

with and without pulmonary complications. Was there any difference in the fluid administration between those receiving epidural catheters and those not receiving epidurals?

A follow-up question is whether there was any difference in intraoperative/postoperative hypotension in patients receiving epidural catheters. Finally, it did not appear that intraoperative hypotension was listed as a risk factor for postoperative pulmonary complications. Did intraoperative hypotension have any effect on pulmonary complications?

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Reference

1. Arslantas MK, Kara HV, Tuncer BB, Yildizeli B, Yuksel M, Bostanci K, et al. Effect of the amount of intraoperative fluid administration on postoperative pulmonary complications following anatomic lung resections. *J Thorac Cardiovasc Surg.* 2015;149:314-20.

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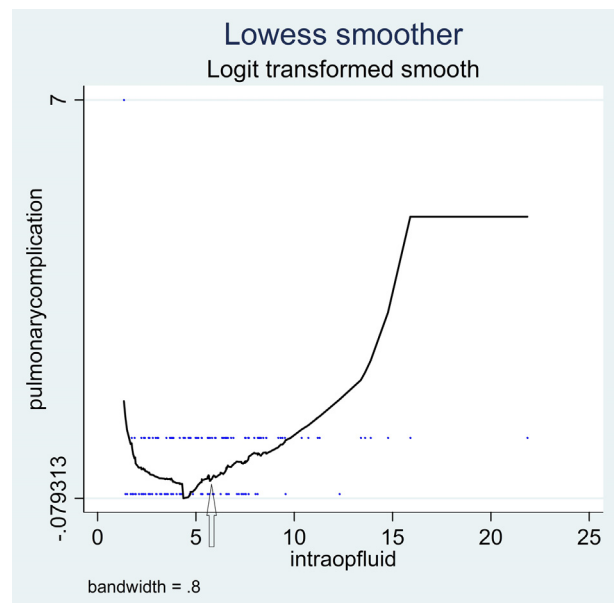


FIGURE 1. Intraoperative infusion rate greater than 6 mL/kg/h was associated with postoperative pulmonary complications. Reprinted from Arslantas MK, Kara HV, Tuncer BB, Yildizeli B, Yuksel M, Bostanci K, et al. Effect of the amount of intraoperative fluid administration on postoperative pulmonary complications following anatomic lung resections. *J Thorac Cardiovasc Surg.* 2015;149:314-20, 321.e1.

EPIDURALS, INTRAOPERATIVE FLUID ADMINISTRATION, AND HYPOTENSION

Reply to the Editor:

We thank Baciewicz for his comments and questions on our article.¹

When anatomic lung resections are performed through a posterolateral thoracotomy, thoracic epidural analgesia is a preferred method in the most centers, and its use has been associated with lower pulmonary morbidity in previous studies.²

In our cohort, patients who had epidural analgesia ($n = 72$) and who did not ($n = 67$) had received almost the same amount of crystalloid and colloid infusion (crystalloid infusion of 1663 ± 980 mL and colloid infusion of 250 ± 351 mL vs crystalloid infusion of 1646 ± 1013 mL and colloid infusion of 250 ± 422 mL, respectively) (Figure 1). Thoracic epidural catheters were placed preoperatively. After administration of a test dose (3 mL of 1.5% lidocaine with epinephrine [1:200,000]), a 5-mL bolus injection of 2.5% bupivacaine and fentanyl (1 μ g/mL) was administered, and this was followed by a continuous infusion of 5 mL/h. Postoperatively, patient-controlled analgesia was applied. We did not observe any adverse effects as a result of thoracic epidural catheter placement.

We attribute this outcome to 2 main reasons: (1) The local anesthetic dose in our study was relatively low, and thus it did not lead to high levels of sympathectomy to affect hemodynamics. (2) Vasopressors were started immediately without allowing any intraoperative hypotension.

We also believe that intraoperative hypotension is a possible cause of postoperative organ dysfunction, including pulmonary complications. Regarding our data, however, we cannot give a strong statement about the association between intraoperative hypotension and postoperative pulmonary complications, because our patients were not allowed to become hypotensive intraoperatively.

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1. Arslantas MK, Kara HV, Tuncer BB, Yildizeli B, Yuksel M, Bostanci K, et al. Effect of the amount of intraoperative fluid administration on postoperative pulmonary complications following anatomic lung resections. *J Thorac Cardiovasc Surg.* 2015;149:314-20, 321.e1.
2. Pöpping DM, Elia N, Marret E, Remy C, Tramèr MR. Protective effects of epidural analgesia on pulmonary complications after abdominal and thoracic surgery: a meta-analysis. *Arch Surg.* 2008;143:990-9; discussion 1000.

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