

Appendix 2 (as supplied by the authors): Demographic characteristics and ventilatory settings for patients in each study

Study*	Age, years		Weight, kg		Protocolized sedation	Protocolized weaning	Respiratory rate, per minute		Mode of ventilation		Inspired fraction of oxygen, %		Inspiratory/ expiratory ratio		Plateau airway pressure, cmH ₂ O		Duration of mechanical ventilation, h		
	PV	CV	PV	CV			PV	CV	PV	CV	PV	CV	PV	CV	PV	CV	PV	CV	
Chaney et al., 2000 [1]	59 ± 12	68 ± 9	87 ± 13	81 ± 15	Yes	Yes	16	8	VCV	VCV	100	100	1:3	1:3	17.6 ± 4.8	21.8 ± 3.5	NR	NR	
Koner et al., 2004 [2]	59 ± 10	57 ± 9.3	65 ± 4.4	70 ± 12	NR	NR	15	9	VCV	VCV	50	50	1:2	1:2	14.4 ± 2	17.5 ± 2	NR	NR	
Wrigge et al., 2004 [3]	57.5 ± 15.5	60 ± 11.5	69 ± 8.5	65 ± 9	NR	NR	Adjusted by PaCO ₂	Free	Free	30	30	NR	NR	NR	NR	NR	NR	NR	
Wrigge et al., 2005 [4]	67 ± 11	61 ± 10	66 ± 12	64 ± 9	Yes	NR	Adjusted by PaCO ₂	Free	Free	Adjusted by ARDSnet	NR	NR	18 ± 3	22 ± 3	NR	NR	NR	NR	
Zupancich et al., 2005 [5]	66.5 ± 9.8	68.7 ± 7.4	NR	NR	NR	NR	12-15	12-15	Free	Free	50	50	1:2	1:2	NR	NR	NR	NR	
Michelet et al., 2006 [6]	61 ± 10	60 ± 8.5	NR	NR	NR	Yes	Adjusted by PaCO ₂	Free	Free	50	50	NR	NR	20 ± 3.5	26 ± 3	NR	NR	NR	
Cai et al., 2007 [7]	37 ± 11	39 ± 11	58 ± 8	56 ± 5	NR	NR	Adjusted by PaCO ₂	VCV	VCV	100	100	NR	NR	NR	NR	6.9 ± 2.2	7.4 ± 3.1		
Determinant et al., 2008 [8]	62 ± 9.8	61 ± 9.5	70 ± 9.5	69 ± 10.6	NR	NR	Adjusted by PaCO ₂	VCV	VCV	40	40	1:2	1:2	NR	NR	NR	NR	NR	NR
Lin et al., 2008 [9]	55	54	55.3 ± 11.8	58.4 ± 15.7	NR	NR	Adjusted by PaCO ₂	VCV	VCV	Adjusted by PaO ₂	1:1	1:1.5	12.4 ± 2.1	21.5 ± 3.1	4.3 ± 0.9	4.2 ± 0.7			
Weingarten et al., 2010 [10]	73.8	72.1	NR	NR	NR	NR	Adjusted by PaCO ₂	VCV	VCV	50	50	1:2	1:2	NR	NR	5.1 ± 1.9	5.7 ± 1.7		
Sundar et al., 2011 [11]	66 ± 11.7	66.5 ± 11	87 ± 20	85.1 ± 19.1	Yes	Yes	Adjusted by PaCO ₂	Free	Free	Adjusted by ARDSnet	NR	NR	19.7 ± 3.6	20.4 ± 4.5	7.5	10.7			
Yang et al., 2011 [12]	58 ± 12	60 ± 10	61 ± 17	59 ± 15	NR	NR	Adjusted by PaCO ₂	PCV	VCV	50	100	1:2	1:2	16 ± 4	16 ± 4	3.9 ± 1	4.2 ± 1		
Memtsoudis et al., 2012 [13]	60 ± 15	50 ± 12	NR	NR	NR	NR	Adjusted by PaCO ₂	VCV	VCV	50	50	1:2	1:2	19 ± 2.3	23 ± 6	5.1 ± 1.1	4.6 ± 0.8		
Treschan et al., 2012 [14]	68 ± 8	68 ± 9	79 ± 16	77 ± 12	NR	NR	Adjusted by PaCO ₂	Free	Free	50	50	1:2	1:2	15 ± 3	17 ± 3	8.7 ± 5.2	8.7 ± 5.9		
Futier et al., 2013 [15]	61.6 ± 11	63.4 ± 10	71.4 ± 14.2	71.3 ± 13.9	NR	NR	Adjusted by PaCO ₂	VCV	VCV	Adjusted by PaO ₂	NR	NR	15.2 ± 2.6	16.6 ± 3.5	5.3 ± 2.3	5.7 ± 2.1			
Maslow et al., 2013 [16]	61.2 ± 14.4	69.6 ± 12.9	71.4 ± 16.8	73.9 ± 13.6	Yes	NR	14	7	VCV	VCV	Adjusted by PaO ₂	1:1.7	1:1.7	NR	NR	NR	NR		
Severgnini et al., 2013 [17]	65.5 ± 11.4	67 ± 9	NR	NR	NR	NR	Adjusted by PaCO ₂	VCV	VCV	40	40	1:2	1:2	18	16	3.2 ± 1.1	3.7 ± 1.3		
Shen et al., 2013 [18]	60.5 ± 7.3	57.2 ± 9.1	NR	NR	NR	NR	Adjusted by PaCO ₂	Free	Free	Adjusted by PaO ₂	NR	NR	NR	NR	3.6 ± 1.2	3.3 ± 1.5			
Qutub et al., 2014 [19]	41	36	75.9 ± 9.4	77.8 ± 12.8	NR	NR	Adjusted by PaCO ₂	Free	Free	50	50	1:2.5	1:2.5	NR	NR	2.3 ± 0.2	2.1 ± 0.3		

