



# About Acute Coronary Syndrome (ACS)

## What is Acute Coronary Syndrome (ACS)?

Acute coronary syndrome (ACS) is a common and life-threatening condition which occurs when a coronary artery is blocked by a blood clot, known as a thrombosis, reducing blood supply to the heart. This disruption of blood flow can directly cause myocardial infarction (a heart attack), or cause severe pain in the chest (unstable angina) indicating that a heart attack may soon occur.

- ♦ ACS covers a range of acute cardiac events, including unstable angina, a condition where the heart does not receive enough blood or oxygen, and two types of myocardial infarction (non-ST-segment elevation myocardial infarction and ST-segment elevation myocardial infarction)
- ♦ ACS is a complication of coronary heart disease which is the single most common cause of death worldwide<sup>1</sup> and one of the most prevalent non-communicable diseases in the world<sup>2</sup>

The essential underlying condition for ACS is the build-up of plaque in the inner walls of coronary arteries that narrows the arteries, sometimes decreasing the amount of blood flow to the heart. This process is called atherosclerosis. If plaque from the wall of a coronary artery ruptures, a blood clot can form at the site of the rupture. This arterial clot is formed through a dual pathway (platelet activation and thrombin generation). If the clot is large enough to block the vessel and critically reduce blood flow, the heart muscle can be damaged<sup>3</sup>.

## Who is at Risk of ACS?

There are a variety of risk factors for the build-up of atherosclerosis, potentially resulting in ACS, including<sup>4,5</sup>:

- ♦ A family history of heart attack or unstable angina
- ♦ High cholesterol
- ♦ High blood pressure
- ♦ Diabetes
- ♦ Tobacco use

Recurrent ACS is a significant issue. Patients who survive an ACS event are at high risk of experiencing a recurrent event and have a higher rate of mortality<sup>5</sup>.

- ♦ Up to 30% of patients who leave the hospital after an ACS event are re-admitted within six months<sup>6</sup>

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## What is the Disease Burden of ACS?

- ♦ Coronary heart disease kills approximately 7.2 million people worldwide each year<sup>1</sup>, many of which are attributable to ACS
- ♦ Annually, 3.8 million ACS cases are diagnosed in major global markets, resulting in approximately 400 million treatment-days post-hospital<sup>7</sup>
- ♦ ACS is associated with approximately 2.5 million hospital admissions worldwide and is a major cause of mortality and morbidity in Western countries<sup>8</sup>

## What is the Treatment Goal for ACS?

The main treatment goal for ACS patients is to prevent death, stroke or recurrent myocardial infarction by removing an existing blood clot, and subsequently stopping the formation of new clots.

- ♦ The current gold standard for secondary prevention after an ACS is the dual antiplatelet therapy of aspirin plus a drug class known as thienopyridine, of which clopidogrel is the most prescribed. Dual antiplatelet therapy has improved effectiveness over aspirin alone<sup>9</sup>. The combination of these two treatments, used for a period of six months to one year, is widely recommended for ACS patients.
- ♦ Advances in antiplatelet therapy improve outcomes, but standard antiplatelet therapy addresses only one source of clot formation, leaving ACS patients exposed to continued risk of mortality and major CV events after hospital discharge. In fact, one in 10 patients will have another major CV event (CV death, myocardial infarction (MI), stroke) within the first year after the initial event<sup>9,10</sup>
- ♦ Since thrombin levels remain elevated long after the acute phase, secondary prevention of ACS should target both pathways of clot formation. Antiplatelets and anticoagulants have complementary mechanisms of actions and have been shown to improve outcomes when combined, providing more complete protection against long-term clot formation.

Treatment consisting of combined antiplatelet and anticoagulant therapies can be considered for patients with ACS.<sup>11</sup>

- ♦ Latest ESC Guidelines (updated August 2012) recommend that treatment with 'Xarelto' 2.5 mg be considered for patients with STEMI who are at low bleeding risk and receiving dual antiplatelet therapy – aspirin and clopidogrel<sup>11</sup>



- ◆ In December 2011, rivaroxaban was submitted for EU marketing authorisation for secondary prevention after an ACS. Additionally, a supplemental New Drug Application (sNDA) was submitted to the U.S. Food and Drug Administration (FDA) for approval of rivaroxaban to reduce the risk of cardiovascular events in patients with ACS
- ◆ Xarelto® (rivaroxaban) protects patients from blood clots across more venous and arterial thromboembolic diseases than any other novel oral anticoagulant.

## References

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## About Xarelto® (Rivaroxaban)

Rivaroxaban is the most broadly indicated novel oral anticoagulant and is marketed under the brand name Xarelto®. To date, Xarelto has been approved for use in the following venous arterial thromboembolic (VAT) indications:

- The prevention of stroke and systemic embolism in adult patients with non-valvular atrial fibrillation (AF) with one or more risk factors in more than 70 countries worldwide
- The treatment of deep vein thrombosis (DVT) and prevention of recurrent DVT and pulmonary embolism (PE) in adults in more than 70 countries worldwide
- The prevention of venous thromboembolism (VTE) in adult patients undergoing elective hip or knee replacement surgery in more than 120 countries worldwide

Since the first approval of Xarelto in 2008 in the orthopaedic setting, more than two and a half million patients worldwide have received Xarelto in daily clinical practice in this indication alone.

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 high priority for Bayer, and the company has developed a [Prescribers Guide](#) for physicians and a [Xarelto Patient Card](#) for patients to support best practices. To learn more, please visit: <https://prescribe.xarelto.com>.

**To learn more about thrombosis, please visit [www.thrombosisadviser.com](http://www.thrombosisadviser.com)**

**To learn more about VAT, please visit [www.VATspace.com](http://www.VATspace.com)**

**To learn more about Xarelto, please visit [www.xarelto.com](http://www.xarelto.com)**

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