

About Deep Vein Thrombosis (DVT)



Fast facts

- ◆ **Venous blood clots can present in two ways:**
 - 1. Deep vein thrombosis (DVT) – a blood clot in a deep vein, usually in the legs, that partially or totally blocks the flow of blood**
 - 2. Pulmonary embolism (PE) – a blood clot which breaks apart and travels to the lungs, ultimately blocking a blood vessel there and is often fatal**
- ◆ **It is estimated that almost 685,000 DVT events occur in the EU each year²**
- ◆ **DVT can have burdensome and costly consequences such as an increased risk of recurrent clots¹ and post-thrombotic syndrome²**
- ◆ **Oral medicines that directly inhibit Factor Xa represent a potential new era of therapy to treat DVT**

What is Deep Vein Thrombosis (DVT)?

Deep vein thrombosis (DVT) is the formation of a blood clot in a deep vein that partially or totally blocks the flow of blood. Not visible through the skin, deep leg veins are the larger veins that go through the muscles of the calf and thighs.¹

There are nearly 2 million DVT episodes in the US³ and it is estimated that almost 685,000 DVT events occur in the EU each year.² The classical symptoms of DVT include pain, swelling, and redness of the area and dilation of the surface veins. The skin may also feel warm to the touch.¹ However, sometimes there are no symptoms and a DVT is only diagnosed if a complication, such as pulmonary embolism (PE), occurs.¹

The majority of patients suffering from a venous blood clot will experience a DVT alone, however in around one-third of patients it will progress to a potentially fatal pulmonary embolism⁴, where the blood clot breaks apart and travels to the lungs, ultimately blocking a blood vessel there. Mortality due to a PE is increased in those patients suffering from congestive heart failure, chronic obstructive pulmonary disease and cancer.⁴

Even in the absence of a PE, DVT alone can have burdensome and costly consequences such as post-thrombotic syndrome³ and an increased risk of recurring blood clots.¹ Patients

with venous blood clots have also been observed to have a substantially increased long-term risk of subsequent cardiovascular events such as heart attack and stroke.⁵

What causes DVT?

The most common risk factor for DVT is recent surgery.¹ Other risk factors include:¹

- ◆ Immobilization
- ◆ Advanced age
- ◆ Obesity
- ◆ Pregnancy
- ◆ Taking certain medications
- ◆ Damage to the inside lining of the vein
- ◆ Previous clots
- ◆ Cancer

How is a DVT diagnosed?

Two sets of tests are commonly used to diagnose DVT:¹

- ◆ *Imaging Tests*

Imaging tests, such as ultrasounds, are used to detect venous blood clots. This is done by scanning the suspected area (such as the leg) to detect blockages in the veins
- ◆ *D-dimer Blood Test*

Levels of D-dimer, a small protein fragment present in the blood after a blood clot is formed, can signal the presence of a DVT. If the blood test is positive and D-dimer levels are high, an imaging test is carried out to confirm that a DVT is present



Current treatments and clinical challenges

The treatment goals for DVT are to:¹

- ◆ Manage the acute crisis and prevent complications, such as PE
- ◆ Reduce the risk of recurrence
- ◆ Reduce the risk of post-thrombotic syndrome

The current standard of care to treat DVT is injectable heparin followed by an oral vitamin K antagonist (VKA).⁶ These agents, although effective if managed properly, have significant drawbacks including:

- ◆ Complexities of drug administration (injectable heparin)⁷
- ◆ Routine monitoring and dose adjustments (VKAs)⁸
- ◆ Numerous food and drug interactions (VKAs)⁸

References

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- 5 Toft Sørensen H. Venous thromboembolism and subsequent hospitalisation due to acute arterial cardiovascular events: a 20-year cohort study. *Lancet.* 2007;370: 1773-79
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- 7 Turpie AG. Oral, direct factor Xa inhibitors in development for the prevention and treatment of thromboembolic diseases. *Arterioscler Thromb Vasc Biol.* 2007;27:1238-1247
- 8 Lassen MR and Laux, Emergence of new oral antithrombotics: a critical appraisal of their clinical potential. *Vasc Health Risk Manag.* 2008;4(6):1373-1386

The promise of a new era in anticoagulation

The disadvantages of current treatments have led to the development of alternative therapies and management strategies that offer favourable benefit-risk profiles and convenience.

Oral medicines targeting single components of the coagulation pathway (Factor Xa and thrombin) represent a potential new era of therapies to treat DVT.

To learn more about thrombosis please visit www.thrombosisadviser.com



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