# Innovation dedicated to Haemostasis

### Primary Haemostasis

The primary Haemostasis corresponds to the reactions occurring after vascular damage and leads to the formation of a stable platelet clot. This is the first stage of the Haemostasis. To be effective, primary Haemostasis requires the optimal function of Von Willebrand Factor and platelets.

## Haemostasis activation

Following platelet activation and plasmatic coagulation, new molecules appear circulating in the plasma and the platelet membrane proteins are modified. An increase of these markers can reveal a prothrombotic state.

#### The parameters:

- Von Willebrand Factor
- Fibrinogen
- Platelet Factor 4
- **B-Thromboglobulin**
- Soluble Glycoprotein V (sGPV)
- Platelet Glycoproteins by Flow Cytometry
- Anti-platelet antibodies by Flow Cytometry
- Thrombin Generation
- Microparticles

#### The parameters:

- D-Dimer
- Coagulation factors
- Von Willebrand Factor
- Fibrin Monomers
- Soluble Fibrin Monomer Complexes
- Platelet Factor 4
- ß-Thromboglobulin
- Soluble Glycoprotein V (sGPV)

IXa VIIIa APC P

- Soluble Endothelial Protein C Receptor (sEPCR)
- Platelet Glycoproteins by Flow Cytometry
- Thrombin Generation
- Microparticles
- Activated Factor VII Antithrombin complex

## Thrombosis

The onset of plasma coagulation is an «explosive» event that triggers the generation of thrombin. Various control pathways involving a number of different inhibitors regulate thrombin generation and ensure that homeostasis is maintained. Anomalies regarding these inhibitors are the chief cause of venous and/or arterial thrombosis. However, thrombosis may also result from the presence of antiphospholipid antibodies.

## Fibrinolysis

Fibrinolysis is the enzymatic process which, along with vascular repair, leads to the destruction of the clot to restore normal blood circulation. An imbalance of the stability in anti-fibrinolytic factors results in a Haemostasis disorder.

Historical Multi targe Anticoagulants

- Anti-Xa activity direct(rivaroxaban, apixaban, edoxaban) and indirect (heparins, fondaparinux...) Xa inhibitors determination Anti-IIa activity for Direct Thrombin
- Monitoring of P2Y12 ADP receptor antagonists (clopidogrel, prasugrel,
- Monitoring of GpIIb/IIIa antagonists by Flow Cytometry
- Coagulant Activity Monitoring for Activated Factor VII Clotting assay for monitoring
- Factors VIII and IX

The parameters:

Physiological anti-IIa and anti-ک

- Antithrombin
- Protein C

APC PS

ctivated Platelet

- Activated Protein C Resistance
- Protein S
- C4b-BP
- Protein Z
- Heparin Cofactor II (HCII)
- Inhibitor of the Extrinsic Pathway (TFPI)
- Soluble Endothelial Protein C Receptor (sEPCR)
- Lupus Anticoagulants
- Antiphospholipid Antibodies
- Thrombin Generation
- Microparticles

### The parameters:

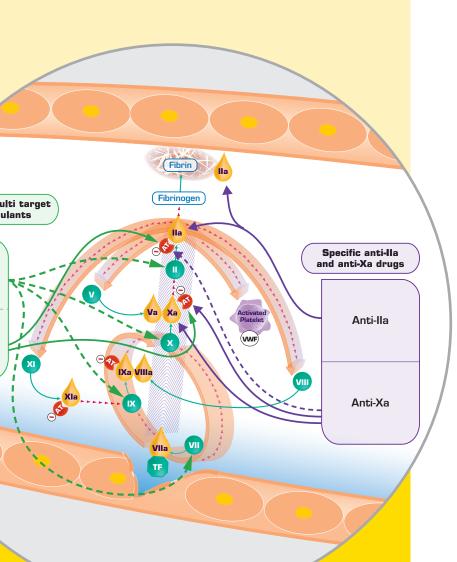
- D-Dimer
- Fibrin and Fibrinogen Degradation Products
- Soluble Fibrin Monomer Complexes
- Fibrin Monomers
- tPA (Tissue Plasminogen Activator)
- Antiplasmin
- Plasminogen Activator Inhibitor (PAI)
- Thrombin Activatable Fibrinolysis Inhibitor (TAFI)
- Microparticles
- Plasminogen

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## Therapeutic monitoring

Haemostasis disorders can be regulated by a broad panel of anti-thrombotic or antihaemorrhagic treatments. Many assays are available to measure the activity of these molecules.



#### The parameters:

- INR for VKA monitoring
- Inhibitors determination (dabigatran, argatroban, bivalirudin)
- ticagrelor, cangrelor...)
- Anti-heparin/PF4 antibodies detection
- Thrombin Generation



Diagnostica Stago S.A.S. RCS Nanterre B305 151 409 9, rue des Frères Chausson 92600 Asnières sur Seine (France) Ph.: +33 (0)1 46 88 20 20 Fax: +33 (0)1 47 91 08 91 webmaster@stago.com www.stago.com