

Pulmonary Embolism

Henri Bounameaux, MD

Venous thromboembolism (VTE) consists of a wide spectrum of clinical conditions, from asymptomatic lower limb muscle deep vein thrombosis (DVT) to massive or even fatal pulmonary embolism (PE). With an incidence of approximately 1.5/1000 per year in the community, VTE is a common disease. Moreover, it tends to recur once anticoagulant treatment has been stopped, at a rate of 10% per year during the first two years for idiopathic DVT, and then at a rate of 3% per year. Case-fatality rates of 5% (DVT) and 8-20% (PE) have been reported. These rates are underestimations because many fatal PEs are not diagnosed before death. In addition, late sequelae include the post-thrombotic syndrome and the chronic arterial pulmonary hypertension, which further adds to the considerable economic burden for our public health system.

In the past two decades, VTE has been recognized as an age-dependent multi-causal (genetically and environmentally driven) disease. Recent improvement in its management include 1) an improved sequential diagnostic work-up with standardized clinical probability assessment, D-dimer measurement, and multi-slice computed tomography (suspected PE) or compression ultrasonography (suspected DVT); 2) a stratification of the severity of PE in low, intermediate and high-risk PE with worsening prognosis; 3) possibly individualized or improved treatment (from outpatient treatment to increased use of thrombolysis; emergence of new oral anticoagulants, still under evaluation in this indication; and tailoring of the duration of anticoagulant therapy after a first episode of VTE).

Because hospital stay and after-discharge periods are at particularly high risk of developing VTE, and because prophylactic methods, mainly pharmacological but also mechanical, have a proven efficacy in reducing that risk, they should be employed more systematically. VTE has been widely recognized as a global patient safety issue, and important initiatives have been undertaken in several countries to reduce its burden.