

# A Patient's Guide to Perioperative Antithrombotic Therapy: How Your Blood-Thinning Medications Are Managed Before and After Surgery

## What Does Perioperative Mean?

- ◆ Perioperative means the time just before to just after your surgery. It is the time from when you are admitted to a hospital or clinic for a surgical procedure to when you are discharged after the procedure.

## What Is Antithrombotic Therapy?

- ◆ Antithrombotic therapy is taking blood-thinning medication to prevent blood clots that might cause a stroke, heart attack, or damage to your lungs (lung embolism). Antithrombotic medications are also called blood-thinning medications. The three blood-thinning medications prescribed most often are warfarin (Coumadin), clopidogrel (Plavix), and aspirin.

## How Are Blood-Thinning Medications Managed Before and After Surgery?

- ◆ You tend to bleed more easily when you take blood-thinning medication. You may need to stop taking blood-thinning medication before surgery and sometimes for a while after surgery. This is done to prevent any excessive bleeding due to the surgery.
- ◆ Not everyone needs to stop taking blood-thinning medication in this situation. This is a decision that will be made by your doctor or dentist.

## If You Take Warfarin, When Should You Stop Taking Warfarin Before Surgery?

- ◆ People take warfarin because of conditions that make them at risk for forming a blood clot. You may have to temporarily stop taking warfarin if the doctor believes that warfarin increases your risk of bleeding during or after surgery.
- ◆ Warfarin has long-lasting effects in the blood. This is why a patient is usually told to stop taking warfarin 5 days before a scheduled surgical procedure. Your doctor or dentist will determine exactly how long you will need to stop taking warfarin before surgery.

## If You Stopped Taking Warfarin Before Surgery, When Should You Start Taking Warfarin After Surgery?

- ◆ You can often start taking warfarin again within 24 hours after your surgery. This is because warfarin will not begin to thin the blood immediately. Warfarin must be taken for several days to reach its full blood-thinning effect. Your doctor will decide when you should start taking warfarin after your surgery.

## What About Warfarin and Dental Work?

- ◆ Minor dental work usually does not cause much bleeding. There is often no need to stop warfarin before dental work such as having a tooth pulled. Sometimes, a dentist or dental surgeon may ask you to stop taking warfarin for 2 days before more complicated work such as a tooth implant. Some dentists allow a patient to continue taking warfarin if the patient uses an antibleeding mouthwash called tranexamic acid (Amicar) before a procedure and for 1 or 2 days after a procedure.

### **What About Warfarin and Minor Skin or Eye Surgery?**

- ◆ You usually do not have to stop taking warfarin before minor skin or eye surgery. Your doctor will decide if warfarin therapy should be stopped before surgery.

### **Are You at Risk of Forming a Blood Clot While You Are Not Taking Warfarin?**

- ◆ Risk of forming a blood clot is increased during the days you are not taking warfarin. The level of risk is not the same for everyone. The doctor may prescribe “bridging therapy” to reduce your risk of clot formation if you need continued blood-thinning protection while not taking warfarin.

### **What Is Bridging Therapy?**

- ◆ Bridging therapy means giving you a different blood-thinning medication—a blood-thinning “bridge”—during the time warfarin therapy has been stopped. This alternative blood-thinning medication is heparin. It is given by injection, not by mouth. In bridging therapy, heparin is given after warfarin has been stopped. It is given until warfarin therapy has been restarted and has reached its effective blood-thinning level in the blood.
- ◆ The blood-thinning effect of heparin is shorter-acting than that of warfarin. Its blood-thinning effect is “washed out” of your blood in less than a day.

### **Should You Get Blood-Thinning Bridging Therapy?**

- ◆ Your doctor will decide if you should get bridging therapy while your warfarin therapy is stopped. Not all patients need bridging therapy. The doctor’s decision is based on your medical needs.

### **Does Bridging Therapy With Heparin Increase Your Risk of Bleeding During or After Surgery?**

- ◆ Bridging therapy with heparin can increase your risk of serious bleeding complications. Careful monitoring will reduce your risk of bleeding. Heparin is not given during a surgical procedure. It is only given before and after surgery.

### **What Is Heparin?**

- ◆ Heparin is a potent blood-thinning medication that is different from warfarin. Its blood-thinning activity is shorter-acting than that of warfarin. This makes heparin especially helpful when a short-acting blood-thinner is required.

### **What Is a Common Routine for Giving Bridging Therapy?**

- ◆ Bridging therapy is usually started 3 days before a planned surgical procedure. The last dose is usually given on the morning of the day before surgery.
- ◆ Bridging therapy is usually started again at least 24 hours after surgery.
- ◆ Bridging therapy is usually continued for 4 to 6 days after surgery until the blood-thinning effect of warfarin is back to full strength.
- ◆ Bridging therapy is not managed the same for everyone. For some patients, it is necessary to wait 2 or 3 days before starting bridging therapy again.
- ◆ Some patients should not receive bridging therapy after surgery. These may be patients who experience more bleeding than expected after surgery or patients whose surgery requires a longer period for wound healing.

### Who Gives You Heparin Injections After You Leave the Hospital?

- ◆ Heparin bridging therapy can, for some patients, continue for several days after discharge from the hospital. These patients can be taught how to give the injections to themselves. Self-injection is easy to learn and easy to administer. Patients who don't want to do this can arrange for injections to be given by a doctor or nurse at the hospital, doctor's office, or at home.

### What About Patients Who Take Aspirin and/or Clopidogrel (Plavix) to Thin Their Blood?

- ◆ Aspirin and clopidogrel (Plavix) are blood-thinning medications different from warfarin and heparin. Aspirin and clopidogrel are usually prescribed for different reasons than warfarin and heparin. Common reasons for prescribing aspirin, clopidogrel, or both are the following: (1) the patient has already suffered a heart attack or stroke caused by a blood clot; or (2) the patient has had a stent (small wire cage) placed into an artery of the heart to widen it and prevent blockage.
- ◆ Either or both of these blood-thinning medications may have to be stopped before and after surgery.

### When Are Aspirin and/or Clopidogrel Stopped Before Surgery?

- ◆ Aspirin and/or clopidogrel should be stopped 7 to 10 days before a planned surgical procedure.
- ◆ You may not have to stop taking aspirin before a minor procedure such as dental work or minor skin surgery.

### When Can Aspirin Therapy Be Restarted After Surgery?

- ◆ Most patients can start taking aspirin on the evening after surgery without increasing their risk of bleeding.
- ◆ If there was more bleeding than expected during surgery, aspirin therapy should not be restarted for 1 or 2 days after surgery. This is a decision your doctor will make.

### What if You Are Taking Both Aspirin and Clopidogrel?

- ◆ If you are taking both aspirin and clopidogrel, this is usually because the doctor believes you are at a rather high risk of forming a blood clot. The doctor may decide that one or both medications should be continued before and after surgery because of your high risk for a blood clot. If one of the medications is continued before and after surgery, it is usually aspirin. Your doctor will make these decisions and discuss them with you.



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