Reducing air-leak duration with early hypertonic glucose pleurodesis following lobectomy for lung cancer

Division of Thoracic Surgery, Western University, London (Canada)

INTRODUCTION
Air-leak following lung resection is common, and usually treated with simple observation. However, prolonged chest drainage may lead to delayed hospital discharge, catheter-related pain and increased risk of postoperative complications. This study evaluates hypertonic glucose pleurodesis to shorten the duration of post-lobectomy air-leak present on the first postoperative day.

METHODS
Ten patients with an air-leak on post-lobectomy day 1 underwent a 50% glucose pleurodesis, repeated 24 hours later if necessary. The primary outcome, air-leak rate on the third postoperative day, was recorded, along with the duration of chest drainage, hospital stay and postoperative complications. An historical group of 97 patients treated by drainage only was used as control.

RESULTS
On the third postoperative day, the air-leak rate was lower in the pleurodesis group than in the controls (20% vs 59%, p=0.0205). The pleurodesis group had also significantly shorter mean duration of air-leak (2.6 vs 6.5 days), chest drainage (4.3 vs 7.7 days) and hospital stay (5.4 vs 8.7 days). Two patients developed one complication: transient hyperglycemia following pleurodesis and one episode of atrial fibrillation.

CONCLUSION
Early pleurodesis with 50% glucose is feasible and decreases the air-leak drainage following pulmonary lobectomy. The impact of this simple and inexpensive treatment on the duration of postoperative chest drainage and associated costs, length of hospital stay, and possible complications should be confirmed in larger comparative trials.

References