



## ORIGINAL ARTICLE

## Use and outcomes of venous thromboembolism prophylaxis after spinal fusion surgery

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**Abstract**

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**Keywords:** clinical epidemiology; prevention; spinal surgery; venous thromboembolism

**Summary.** *Background:* The number of spinal fusion operations in the USA is rapidly rising, but little is known about optimal venous thromboembolism prophylaxis after spinal surgery. *Objectives:* To examine the use of and outcomes associated with venous thromboembolism prophylaxis after spinal fusion surgery in a cohort of 244 US hospitals. *Patients/Methods:* We identified all patients with a principal procedure code for spinal fusion surgery in hospitals participating in the Premier Perspective database from 2003 to 2005, and searched for receipt of pharmacologic prophylaxis (subcutaneous unfractionated heparin, low molecular weight heparin, or fondaparinux) and/or mechanical prophylaxis (compression devices and elastic stockings) within the first 7 days after surgery. We also searched for discharge diagnosis codes for venous thromboembolism and postoperative hemorrhage during the index hospitalization and within 30 days after surgery. *Results:* Among 80 183 spinal fusions performed during the time period, cervical fusions were the most common (49.0%), followed by lumbar fusions (47.8%). Thromboembolism prophylaxis was administered to 60.6% of patients within the first week postoperatively, with the most frequent form being mechanical prophylaxis alone (47.6%). Of the 244 hospitals, 26.2% provided prophylaxis to  $\geq 90\%$  of their patients undergoing spinal fusion; however, 33.2% provided prophylaxis to fewer than 50% of their patients. The rate of diagnosed venous thromboembolism within 30 days after surgery was 0.45%, and the rate of postoperative hemorrhage was 1.1%. *Conclusions:* Substantial variation exists in the use of thromboembolism prophylaxis after spinal fusion surgery in the USA. Nevertheless, overall rates of diagnosed thromboembolism after spinal fusion appear to be low.

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