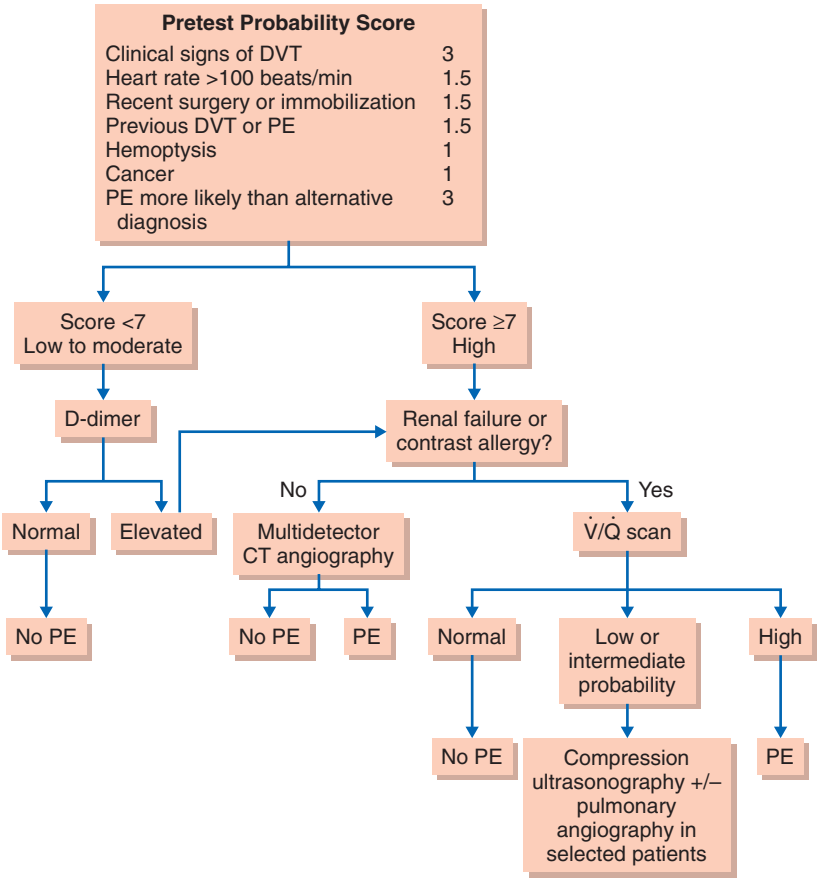

FIGURE 12-6 Diagnostic algorithm for patients with suggested pulmonary embolism (PE). CT, Computed tomographic; DVT, deep vein thrombosis; V̇/Q̇ scan, ventilation-perfusion scan.

patients with advanced chronic kidney disease, in whom LMWH use is generally prohibited.

The time for which anticoagulation should be continued after an acute PE or DVT episode depends on the presence of reversible risk factors for recurrent VTE. Patients with a history of trauma or surgery typically have a low rate of recurrent VTE; therefore, warfarin can be discontinued after 3 months of administration. Patients with cancer and VTE should be treated initially with subcutaneous fixed-dose LMWH for 3 to 6 months because of the greater efficacy of LMWH compared with warfarin in preventing recurrent thromboembolism in this setting. After this initial period, treatment with LMWH or warfarin should be continued indefinitely unless the cancer is cured. Patients with idiopathic VTE and a low risk of bleeding should be treated with warfarin for longer than 3 months, whereas those with high bleeding risk should remain on treatment for at least 3 months. Beyond the 3- to 6-month period, aspirin is an alternative to long-term warfarin and should be considered for patients who have contraindications for anticoagulation or high bleeding risk.

Venous Thromboembolism Prophylaxis

Patients who are at high risk for VTE should receive prophylaxis with subcutaneous UFH or LMWH. Patients at high risk include those who are hospitalized with acute medical illness (particularly congestive heart failure, acute respiratory illness, or acute inflammatory disease), those who are expected to be immobilized for 3 days or longer, and patients with previous VTE. Major surgery, either elective or emergent, is an important indication for VTE prophylaxis.

Subcutaneous UFH is as effective as LMWH and fondaparinux in preventing symptomatic DVT in patients undergoing general surgery, gynecologic surgery, or neurosurgery. However, LMWH, fondaparinux, and warfarin (dose-adjusted to an INR between 2 and 3) are preferred to UFH for prevention of DVT in cases of orthopedic surgery such as hip surgery or total knee replacement because their superior efficacy in this setting (level A evidence). More recently, rivaroxaban has been approved by the U.S. Food and Drug Administration for prevention of VTE after knee or hip surgery; it has a higher efficacy than LMWH in reducing risks without increasing perioperative bleeding. DVT prophylaxis should be continued for 10 to 14 days after knee surgery and for 35 days after hip surgery. Patients undergoing major cancer surgery should receive continued prophylaxis after discharge up to 28 days. Mechanical prophylaxis with intermittent pneumatic compression provides additional protection from VTE and should be administered to all surgical patients whenever possible.

ARTERIAL HYPERTENSION

Arterial hypertension affects almost one third of the adult population—75 million people in the United States and 1 billion worldwide. It is the leading cause of death in the world, the most common cause for an outpatient visit to a physician, and the most easily recognized treatable risk factor for stroke, myocardial infarction, heart failure, peripheral vascular disease, aortic dissection, atrial fibrillation, and end-stage kidney disease. Despite this knowledge and unequivocal scientific proof that treating hypertension with medication dramatically reduces its