

## **Summary**

Moderate to ipsilateral shoulder pain is a common complaint following thoracic surgery.

In this prospective, parallel-group study at Odense University Hospital, 76 patients (aged >18 years) scheduled for lobectomy or pneumonectomy were randomised 1:1 using a computer-generated list to receive an ultrasound-guided supraclavicular phrenic nerve block with 10 ml ropivacaine or placebo (0.9% saline) immediately following surgery. A nerve catheter was subsequently inserted and treatment continued for three days. The study drug was pharmaceutically prepacked in sequentially numbered identical vials assuring that all participants, healthcare providers and data collectors were blinded.

The primary outcome was the incidence of unilateral shoulder pain within the first 6 h after surgery. Pain was evaluated using a numerical rating scale. Nine patients out of 38 patients in the ropivacaine group and 26 patients out of 38 in the placebo group experienced shoulder pain during the first 6 h after surgery (absolute risk reduction 44% (95 % CI 22-67 %), relative risk reduction 65 % (95 % CI 41-80 %);  $p=0.00009$ ). No major complications, including respiratory compromise or nerve injury, were observed.

We conclude that ultrasound-guided supraclavicular phrenic nerve block is an effective technique for reducing the incidence of ipsilateral shoulder pain after thoracic surgery.