Advances in laboratory assessment in thrombosis/hemostasis

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Technologies in laboratory diagnostics are changing fast with progress in understanding and therapy of diseases. Unfortunately, new analyzers are often needed to be installed in a clinical laboratory to implement such techniques. The demand for new hardware is a bottleneck in improving the diagnostic services for many facilities with limited resources. In this regard, hemostasis laboratories take a slightly different position. Because many in vitro diagnostic tests target the functional aspects of hemostasis, further meaningful information can be obtained from the same analyzers as in current use. Automated coagulometers are good candidates for such further utilization. Clot waveform analysis is a leading example. Behind the simple values reported as clotting time, clotting curves exist that represent the process of fibrin clot formation. Clot waveform analysis examines the clotting curves and derives new parameters other than clotting times. The clot waveform parameters are now in active use in assessing the hemostatic potential of hemorrhagic patients. Clinical application of coagulometers can also be widened by modifying the reagent formulation. For example, the chromogenic factor VIII assay with bovine source reagent compositions has recently been introduced for hemophilia A patients on emicizumab prophylaxis. Also, new immunoturbidimetric functional assays for von Willebrand factor have been developed recently. Thus, new clinically relevant information can be mined from the automated coagulometers that are based on old technology.