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The full report is titled “Low-Molecular-Weight Heparin versus Compression Stockings for Thromboprophylaxis after Knee Arthroscopy. A Randomized Trial.” It is in the 15 July 2008 issue of *Annals of Internal Medicine* (volume 149, pages 73-82). The authors are G. Camporese, E. Bernardi, P. Prandoni, F. Noventa, F. Verlato, P. Simioni, K. Ntita, G. Salmistraro, C. Frangos, F. Rossi, R. Cordova, F. Franz, P. Zucchetta, D. Kontothanassis, and G.M. Andreozzi, for the KANT (Knee Arthroscopy Nadroparin Thromboprophylaxis) Study Group.

Preventing Blood Clots after Knee Arthroscopy

What is the problem and what is known about it so far?

Some orthopedic surgical procedures, such as hip and total knee replacements, carry a high risk for blood clots in the veins of the legs (deep venous thrombosis). Pieces of these clots can travel through the bloodstream and cause blockages of arteries in the lungs (pulmonary embolism). Doctors usually give patients who have had high-risk orthopedic procedures a blood thinner after surgery to prevent leg clots and pulmonary embolism.

Knee arthroscopy is a commonly performed, low-risk orthopedic procedure. Surgeons use it to diagnose and treat problems inside the knee joint. To perform the procedure, the surgeon inserts a pencil-sized tube with a camera through a small incision. The surgeon also may insert other surgical tools through other small incisions to remove or repair damaged tissues. Most patients who have arthroscopy are home several hours after surgery. Because it is a relatively minor surgery, many experts do not routinely use blood thinners to prevent leg clots after the procedure. However, few studies have tested whether blood thinners provide more benefit than harm in patients who are having knee arthroscopy.

Why did the researchers do this particular study?

To find out whether giving patients low-molecular-weight heparin (LMWH) after arthroscopy better prevents blood clots than does wearing a support stocking.

Who was studied?

1761 adults undergoing knee arthroscopy; average age was 42 years.

How was the study done?

All patients had arthroscopy at a knee surgery clinic and returned home the same day. On that day, they were randomly assigned to receive a daily injection of LMWH for either 7 days or 14 days or to wear special support hose (a graduated compression stocking) on the operated leg for 7 days. The surgeons followed patients for several days to check for any bleeding problems. At the end of treatment, patients had leg scans (ultrasounds) on both legs to check for blood clots and answered questions about symptoms that might be related to blood clots. The researchers then followed patients with normal scans for 3 months of treatment to see if any developed symptoms or clots or died. Finally, the researchers compared the numbers of patients in each group who had died or had any of the following: pulmonary embolism, clots in the proximal deep veins of the legs, or clots in the distal deep veins of the legs that caused symptoms.

What did the researchers find?

Fewer than 1% of the patients in any of the groups had important bleeding complications. No patients died. Fewer patients who received LMWH developed clots than did those assigned to wear a compression stocking (0.9% vs. 3.2%). All of the clots the researchers found were detected in the operated leg at the initial leg scan after treatment. About half of the clots were in distal leg veins. Patients taking LMWH for 14 days did not have fewer clots than those taking LMWH for 7 days.

What were the limitations of the study?

The patients knew whether they received LMWH or wore a stocking. The stocking was stronger and tighter at the ankle than most surgical support hose. Many leg clots were in distal veins, although all of these were symptomatic.

What are the implications of the study?

Daily injections of LMWH for 1 week may prevent some blood clots after knee arthroscopy.

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