

# Trends in Deep Venous Thrombosis Prophylaxis and Deep Vein Thrombosis Rates After Lumbar Spine Surgery

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## INTRODUCTION:

Deep venous thrombosis (DVT) is a known source of morbidity after lumbar spine surgery. However, data on current DVT prophylaxis trends and effects on DVT reduction is scarce. Therefore, the aims of the current study were to evaluate trends in postoperative DVT prophylaxis and rates of DVT within 6 months after lumbar spine surgery.

## METHODS:

Patients who underwent lumbar spine surgery (posterior lumbar fusion, anterior lumbar fusion, lumbar laminectomy, lumbar laminotomy) from 2010 to 2019 were identified from a large national insurance database. Demographic data were collected including age, gender, Charlson Comorbidity Index, and hypercoagulability diagnoses. Postoperative medication claims were reviewed for prescribed aspirin, warfarin, enoxaparin, fondaparinux, rivaroxaban, and dabigatran. Multivariate regression was performed to determine any association between anticoagulant use and odds of developing DVT within 6 months after lumbar spine surgery, while controlling for confounding variables.

## RESULTS:

A total of 538,086 patients were included in the analysis, of which 16,732 patients (3.1%) had prescription anticoagulant medication claims. In 2010, warfarin was the most commonly prescribed anticoagulant (60.1%) while in 2019 aspirin became the most common (47.8%). Multivariate regression analysis performed showed that patients prescribed aspirin (odds ratio 0.89, p-value= 0.003) or dabigatran (odds ratio 0.75, p-value= 0.003) had lower odds of developing DVT within 6 months after lumbar spine surgery.

## DISCUSSION AND CONCLUSION:

After lumbar spine surgery, aspirin and warfarin are the most commonly prescribed DVT prophylaxis. The likelihood of DVT within 6 months after lumbar spine surgery was markedly lower in those prescribed with aspirin or dabigatran.

Figure 1: Yearly Trends in Deep Vein Thrombosis Prophylaxis After Lumbar Spine Surgery

