



By
Nik Nikam, M.D.

Recently, Josephine, a 78 year old lady underwent an aortic valve replacement with an artificial mechanical valve prosthesis for critical narrowing of her native valve. She needs blood thinner to keep her valve from clogging-up and constant monitoring of her blood to prevent severe bleeding that might result from too much blood thinners. She does not know the difference between a 5 mg blood thinner and a 10 mg blood thinner. To her they both are the same—a pill!

This patient's story is real and accents the gravity of the situation and what we as physicians need to do and what you as a patient need to understand regarding blood thinners. We will explore what blood thinners are, why people need blood thinners, types of blood thinners, and the dangers associated with them.

Blood clotting mechanism

Whenever you get a cut, the body has a clotting mechanism to prevent you from bleeding too much. It involves a complex series of chemical reactions that is initiated by tissue injury or a

foreign object in the body. In the final analysis the platelets stick together in a fibrin mesh that is created during the clotting mechanism. It is like a plug for a leaky pot. However, when a clot develops within the veins, in the lungs, or in the heart, after valve replacement or stent placement, it can be dangerous. In order to prevent this complication we prescribe blood thinners such as warfarin, aspirin, or Plavix.

Blood thinners serve an essential life saving role in most patients with heart valves, blood clots in the legs veins or lungs, atrial fibrillation among others. In exceptional cases, they may lead to bleeding inside the brain or belly that may prove fatal. Hence, people who are on blood thinners such as warfarin need constant monitoring of the effect of blood thinner to assure that the blood is not too thin. The word, "thinner," is a figurative word used to describe how long it takes for the blood to clot rather than how thin or thick the blood actually is.

Types of blood thinners

Aspirin: It is a weak blood thinner. It irreversibly binds to the platelet receptors thus preventing the platelets from sticking to each other. It's action lasts for the lifespan of the platelets. That means in order for the body to restore its normal clotting status, it has to replace most of the platelets with new platelets that may take from 4 to 5 days. Hence, you may hear from your dentist or

surgeon to stop your aspirin 5 days prior to a major procedure. However, we generally do not recommend people to stop aspirin before cardiac surgery. It takes between 40 to 80 mg of aspirin to achieve the blood thinning effect. It is not useful in patients with blood clots in the veins, or lungs. It should be used with caution in patients with brain hemorrhage or bleeding ulcer. It is very beneficial in patients with heart disease. Be aware of aspirin hidden in combination with many cold remedies.

Plavix: It is the most frequently prescribed blood thinner following coronary stent placement. It is a much stronger blood thinner compared to aspirin. Full dose of Plavix can block anywhere from 50% to 85% of the platelet activity. Just like that of aspirin, the effect of Plavix lasts for the duration of the platelet's life. Hence, patients may have to be off Plavix for 4 to 5 days before any major surgery. However, in an emergency, the surgeon may perform the surgery with fresh platelet transfusion to prevent bleeding. Abrupt stopping of Plavix without medical supervision could lead to a fresh clot formation that may lead to a heart attack. Hence, people on Plavix should consult with their physician before discontinuing the medicine.

Persantine: It is another weak blood thinner which is sometimes used in combination with aspirin in patients with mini

strokes or transient ischemic attacks (TIA).

Warfarin: It is the Cadillac of all the blood thinners (Coumadin). And, by the same token, is also the most dangerous if used indiscriminately. It does not breakdown an existing clot. It simply prevents formation of new clots while the body's natural mechanisms dissolve the old clot over time. It can prolong the bleeding time by two to ten times the normal. Since, its effects are very unpredictable, it needs constant monitoring of blood to assure that the time it takes to clot is maintained between 2.5 to 3.5 times the normal. Now a days, patients can use portable machines to monitor prothrombin time and International Normalized Ratio [INR] to adjust their warfarin dosage with their physician's guidance. Warfarin comes in 1, 2, 2.5, 3, 4, 5, 6, 7.5, and 10 mg tablets which are color coded. Generally it is taken once a day in the evening. Never double the dose if you missed the pill one day. Non steroidal anti-inflammatory agents (NSAID) such as Motrin may make the blood too thin.

In a hospital setting, we use intravenous Heparin or subcutaneous enoxaparin in cardiac and surgical patients to prevent acute blood clot formation.

Bleeding problems

There is always a danger of bleeding with all blood thinners.

It is most serious with warfarin. Certain foods such as green leafy vegetables like spinach, broccoli, and turnip greens have vitamin K that may interfere with the warfarin effect. In other words, you may not achieve the desired blood thinning level, and you may have to increase the warfarin dosage to get the desired effect. The following week, when you do not eat those vegetables, your blood may be too thin and may pose a bleeding risk. Some herbal foods may alter the INR.

Hence, a very delicate balance has to be established between adequate blood thinning and the risk of bleeding. Most patients, who are on warfarin, need to maintain a log of the PT/INR on an ongoing basis and watch out for food ingredients that can alter those results. You should also avoid cuts from razor blades and heavy exercise that may cause internal trauma.

Management of blood thinner is a team effort between the physician and the patient. Enhancing the patient's understanding is indispensable for achieving the maximum benefit from such treatment. As per Josephine, we are doing better.

Disclosure: The information provided here is for educational purpose only. Please consult with your physician for any medical advice.

Visit www.sugarlandheartcenter.com for a more information.

P: 281-265-7567

drniknikam@gmail.com