HEMATOLOGY
Clinical Communications

September 22, 2021

INTRODUCTION of AUTOMATED INNOVANCE® RISTOCETIN-INDEPENDENT ASSAY for EVALUATION of VON WILLEBRAND FACTOR (VWF) ACTIVITY

Date Effective: Monday, September 27, 2021

Background Information:

Since 2018, the automated ristocetin-cofactor assay has been used to measure VWF activity. The assay used latex particles coated with a recombinant fragment of the Glycoprotein Ib receptor (rGPIb), the primary platelet receptor for VWF. VWF in the patient plasma sample bound to the rGPIb fragment in the presence of ristocetin, leading to particle agglutination. Although the results have been accurate in most samples, in some cases of Type I von Willebrand Disease, the measured VWF activity has been lower than expected.

Change in or New Test Procedure:

The Haemostasis Laboratory at the Health Sciences Centre will be changing the assay used to measure VWF activity to an assay that is ristocetin-independent. The Innovance® assay uses a recombinant, constitutively active, GPIb (two gain-of-function mutations) to bind VWF in the patient sample. Because of the gain-of-function mutations, VWF binding to the rGPIb does not require ristocetin. The GPIb-VWF complex is captured on polystyrene beads coated with antibody to GPIb, resulting in particle agglutination.

The automated VWF activity assay will be included in the initial screening of patient samples for quantitative and qualitative abnormalities of VWF. This screen also includes VWF antigen level, Factor VIII coagulant activity, and if requested, PFA-100 closure times.

Reference Range: Unchanged (50 – 200%)

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Reference:

Vangenechten I, Mayger K, Smejkal P, et al. A comparative analysis of different automated von Willebrand factor glycoprotein Ib-binding activity assays in well typed von Willebrand disease patients. J Thromb Haemost. 2018; 16:1268-1277