

Table 1 - Included articles

VAS= Visual Analogue Scale, VATS=Video Assisted Thoracoscopic Surgery;OT= Open Thoracotomy; PTPS= Post Thoracotomy Pain Syndrome POD=Postoperative Days, ADL= Activities of Daily living, OS=Overall Survival, DFS=Disease Free Survival

Authors, year	Study design	Results	Comments	Q
Studies regarding 5-years survival				
Lee PC, Nasar A, Port JL, Paul S, Stiles B, Chiu YL, Andrews WG, Altorki NK: Long-term survival after lobectomy for non-small cell lung cancer by video-assisted thoracic surgery versus thoracotomy. <i>Ann Thorac Surg</i> 2013, 96 (3):951-960; discussion 960-951.	Register study, retrospect analysis of prosp database, propensity scoring, comparable groups; 208 VATS, 208 OT	5-yrs OS; VATS 76.5% (CI 64.5-88.5%) OT 77.5% (CI71.0-84.0%) (p=0.672.) DFS: 61.1% (CI 47.4 – 74.8%) respectively 72.1% (CI 65.2-79.0%) (p=0.552.)	Selection bias favouring VATS, more severe pathology in OT Study time 21 yrs VATS successively introduced More lgl. identified in OT operated pts	Medium
Su S, Scott WJ, Allen MS, Darling GE, Decker PA, McKenna RJ, Meyers BF: Patterns of survival and recurrence after surgical treatment of early stage non-small cell lung carcinoma in the ACOSOG Z0030 (ALLIANCE) trial. <i>J Thorac Cardiovasc Surg</i> 2013.	Secondary observational, register study, propensity scored 66 VATS and 686 OT pts	No significant diff in any of ; overall 5 yrs survival, locoregional and distant recurrence and disease free 5 yrs survival.	T 2 tumours included.	Medium
Zhong C, Yao F, Zhao H: Clinical outcomes of thoracoscopic lobectomy for patients with clinical N0 and pathologic N2 non-small cell lung cancer. <i>Ann Thorac Surg</i> 2013, 95 (3):987-992.	Lobectomy in 157 pts, 67 VATS and 90 OT	5 yrs survival after VATS comparable to after OT (p=0.45)	Allocation not stated	Low
Studies regarding QoL, pain and shoulder function				
Wildgaard K, Ravn J, Nikolajsen L, Jakobsen E, Jensen TS, Kehlet H: Consequences of persistent pain after lung cancer surgery: a nationwide questionnaire study. <i>Acta anaesthesiologica Scandinavica</i> 2011, 55 (1):60-68.	Cross sectional questionnaire study regarding PTPS in 546 pts, 93 VATS and 453 OT. Median follow up time 22 months (range 12-26).	Prevalence of moderate pain at rest and severe pain when active was lower in the VATS group.	PTPS a problem both in VATS and OT	Medium
Nomori, H., et al. (2001). "What is the advantage of a thoracoscopic lobectomy over a limited thoracotomy procedure for lung cancer surgery?" <i>Ann Thorac Surg</i> 72 (3): 879-884	Obs study Historical controls 33 VATS pts, 33 OT pts VAS x 3 daily at POD 1-7 and 14 Analgetica requirements during POD 1-7	VATS pts had sign less pain and lower analg. requirements the first 7 days. No diff in pain at day 14.	No QoL data Short follow-up	Medium

Authors, year	Study design	Results	Comments	Q
Pu, Q., et al. (2013). "Video-assisted thoracoscopic surgery versus posterolateral thoracotomy lobectomy: A more patient-friendly approach on postoperative pain, pulmonary function and shoulder function." <u>Thoracic Cancer</u> 4(1): 84-89.	Prosp obs study Surgery at pts and surgeons choice VATS 51, OT 52 VAS evaluated preop, POD 1, 3,7, 30 and 90. Additional analgesia requirements and ADL also evaluated.	Pain at POD 7 (3.53 ±1.88 vs 4.90±1.84; p=0.000), 30 (1.90±1.30 vs 3.10±1.87; p=0.000) and 90 (1.04±1.09 vs 2.35±1.41; p=0.000). Analg. req. was sign.less in VATS (p=0.028) ADL at POD 7 (23.29 ± 3.80 vs 19.96 ± 2.99), POD 30 (27.18± 2.43 vs 24.50±2.28), POD 90 (28.90.± 1.63 vs 27.52 ± 1.42). (p=0.000)	Selection bias Low values, wide variations and small differences between groups regarding VAS. ADL significantly better in VATS on POD 7, 30 and 90.	Medium
Aoki, T., et al. (2007). "Quality of life after lung cancer surgery: video-assisted thoracic surgery versus thoracotomy." <u>Heart Lung Circ</u> 16(4): 285-289.	Obs study, 17 VATS and 16 OT pts, follow up at 3,12, 36 months using SF-36	At 36 months, VATS pts sign better in RP; role physical and RE; role emotional aspects compared to OT	33 pts only, three surgeons, surg technique up to the surgeon, no preop evaluation, VATS pts sign younger Not blinded High drop-out rate	Low
Muraoka, M., et al. (2006). "Video-assisted thoracic surgery lobectomy reduces the morbidity after surgery for stage I non-small cell lung cancer." <u>Jpn J Thorac Cardiovasc Surg</u> 54(2): 49-55.	Obs retrospective study, 43 VATS and 42 OT pts	Less pain and lower morbidity in VATS group	Obs study Historical controls High selection and reporting bias Measurements and results unclear	Low
Sugiura, H., et al. (1999). "Long-term benefits for the quality of life after video-assisted thoracoscopic lobectomy in patients with lung cancer." <u>Surg Laparosc Endosc Percutan Tech</u> 9(6): 403-408.	Prosp obs study Inkl 25 pts for VATS, 3 konverted 22 operated Control 22 cons preceding pts Evaluation of need for epidural and analg req and long term aspects of QoL	Epidural postop 3±2 vs. 7±4 days for VATS resp OT pts. Analg req sign less in VATS group (p=0,0439). Preop level of activity reached sign faster for VATS pts 2,5±1,7 months vs. 7,8±8,6 månader for OT pts (<0,0267)	Limited no pts obs study, consecutive pts. Preceding pts as controls Not validated QoL questionnaire. Major diff in time for evaluation	Low
Metaanalyses:				
Chen FF, Zhang D, Wang YL, Xiong B: Video-assisted thoracoscopic surgery lobectomy versus open lobectomy in patients with clinical stage non-small cell lung cancer: a meta-analysis. <u>Eur J Surg Oncol</u> 2013, 39(9):957-963.	Metaanalysis, 5 yrs survival after lobectomy for NSCLC stad I was reported in 8 incl studies, 1011 VATS, 1002 OT pts	Survival in favour after VATS, OR, fixed, 1.82, CI 95%=(1.43,2.31) I2= 43%. (p<0,00001)	Survival better in 4 studies and equivalent in four studies	Low