Introduction to Anticoagulation

Anticoagulants are also known as blood thinners. They are used for prevention or treatment of blood clots, including pulmonary embolism and stroke. Some anticoagulants can be difficult to manage because there is no standard dose and each patient can respond differently. Others are dosed based on the patient’s weight or kidney function. Too little drug may lead to or worsen a blood clot, while too much may increase the risk of bleeding. Blood testing is the usual way to determine an appropriate dose for a traditional anticoagulant. In addition, there are many interactions with other medicines, herbs, supplements and even foods that must be evaluated when managing anticoagulants.

What a Pharmacist Provides

Pharmacists assist physicians in the individualized patient dosing and monitoring of anticoagulant therapies. Pharmacists assist the physician with drug selection, establishing an initial dosage regimen, making dose adjustments, ordering appropriate laboratory tests and interpreting the laboratory results to ensure that anticoagulation therapy is safe and effective. Pharmacists help patients while in the hospital as well as on an outpatient basis (e.g., anticoagulation clinic, emergency department, vascular laboratory) by counseling them on problems that could arise if they stop an old medication, take new medicines, change their diet or miss doses of their anticoagulant medication. Pharmacists also educate patients, families and caregivers regarding how medications work, how to appropriately take or administer medications and the importance of monitoring therapy. Pharmacists can also draw blood samples and interpret dosing through point-of-care testing devices. Pharmacists may even be involved in the evaluation of the patient’s insurance coverage, arranging for payment assistance and follow-up services.

A two-year study at a hospital found that a pharmacy-directed anticoagulation service boosted the quality and efficiency of care for heparin-induced thrombocytopenia (HIT) in patients using direct thrombin inhibitors. During the study there were significant improvements in target levels of time to anticoagulation, 6.4 hours versus 18.9 hours, and time within therapeutic range, 84.7 percent versus 64.4 percent, with pharmacists running the hospital’s anticoagulation service. The key improvement resulting from pharmacist oversight of anticoagulation might have been an increase in positive HIT assays from 55.4 percent to 75.6 percent. That means more patients were treated appropriately and avoided potentially serious adverse events.