



St. Mary's Lake – Glacier National Park

PIC QUESTION OF THE WEEK: 4/04/11

Q: Are there any recommendations for withdrawing dabigatran and fondaparinux prior to and after neuraxial anesthesia and insertion of spinal or epidural catheters?

A: Dabigatran (Pradaxa) is an oral direct thrombin inhibitor recently approved for stroke prevention in patients with atrial fibrillation. Fondaparinux (Arixtra) is an inhibitor of factor Xa and administered subcutaneously to reduce the risk for deep vein thrombosis and pulmonary emboli in patients undergoing general surgery, hip or knee replacement, or repair of hip fracture. Use of low-molecular weight heparin (LMWH), e.g. enoxaparin, and these newer anticoagulants in the period prior to and after neuraxial anesthesia and insertion and removal of epidural catheters increases the risk of significant hemorrhage at these sites. Dabigatran should be withheld prior to invasive surgery as well as other conditions that increase the risk of bleeding. The length of time recommended for discontinuance is dependent upon the patient's renal function and risk of bleeding. Examples of *high* risk include major surgery, spinal anesthesia, advanced age, and concomitant antiplatelet therapy. Due to increased risk for stroke, therapy should be restarted as soon as possible following the procedure; however, no specific time period is suggested. The elimination half-life ($t_{1/2}$) of dabigatran is ~ 12-17 hours. It would seem reasonable to withhold dabigatran therapy for 1-2 days *after* spinal procedures, especially in those with renal dysfunction. The following table provides suggested time periods for discontinuing dabigatran prior to surgery.

Recommended Period to Withhold Dabigatran *Prior* to Surgery and Invasive Procedures*

Renal Function (CrCl)	High Risk for Bleeding	Low Risk for Bleeding
> 50 mL/min	2 to 4 days	1 day
30 to 50 mL/min	4 days	At least 2 days
< 30 mL/min	At least 5 days	2 to 5 days

* Adapted from the DRUGDEX® reference cited below.

There do not appear to be any specific time restrictions for discontinuing fondaparinux prior to invasive procedures; however, the product label contains a **Black Box Warning** stating that patients may develop spinal or epidural hematomas after undergoing neuraxial anesthesia or placement of spinal or epidural catheters. The drug's $t_{1/2}$ is similar to dabigatran (~18 hours), thus it may be appropriate to discontinue therapy in a manner similar to that of dabigatran. Some recommend that fondaparinux be resumed *no less* than two hours after neuraxial surgical procedures, but also caution that a minimum of six to eight hours be considered in high risk patients. Adherence to some *general* dosing guidelines may reduce the risk of complications for both dabigatran and fondaparinux in patients undergoing spinal procedures.

References:

- Dabigatran.. In: DRUGDEX® System [Internet database]. Greenwood Village, Colo: Thomson Reuters (Healthcare) Inc. Updated periodically.
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- AHFS Drug Information 2011. Amer Soc Health-Syst Pharm; Bethesda, MD. 2011.

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