Note: CV = conventional ventilation, NR = not reported, PCV = pressure controlled ventilation, PV = protective ventilation, VCV = volume-controlled ventilation.

*See next page for references.

References

1. Chaney MA, Nikolov MP, Blakeman BP, et al. Protective ventilation attenuates postoperative pulmonary dysfunction in patients undergoing cardiopulmonary bypass. *J Cardiothorac Vasc Anesth* 2000;14:514-8.
2. Koner O, Celebi S, Balci H, et al. Effects of protective and conventional mechanical ventilation on pulmonary function and systemic cytokine release after cardiopulmonary bypass. *Intensive Care Med* 2004;30:620-6.
3. Wrigge H, Uhlig U, Zinserling J, et al. The effects of different ventilatory settings on pulmonary and systemic inflammatory responses during major surgery. *Anesth Analg* 2004;98:775-81.
4. Wrigge H, Uhlig U, Baumgarten G, et al. Mechanical ventilation strategies and inflammatory responses to cardiac surgery: a prospective randomized clinical trial. *Intensive Care Med* 2005;31:1379-87.
5. Zupancich E, Paparella D, Turani F, et al. Mechanical ventilation affects inflammatory mediators in patients undergoing cardiopulmonary bypass for cardiac surgery: a randomized clinical trial. *J Thorac Cardiovasc Surg* 2005;130:378-83.
6. Michelet P, D'Journo XB, Roch A, et al. Protective ventilation influences systemic inflammation after esophagectomy: a randomized controlled study. *Anesthesiology* 2006;105:911-9.
7. Cai H, Gong H, Zhang L, et al. Effect of low tidal volume ventilation on atelectasis in patients during general anesthesia: a computed tomographic scan. *J Clin Anesth* 2007;19:125-9.
8. Determann RM, Wolthuis EK, Choi G, et al. Lung epithelial injury markers are not influenced by use of lower tidal volumes during elective surgery in patients without preexisting lung injury. *Am J Physiol Lung Cell Mol Physiol* 2008;294:L344-50.
9. Lin WQ, Lu XY, Cao LH, et al. Effects of the lung protective ventilatory strategy on proinflammatory cytokine release during one-lung ventilation. *Ai Zheng* 2008;27:870-3.
10. Weingarten TN, Whalen FX, Warner DO, et al. Comparison of two ventilatory strategies in elderly patients undergoing major abdominal surgery. *Br J Anaesth* 2010;104:16-22.
11. Sundar S, Novack V, Jervis K, et al. Influence of low tidal volume ventilation on time to extubation in cardiac surgical patients. *Anesthesiology* 2011;114:1102-10.
12. Yang M, Ahn HJ, Kim K, et al. Does a protective ventilation strategy reduce the risk of pulmonary complications after lung cancer surgery? A randomized controlled trial. *Chest* 2011;139:530-7.
13. Memtsoudis SG, Bombardieri AM, Ma Y, et al. The effect of low versus high tidal volume ventilation on inflammatory markers in healthy individuals undergoing posterior spine fusion in the prone position: a randomized controlled trial. *J Clin Anesth* 2012;24:263-9.
14. Treschan TA, Kaisers W, Schaefer MS, et al. Ventilation with low tidal volumes during upper abdominal surgery does not improve postoperative lung function. *Br J Anaesth* 2012;109:263-71.
15. Futier E, Constantin JM, Paugam-Burtz C, et al.; IMPROVE Study Group. A trial of intraoperative low-tidal-volume ventilation in abdominal surgery. *N Engl J Med* 2013;369:428-37.
16. Maslow AD, Stafford TS, Davignon KR, et al. A randomized comparison of different ventilator strategies during thoracotomy for pulmonary resection. *J Thorac Cardiovasc Surg* 2013;146:38-44.
17. Severgnini P, Selmo G, Lanza C, et al. Protective mechanical ventilation during general anesthesia for open abdominal surgery improves postoperative pulmonary function. *Anesthesiology* 2013;118:1307-21.
18. Shen Y, Zhong M, Wu W, et al. The impact of tidal volume on pulmonary complications following minimally invasive esophagectomy: a randomized and controlled study. *J Thorac Cardiovasc Surg* 2013;146:1267-73.
19. Qutub H, El-Tahan MR, Mowafi HA, et al. Effect of tidal volume on extravascular lung water content during one-lung ventilation for video-assisted thoracoscopic surgery: a randomised, controlled trial. *Eur J Anaesthesiol* 2014;31:466-73.