

Reasons of development for blood clots: Deep Venous thrombosis and Pulmonary Embolism, symptoms and treatment

Blood clots can form inside the blood vessels. We will discuss the common reasons for development of blood clots in blood vessels, its common symptoms and investigations that may be required along with the treatment needed. If the clots form in the deep veins e.g., in legs, it is called deep venous thrombosis. When clot is present inside blood vessels of the lungs, it is called pulmonary embolism. This disease is also called as venous thromboembolic disease or VTE.

Pulmonary embolism is the development of a blood clot in blood vessels of the lungs. As the blood returns from whole body and go to the right heart which pumps the blood through the lungs to get oxygen. If there is any blood clot coming along with the blood flow into the heart, that will be pumped into the vessels of the lungs and can cause blockage. Most of these clots are formed in the legs or in the pelvic area. With movement, the clot dislodges and travel with the blood flow, to cause blockage in the lungs.

Reasons of blood clot or Venous thromboembolic disease:

The most common reason for development of blood clot is postoperative complication of any major surgery or prolonged stay in the hospital with acute medical problem. In some cases, even despite extensive investigation, no underlying reason can be found for blood clots. There are few autoimmune conditions including anti-phospholipid antibody syndrome, which increases the risk of blood clot. There are also prothrombotic conditions or diseases which can increase the risk of developing blood clots. Systemic cancers are also associated with increased risk of blood clots.

Long travel in the planes, car or train also increases the risk of development of blood clots. Taking contraception medicines also increases the risk.

Symptoms and signs of venous thromboembolic disease:

Most commonly the clots develop in the legs or in the pelvic vein, patient may have unilateral and very occasionally bilateral leg swelling along with redness and pain. This clot can travel up to the heart to the lungs. Patients with moderate to large pulmonary embolism present with acute one sided chest pain which can be bilateral or central in nature, breathlessness, hemoptysis, or symptoms of dizziness and occasional syncopal symptoms.

If there is a large blood clot blocking the whole of blood flow in the lungs, patient can develop cardiac arrest very quickly and can die of this fatal condition.

Investigation of blood clots:

To confirm the diagnosis of blood clot in the lungs, patients would require most likely a CTPA which is a CT scan of the lung vessels done with the contrast agent. It confirms the diagnosis of pulmonary embolism. Patients at low risk may be considered for D dimer blood test prior

to having a scan. Some patients may not be able to have a scan, either due to allergy to the contrast agent used in CTPA or poor kidney function and they may need VQ scan of the lungs.

Sometimes, we do doppler ultrasound of the legs to confirm clots in the leg veins.

Patients with very extensive venous thromboembolic disease or recurrent blood clots, should be investigated further for any underlying reasons for blood clot especially to exclude cancers which can be associated with increased risk of thromboembolic disease in elderly population.

Treatment of thromboembolic disease:

Acute treatment of thromboembolic disease require patient to be assessed in emergency department and hospitalized for few days. The treatment consists of anticoagulation medications which stops new clot formation inside the blood vessel.

In acutely unwell, we may need to give them thrombolysis medication which breaks down the already formed clot in the blood vessels.

Long term treatment of pulmonary embolism or DVT require anticoagulation with oral anticoagulation medication (warfarin, apixaban, rivaroxaban or dabigatran).

Prevention of venous thromboembolic disease:

All patients who are sick and required hospitalization should receive prophylactic anticoagulation medication. During long haul flight or long travel in the train or car, people should try to take break and walk, to reduce the risk of developing blood clots.

Australian Polyclinic,

CCA Phase 5 DHA, Lahore
0311 057 3333

Dr G Sarwar Chaudhry

MBBS (King Edward Medical College)
Fellow Royal Australasian College of Physicians (FRACP Australia)
Fellow American College of Chest Physicians (FCCP)
Conjoint Lecturer, University of Newcastle, NSW, Australia

Consultant Pulmonologist and Sleep Physician

Consultant General Physician

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