

# Anticoagulants and Antiplatelets for Lumbar Medial Branch Blocks

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**Myth: Therapeutic anticoagulation (AC) and antiplatelet agents (APA) should be discontinued prior to lumbar medial branch blocks (LMBB) due to hemorrhagic risks of clinically significant neurological complications.**

**Fact: A clinically significant neurological complication due to hemorrhage has never been reported in association with a LMBB procedure, when performed according to practice guidelines. Conversely, the published literature demonstrates a quantifiable risk of serious thrombotic complications when discontinuing therapeutic AC or APA for spinal injections.**

When performing a LMBB procedure with appropriate technique [1], the theoretical risk of a significant hematoma is low due to a relative lack of significant arterial vasculature located in the territory through which the needle is guided [2]. Furthermore, any potential bleeding would collect outside of the bony confines of the spinal canal, leaving the spinal nerve roots and/or spinal cord unaffected. This anatomical theory is reflected in the medical literature. To date, there has not been a report of a clinically significant neurological complication secondary to hematoma formation associated with this procedure performed in accordance with practice guidelines [3].

In *Interventional Spine and Pain Procedures in Patients on Antiplatelet and Anticoagulant Medications (Second Edition)* [4], LMBBs were re-classified from intermediate to low-risk procedures. These guidelines relating to LMBB are based on expert opinion. These guidelines acknowledge that procedures classified as low risk may be safe in the presence of a therapeutic AC or APA, while being ambiguous about continuation of the newer anticoagulants.

Lowering the risk classification for LMBB from intermediate to low risk was a direct result of the cohort study published by Endres *et al.* [5]. That study demonstrated zero hemorrhagic complications for 1,836 consecutive patients for which the AC and APA therapy was continued during LMBB. A subsequent study published by Endres *et al.* reported zero hemorrhagic complications for an additional 1,928 consecutive patients for which the AC and APA therapy was continued during lumbar facet injections (LMBB and intra-articular facet injections) [6]. A retrospective study of spine injections showed that in 260 consecutive LMBB, for which the AC and APA were not stopped, no hemorrhagic complications were noted [7]. In 1,438

interventional spine procedures in which therapeutic AC was stopped, there were nine serious thrombotic complications [0.4% (95% confidence interval (CI): 0.2-0.7%)] [5]. Furthermore, another cohort study reported that after therapeutic AC medications were stopped prior to an interventional spine procedure in 1,117 cases there were six thrombotic complications [0.5% (95%CI 0.2-1.2%)] [8]. The risk, if there is any, of a non-life-threatening soft tissue or paraspinal hematoma following LMBB must be weighed against the risk of a serious thrombotic event such as stroke, myocardial infarction, and deep vein thrombosis/pulmonary embolism [3,5-11].

## Recommendations

The decision to continue or discontinue AC or APA therapy must account for the potential complications in each scenario. To date, there are no published reports identifying hemorrhagic complications attributed to LMBB, including large cohorts in whom AC or APA therapy had been continued. Alternatively, there is a quantifiable risk of life-threatening thrombotic events

associated with discontinuation of therapeutic AC or APA for spine interventions. Interventionists must be familiar with potential soft tissue hematoma risks associated with LMBB versus thrombotic risks when deciding whether to temporarily discontinue therapeutic AC or APA for the procedure. One should balance the risk of minor soft tissue (muscular, paraspinal, subcutaneous) bruising or hematoma with the risk of a thrombotic event. The patient-specific medical indication for therapeutic AC or APA should also be considered. The decision to continue or temporarily discontinue AC or APA, or alternatively, withhold the intervention should be a shared decision with the patient and prescribing physician.

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## Conclusions

The gravity of thrombotic complications far exceeds the one for soft tissue hematoma that is usually self-limited. While the individual circumstances may vary, in general the risk of ceasing AC or APA exceeds the risk of bleeding and often can be continued.

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