About Venous Arterial Thromboembolism (VAT)

What is Venous Arterial Thromboembolism (VAT)?

Venous arterial thromboembolism (VAT) is caused when all, or part of a blood clot breaks away (an embolus) and is moved by the blood stream to block a vein or artery. This obstruction can result in damage to vital organs, because the tissue beyond the blockage no longer receives nutrients and oxygen.

VAT is responsible for increasing morbidity and mortality across a broad range of acute and chronic blood-clotting disorders.

In the EU, more people die from blood clots than from AIDS, breast cancer, prostate cancer and traffic accidents combined[1]

VAT Encompasses Two Serious Conditions

- Venous Thromboembolism (VTE)
  - Pulmonary Embolism (PE)
  - Deep Vein Thrombosis (DVT)
- Arterial Thromboembolism
  - Stroke
  - Heart Attack

Venous Thromboembolism (VTE)

VTE is the **third most common cardiovascular disease worldwide[2]** and is **the most common cause of hospital death[3]**

VTE encompasses two conditions: Deep vein thrombosis (DVT) is a blood clot that forms in the veins that lie deep within the muscles, usually in the leg or pelvis. If all or part of the DVT breaks off and the blood clot moves to block a vessel in the lungs, it is known as a **pulmonary embolism (PE)**[4], which can be rapidly fatal.

Symptoms of DVT include:
Pain, swelling, redness of the affected area, and the dilation of surface veins. The skin may also be warm to the touch

Symptoms of PE include:
Acute shortness of breath, chest pain and a rapid heart rate; some people may also cough blood

Who is at Risk of VTE?

- Patients undergoing surgery such as major orthopaedic surgery for hip or knee replacement or major surgery for cancer
- Patient-related risk factors include inherited thrombophilia, advanced age, obesity, prior VTE and varicose veins[4]
- Patients admitted to hospital for an acute medical condition

Arterial Thromboembolism

- Arterial thromboembolism occurs when oxygenated blood flow from the heart to another part of the body, via an artery, is interrupted by a blood clot
  - If this occurs in an artery supplying blood to the brain it can lead to a stroke, which can be severely debilitating or fatal
  - If it occurs in a coronary artery, it can lead to acute coronary syndrome (ACS), which includes conditions such as myocardial infarction (heart attack) and unstable angina

Who is at Risk for Arterial Thromboembolism?

- Patients with atrial fibrillation (AF) and those who have survived a previous episode of ACS
- The essential underlying condition for ACS is the build-up of plaque in the inner walls of coronary arteries that narrows the arteries. This process is called atherosclerosis. When atherosclerotic plaque ruptures or erodes it could lead to a sudden and critical reduction of blood flow

How is VAT Prevented and Treated?

VAT requires active or preventative treatment to avoid potentially serious or fatal patient outcomes.

1930s → **Traditional anticoagulants have been used for more than 70 years to manage VAT disease** → **2000s**

However, they are associated with significant drawbacks such as regular blood coagulation monitoring or the need for injections.

Novel oral anticoagulants (OACs) can overcome the limitations of traditional anticoagulants to prevent and treat these potentially deadly blood clots.

Benefits of novel OACs include[5]:

- Predictable anticoagulation without the need for routine coagulation monitoring or frequent dose adjustment
- Low risk of drug-drug interactions
- No significant food interactions

Xarelto® (rivaroxaban) is a highly effective, novel oral anticoagulant developed to prevent and treat dangerous blood clots by selectively targeting Factor Xa, an enzyme which acts at the pivotal stage in blood-clotting[5]

About 'Xarelto'

Rivaroxaban is the most broadly indicated novel oral anticoagulant and is marketed under the brand name Xarelto®. To date, 'Xarelto' is approved for five indications across seven distinct areas of use, consistently protecting patients across more venous and arterial thromboembolic (VAT) conditions than any other novel OAC:

- The prevention of stroke and systemic embolism in adult patients with non-valvular atrial fibrillation (AF) with one or more risk factors
- The treatment of deep vein thrombosis (DVT) in adults
- The treatment of pulmonary embolism (PE) in adults
- The prevention of recurrent DVT and PE in adults
- The prevention of venous thromboembolism (VTE) in adult patients undergoing elective hip replacement surgery
- The prevention of venous thromboembolism (VTE) in adult patients undergoing elective knee replacement surgery
- The prevention of atherothrombotic events (cardiovascular death, heart attack or stroke) after an Acute Coronary Syndrome in adult patients with elevated cardiac biomarkers when co-administered with acetylsalicylic acid (ASA) alone or with ASA plus a thienopyridine (clopidogrel or ticlopidine)

Whilst licences may differ from country to country, across all indications 'Xarelto' is approved in more than 120 countries.

Rivaroxaban was discovered by Bayer HealthCare, and is being jointly developed with Janssen Research & Development, LLC. 'Xarelto' is marketed outside the U.S. by Bayer HealthCare and in the U.S. by Janssen Pharmaceuticals, Inc. (a Johnson & Johnson Company).

Anticoagulant medicines are potent therapies used to prevent or treat serious illnesses and potentially life threatening conditions. Before initiating therapy with anticoagulant medicines, physicians should carefully assess the benefit and risk for the individual patient.

Responsible use of 'Xarelto' is a very high priority for Bayer, and the company has developed a Prescribers Guide for physicians and a 'Xarelto' Patient Card for patients to support best practice. To learn more, please visit: https://prescribe.xarelto.com.

To learn more about thrombosis, please visit www.thrombosisadviser.com
To learn more about VAT, please visit www.VATspace.com
To learn more about 'Xarelto', please visit www.xarelto.com

References

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