Who we are

Majority owned by the NHS, but with the commercial freedom to invest in innovation, Viapath are on a mission to transform pathology services in the UK. We provide pathology services to the NHS, private hospitals and other organisations both across the country and internationally.

What we do

All of our laboratories are CPA accredited and are working towards the more stringent ISO15189 accreditation. We are committed to delivering a clinically excellent pathology service, placing quality at the core of everything we do.

TEST OVERVIEW

Description
Unfractionated heparin (UFH), low molecular weight heparin (LMWH) and the synthetic pentasaccharide fondaparinux are not direct anticoagulants themselves and function by markedly potentiating the anticoagulant action of the patient's antithrombin. The degree of inhibition of FXa achieved via UFH, LMWH and fondaparinux can be quantified in the chromogenic-based anti-Xa assay. In the anti-Xa assay, the anticoagulant in the test plasma is reacted with fixed amounts of excess exogenous antithrombin and FXa. The anticoagulant forms a complex with the antithrombin and FXa and the residual FXa is reacted with a chromogenic substrate, the intensity of the coloured product being inversely proportional to the concentration of circulating anticoagulant. Rivaroxaban is a direct FXa inhibitor and is assayed in a similar way except that no exogenous antithrombin is required.

Clinical details
Unfractionated heparin (UFH), low molecular weight heparin (LMWH) and the synthetic pentasaccharide fondaparinux are not direct anticoagulants themselves and function by markedly potentiating the anticoagulant action of the patient's antithrombin. LMWHs have more predictable bioavailability than UFH so only require 'monitoring' in certain clinical situations where dose calculation by body weight is unreliable. The APTT is normally sufficient for effective UFH monitoring, but it is relatively insensitive to the more targeted action of LMWH or fondaparinux and the anti-Xa assay is employed for this purpose. Rivaroxaban is a direct FXa inhibitor with predictable bioavailability and regular monitoring unnecessary. Measurement of levels be required in certain circumstances, such as suspected overdose, suspected non-compliance, renal failure and prior to surgery.

Related condition or disease
Therapeutic anticoagulation

Reference range
Therapeutic ranges 0.4 - 0.7 (UFH) 0.5 - 1.0 (LMWH) 0.8 - 1.2 (fondaparinux)

Guide to expected rivaroxaban levels at different doses with normal CrCL:

<table>
<thead>
<tr>
<th>Dose of rivaroxaban</th>
<th>2h peak</th>
<th>24h Trough</th>
</tr>
</thead>
<tbody>
<tr>
<td>10mg od</td>
<td>91-195</td>
<td>1-37 ng/mL</td>
</tr>
<tr>
<td>15mg bd then 20mg od</td>
<td>189-419</td>
<td>6-12 ng/mL</td>
</tr>
<tr>
<td>20mg od</td>
<td>175-360</td>
<td>19-60 ng/mL</td>
</tr>
<tr>
<td>30mg od</td>
<td>184-399</td>
<td>24-83 ng/mL</td>
</tr>
</tbody>
</table>

Units
IU/ml (UFH & LMWH) mg/l (fondaparinux) ng/ml (rivaroxaban)

Department
Haemostasis and Thrombosis Department

Laboratory
Diagnostic Haemostasis and Thrombosis Laboratory at St Thomas'

Location
Viapath at St Thomas' Hospital

ORDERING INFORMATION

Sample type and Volume required
External requests: Citrated platelet poor plasma 475µL x 1 aliquot
Internal requests: please refer to EPR label

Turnaround time
5 - 7 days Call laboratory to arrange urgent analysis

Contacts
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How can we help?

We have a number of partnering options to suit your needs, whether you require this specific test or a range of services, we are here to help. Contact one of our friendly Business Development Managers for more information, or visit our website.