Platelet function analysis (PFA-100)

Clotting-Guide
vom Labor zur Diagnose

Synonyms:
Other analysis systems can also be used for platelet function diagnosis (e.g. PFA-200, Multiplate, Verify Now, aggregometry, etc.).

Description, significance:
In the PFA-100 test, whole blood is drawn through a membrane coated with collagen and epinephrine or collagen and ADP. Because of the high shear forces during the measurement the test is dependent on von Willebrand factor. The platelets in the sample are activated and aggregated by collagen and the respective activator. The time until the membrane closes is measured.
The test therefore serves as a screening test to detect von Willebrand syndrome, an aspirin effect (epinephrine cassette), and the effect of ADP-mediated platelet function (ADP cassette), e.g. the effect of clopidogrel and thienopyridines.

Reference range:
Collagen/epinephrine cassette: approx. 82-150 seconds.
Collagen/ADP cassette: approx. 62-100 seconds.

Increased values:
von Willebrand syndrome, platelet aggregation inhibitors, various medications with influence on platelet function, NSAIDs, congenital platelet dysfunction
Decreased values:
clinically irrelevant

Preanalytics:
Platelet function is determined from citrated whole blood. Care must be taken to collect blood accurately, avoid contamination, fill the blood tube correctly and mix well with the citrate. The blood sample must be sent to the laboratory as quickly as possible.

Influencing/disturbing factors:
Thrombocytopenia, anemia, medications, uremia, aggregation inhibitors, SSRIs, NSAIDs, etc.

References:
Thomas L, Laboratory and Diagnosis, 2023, Release 5: https://www.labor-und-diagnose.de/index.html
Parameter catalog of the Clinical Institute for Laboratory Medicine, Med.Univ.Wien and AKH Vienna: https://www.akhwien.at/default.aspx?pid=3982
List of services for clinical chemistry, Univ.Klinikum Ulm: https://www.uniklinik-ulm.de/zentrale-einrichtung-klinische-chemie/leistungskatalog.html