



Oxbow Bend, Grand Tetons National Park, Wyoming

PIC QUESTION OF THE WEEK: 8/9/10

Q: Can you describe the anticoagulant properties of pentosan and how long should it be discontinued prior to elective surgery?

A: Pentosan polysulfate sodium (Elmiron®) is a sulfated polysaccharide structurally related to heparin. It is currently the only *oral* medication approved by the FDA for the management of bladder pain and discomfort associated with interstitial cystitis (IC). Interstitial cystitis is a chronic urinary tract disorder that causes pelvic pain, urinary frequency, and urgency. Adult women are most commonly affected by this condition; however, IC may affect men and women of any age. Approximately 5 to 10% of patients with IC develop lesions on the bladder wall referred to as Hunner's ulcers. Although the exact mechanism of action is unknown, it is theorized that pentosan repairs the damaged layers of protective glycosaminoglycan (GAG) that line the urothelium and provide anti-inflammatory effects. The normal dose of pentosan is 100 mg three times daily. Patients should be advised that benefits may not be observed until 3-6 months after initiation of therapy. Pentosan possesses a relatively good safety profile and does not interact with warfarin or other drugs. Due to its chemical similarity to heparin, questions often arise regarding its anticoagulant properties. Approximately 3% of pentosan is absorbed systemically, thus producing minimal effects on coagulation. The drug is considered to possess approximately 1/15th of the anticoagulant activity of heparin, thus its combined use with other anticoagulant, antiplatelet, or thrombolytic agents should be undertaken with some caution and the patient closely monitored for evidence of bleeding. Administration of pentosan has rarely been associated with thrombocytopenia, and platelets generally increase within a few days after discontinuing the medication. Rare cases of heparin-induced thrombocytopenia and thrombosis have been reported with this compound. When bleeding is a risk, patients with IC can be effectively treated with cyclosporine or intravesicular administration of dimethyl sulfoxide. In clinical trials, patients receiving cyclosporine reported a greater reduction of pain in comparison to pentosan; however, pentosan appears to be more effective for treating other associated IC symptoms such as urinary frequency and urgency. No specific guideline has been proposed for discontinuing pentosan prior to elective surgery. The drug's elimination half-life ranges from 20 to 27 hours, thus discontinuing treatment for 5-7 days prior to any surgical procedure would appear to be reasonable for decreasing the risk of bleeding. In most patients, administration of pentosan does not result in bleeding complications.

References

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