Monitoring Warfarin is a delicate balance

Diapharma Factor X
Clinical Background

The difficulty of monitoring warfarin therapy in patients with lupus anticoagulant has been well established. Standard methods of monitoring these types of patients may be substandard in that they often result in overestimation of anticoagulation. It has been shown that patients with lupus anticoagulants who require this therapy often demonstrate a prolonged baseline prothrombin time (protime). When patients with lupus anticoagulants receive OAC therapy, the INR’s vary significantly. This is because lupus patients can produce antiphospholipid antibodies that interfere with the phospholipid-dependent clotting reactions that are part of most protime assays. In contrast, the Factor X reaction does not require a phospholipid membrane surface, and therefore the Chromogenic Factor X assay is a useful tool in the management of patients with lupus antibodies (inhibitors) who are receiving warfarin therapy. Studies have shown that using a chromogenic assay to measure Factor X levels in these patients is a reliable way to determine the intensity of coagulation.
The method is based on a two-stage principle:

1. FX $\rightarrow$ RVV $\rightarrow$ Calcium $\rightarrow$ FXa

2. FXa substrate $\rightarrow$ peptide + pNA

In stage one, Factor X is activated in the presence of calcium and the activator Russell’s Viper Venom (RVV) to Factor X–activated (FXa). In stage two, the generated FXa hydrolyses the chromogenic substrate and liberates the chromogenic group, pNA. The color is then read with a spectrophotometer at 405 nm. Thus, the intensity of the color is proportional to the FX activity in the sample. Each “run” includes a standard curve, and Factor X testing may be performed in a microtiter plate, or with automated methods.

**Features**

- Valuable tool for monitoring oral anticoagulation in patients with prolonged pro-times, such as those with lupus anticoagulants and patients being bridged from thrombin inhibitors like hirudin or argatroban
- Solution to dealing with unstable INRs in warfarin patients with lupus inhibitors
- Eliminates the issues of varying sensitivities of different thromboplastins
- Reliable, readily available and easy to use assay
- Assay can be brought onto automated coagulation analyzers
- Useful for detecting congenital Factor X Deficiencies
DiaPharma Factor X

References


