Effects of dexmedetomidine infusion on inflammatory responses during one-lung ventilation in thoracoscopic surgery: a RCT

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Background and Goal of Study.

One lung ventilation (OLV) in thoracic surgery is associated with inflammatory and oxidative responses which participate in the development of lung injury. Treatment alleviating these effects remains a challenge. **Dexmedetomidine (DEX)**, an alpha-2 selective agonist, alleviates inflammatory injury in both experimental and clinical studies. In this study, we aimed to investigate effects of intraoperative DEX infusion on alleviation of OLV-induced inflammatory responses.

Materials and Methods.

Results.

	Control (N= 30)	DEX (N= 30)	p Value
Age (yr)	58.7 ± 10.1	59.0 ± 8.8	p= 0.9028
OLV duration (min)	153.6 ± 60.0	157.6 ±74.4	p= 0.8225
Advanced cancer (N; %)	7 (23.3 %)	14 (46.7 %)	p= 0.1033
Lowest intraop HR (bpm)	69.9 ± 9.0	64.9 ± 7.1	p = 0.0218
Lowest intraop MAP (mmHg)	62.7 ± 7.2	58.3 ± 7.1	p = 0.0193
Patients needed ICU (N, %)	10 (33.3 %)	5 (16.7 %)	p= 0.2326
ICU stay (day)	0.8 ± 1.7	0.2 ± 0.6	p= 0.1152
Hospital stay (day)	5.9 ± 3.1	5.6 ± 2.5	p= 0.6491
Complications per patient			
0	14 (46.7%)	11 (36.7%)	p = 0.4360
1	14 (46.7%)	15 (50%)	p = 0.7998
≥ 2	2 (6.7%)	4 (13.3%)	p = 0.3982

Conclusion: dexmedetomidine infusion during thoracoscopic surgery:

- ◆ **Pros:** Attenuated OLV-induced inflammatory responses (but not translated to clinical outcomes)
- ◆ **Cons:** Lower intraop MAP and HR (but within stable range)