

## **ECAT survey results on direct oral anticoagulant testing**

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In 2012 the ECAT started regular surveys for Orgaran, Fondaparinux, Rivaroxaban, Dabigatran and Argatroban. In 2014 also regular surveys for Apixaban has been introduced.

During the presentation an overview of the survey results will be given.

Orgaran Fondaparinux, Rivaroxaban and Apixaban are measured with chromogenic anti-Xa assays. Dabigatran and Argatroban are mainly measured by either a diluted thrombin time method or an anti-IIa method.

### Direct anti-Xa inhibitors:

For Orgaran samples with a concentration between 0.2 and 1.1 IU/mL has been used. For Fondaparinux this were samples with a concentration between 0.2 and 1.1 µg/mL, for Rivaroxaban samples between 90 and 320 ng/mL and for Apixaban samples between 60 and 200 ng/mL.

The between-laboratory variation for Orgaran, Fondaparinux and Rivaroxaban varied between 5 and 25%, depending on the concentration of the drug. For Apixaban only limited data is available yet. So far a between-laboratory variation between 7 and 14% was observed.

### Direct anti-IIa inhibitors:

For Dabigatran samples with a concentration between 90 and 320 ng/ml has been used. For Argatroban this were samples with a concentration between 0.2 and 1.1 µg/mL.

The between-laboratory variation with the diluted thrombin time assay varied for Dabigatran between 8 and 20% and for Argatroban between 8 and 26%, depending on the concentration of the drug. For the anti-IIa assay this was 8 – 20% for both anticoagulants, also depending on the concentration of the drug.

There is a need for further improvement of the comparability between test results of different laboratories for the direct anticoagulants. This is special the case when samples are measured with low levels of these drugs. Both under- and over-estimation of the concentration may lead to wrong interpretation of clinical samples.