Treatment of Venous Thromboembolism: Recommendations from the American College of Physicians and the American Academy of Family Physicians

Summaries for Patients are a service provided by *Annals* to help patients better understand the complicated and often mystifying language of modern medicine.

The full reports are titled "Management of Venous Thromboembolism: A Clinical Practice Guideline from the American College of Physicians and the American Academy of Family Physicians" and "Management of Venous Thromboembolism: A Systematic Review for a Practice Guideline." They are in the 6 February 2007 issue of *Annals of Internal Medicine* (volume 146, pages 204-210 and pages 211-222). The first report was written by V. Snow, A. Qaseem, P. Barry, E.R. Hornbake, J.E. Rodnick, T. Tobolic, B. Ireland, J.B. Segal, E.B. Bass, K.B. Weiss, L. Green, D.K. Owens, and the Joint American College of Physicians/American Academy of Family Physicians Panel on Deep Venous Thrombosis/Pulmonary Embolism; the second report was written by J.B. Segal, M.B. Streiff, L.V. Hofmann, K. Thornton, and E.B. Bass.

Who developed these guidelines?

The American College of Physicians (ACP) and the American Academy of Family Physicians (AAFP) developed these recommendations.

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

In venous thromboembolism (VTE), blood clots form in veins. The clots often form in leg veins, a condition called deep venous thrombosis (DVT). Pieces of these leg clots can break off and travel to the lungs, a serious condition called pulmonary embolism. Blood thinners (anticoagulants) are the main treatment for VTE. Several options are available. Fractionated heparin must be given through a small tube placed into a vein (intravenous catheter) and requires blood tests and dosage adjustments at least daily. Warfarin is an anticoagulant that comes in pill form, but it requires testing and dose changes every few days to weeks. Low-molecular-weight heparins (LMWHs) are given by injection under the skin and do not require testing and dosage adjustments. These same drugs also treat pulmonary embolism. Compression or support stockings may help prevent chronic leg pain and swelling after DVT. Given the several options for treatment, clear recommendations would be useful.

How did the ACP and AAFP develop these recommendations?

The authors reviewed published studies about VTE treatment.

What did the authors find?

Good-quality studies showed that LMWH for DVT results in better outcomes and fewer bleeding complications than unfractionated heparin. For pulmonary embolism, LMWH is at least as good as unfractionated heparin. Using LMWH in patients' homes saves money and is at least as safe as hospital treatment for patients with appropriate support at home. Two high-quality studies that examined the use of compression stockings within 1 month of DVT showed that their use reduced chronic leg problems after DVT. Although pregnancy is an important risk factor for DVT, careful comparisons of different treatments in pregnant women are unavailable. The authors found good-quality studies about the length of VTE treatment that suggested that 3- to 6-month treatment is sufficient for a first episode of VTE in a patient without ongoing risk factors. Studies suggest that treatment after 2 or more episodes of VTE should continue for at least 12 months, perhaps longer.

What do the ACP and AAFP suggest that patients and doctors do?

Doctors should use LMWH instead of unfractionated heparin to treat DVT. Either form is appropriate for pulmonary embolism.

If patients have adequate support at home, doctors should consider treating DVT (and possibly pulmonary embolism) with LMWH without hospitalization.

Patients should use compression stockings for at least 1 year after DVT diagnosis.

Little evidence is available to guide the treatment of VTE in pregnant women. However, warfarin and other oral blood thinners can be harmful between the 6th and 12th week of pregnancy.

After a first DVT, treatment should continue for 3 to 6 months unless risk factors for clots persist. After 2 or more VTE episodes, treatment should continue for at least 12 months and possibly longer.

LMWH is effective and safe to use in the long-term treatment of VTE, especially in patients with cancer.

What are the cautions related to these recommendations?

Doctors may modify treatment for specific patients.

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