a, 30-day or in-hospital; ^b, cardiopulmonary complication; ^c, in some cases ≤50% or 0.8 L FEV1; ^d, at 4 weeks; ^e, about 6% segmentectomies included due to coding ambiguity in a portion of the database; ^f, ACOSOG high risk: FEV1 or DLCO <50%, or 2 minor criteria including age ≥75, FEV1 or DLCO 51–60%; ^g, only pneumonia reported (in brackets because not directly comparable to rest of column); ^h, or patients with ≥3 major comorbidities; ⁱ, grade ≥3 (in brackets because not directly comparable to rest of column); ^j, included all curative intent resections (primary lung cancer, combined resection and lung volume reduction, also metastasectomy).

ACOSOG, American College of Surgeons Oncology Group; CAD, coronary artery disease; DLCO, diffusing capacity of the lung for carbon monoxide; FEV1, forced expiratory volume in 1 second; GOLD, global initiative for chronic obstructive lung disease; Lobe, lobectomy; Op Mort, operative mortality; postop, postoperative; ppo, predicted postoperative; PrCT, prospective controlled trial; pulm, pulmonary; STS, Society of Thoracic Surgery database; Sys Rev, Systematic Review and meta-analysis of studies published between 2000–2009; Temp, temporary; VATS, video-assisted thoracic surgery.