Platelet Functional Disorders and Testing

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Disorders of platelet function are common and important, but heterogeneous causes of abnormal bleeding. Laboratory testing has a key role in the diagnostic evaluation of these disorders and this requires an assessment of platelet numbers and function. There are few guidelines on how to perform clinical testing for platelet functional disorders. Recent patterns of practice assessments on clinical testing for disorders of platelet function by the North American Specialized Coagulation Laboratory Association (*NASCOLA*) highlighted the need for further standardization.
Methods: Published literature and experiences were reviewed to obtain data on best testing practices in addition to information on rare and common, inherited and acquired platelet functional disorders.
Results: The items that are important for the diagnostic evaluation of common and rare platelet disorders include: a careful assessment of the bleeding history, platelet counts, platelet size, and platelet function (commonly by light transmission aggregation). Inclusion of screening tests of primary hemostasis are presently considered optional. Evaluation of platelet function by secretion assays and an assessment of platelet dense granules often help to evaluate the more common platelet functional disorders. Laboratories vary in the final agonist concentrations chosen to assess platelet function and in how they obtain reference intervals - this may impact on test sensitivity and specificity. Failure to establish a diagnosis after comprehensive testing is a common problem in individuals presenting with bleeding problems typical of a defect in primary hemostasis.
Conclusions: Testing for platelet functional disorders is important and there is a need to improve the availability of tests for secretion defects and dense granule deficiency, which are among the most common defects. There needs to be greater application of quality assurance practices to platelet function testing. Guidelines and recommendations on testing for disorders of platelet function would help laboratories further improve the quality of their testing for these conditions.