PLT-F

PLT-F MANAGEMENT

Know more.
Decide with confidence.
Act faster.

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Get the best platelet result for each sample without delay

Accurate and precise platelet counting is a challenge. With abnormalities and low counts, standard analysers struggle to deliver the needed results. Sysmex's platelet management concept delivers significant advances on existing systems so that a laboratory can report reliably, while still streamlining their entire platelet workflow and reducing turnaround time. Should a measurement channel detect an inaccurate count caused by abnormalities, the analyser notifies the user or automatically performs a reflex measurement. The diagram shown overleaf depicts the workflows for analysers equipped with various measuring channels (PLT-I only, PLT-I/F or PLT-I/O). Below, you will find a short overview for each type of platelet analysis we offer.

CBC

PLT-I

- Default, routine automated method (DC sheath flow detection, impedance measurement principle) – part of the complete blood count (CBC).
- Accurate count for the majority of samples.
- Possible interferences with all particles with a volume similar to platelets (e.g. microcytes, RBC fragments).
- Falsely low counts due to giant platelets and platelet clumps are detected in the WNR channel and pointed out by the analyser.
- Lower precision at very low PLT counts (≤ 20 × 10^9/L) – the lower the count, the greater the imprecision.

RET

PLT-O

- Automated reflex method for samples with unreliable PLT-I counts – the optical platelet count is part of reticulocyte analysis (RET channel) using fluorescence flow cytometry (FFC).
- Resolves many PLT-I interferences.
- Possible interferences with RBC and WBC fragments.
- Falsely low counts due to platelet clumps detected in the WNR channel and pointed out by the analyser.
- Lower precision at very low PLT counts (≤ 20 × 10^9/L) – the lower the count, the greater the imprecision.

PLT-F

PLT-F

- Automated reflex method for samples with inaccurate or very low PLT-I counts – a dedicated channel for the PLT count (PLT-F channel).
- High precision also at platelet transfusion thresholds due to the fluorescence technology and 5-fold higher counting volume – enabling confident clinical decisions (Kim HY *et al.*, Int J Lab Hematol. 2021, 43(3): 387–394).
- Results directly comparable to the reference method CD41/CD61 (Tanaka Y *et al.*, J Clin Lab Anal. 2014, 28(5): 341; Park S *et al.*, Ann Lab Med. 2014, 34(6): 471).
- Resolves most PLT-I interferences, as the fluorescence marker specifically labels platelets. – so no interference even in the presence of fragmented red blood cells (Wada A *et al.*, PLoS One. 2015, 10 (10)).
- Falsely low counts due to platelet clumps detected in the PLT-F channel and pointed out by the analyser.
- **IPF:** The immature platelet fraction supports the differential diagnosis of thrombocytopenia (for more information: Sysmex white paper *'Differential diagnosis of thrombocytopenia'*).
- **IPF#:** The immature platelet count enumerates the young and more reactive platelets, recently produced in the bone marrow (for more information: Sysmex white papers *'Managing immune thrombocytopenia (ITP) treatment effectively'* and *'Identifying poor antiplatelet drug response and its risks early on'*).
- **TWO:** Thrombopoiesis Workflow Optimisation: the optional add-on embedded in the *Extended* IPU supports the monitoring of thrombocytopenic patients and optimises PLT-F reflex measurements. It provides clear rules for when PLT-F measurements are beneficial and will avoid unnecessary PLT-F measurements.

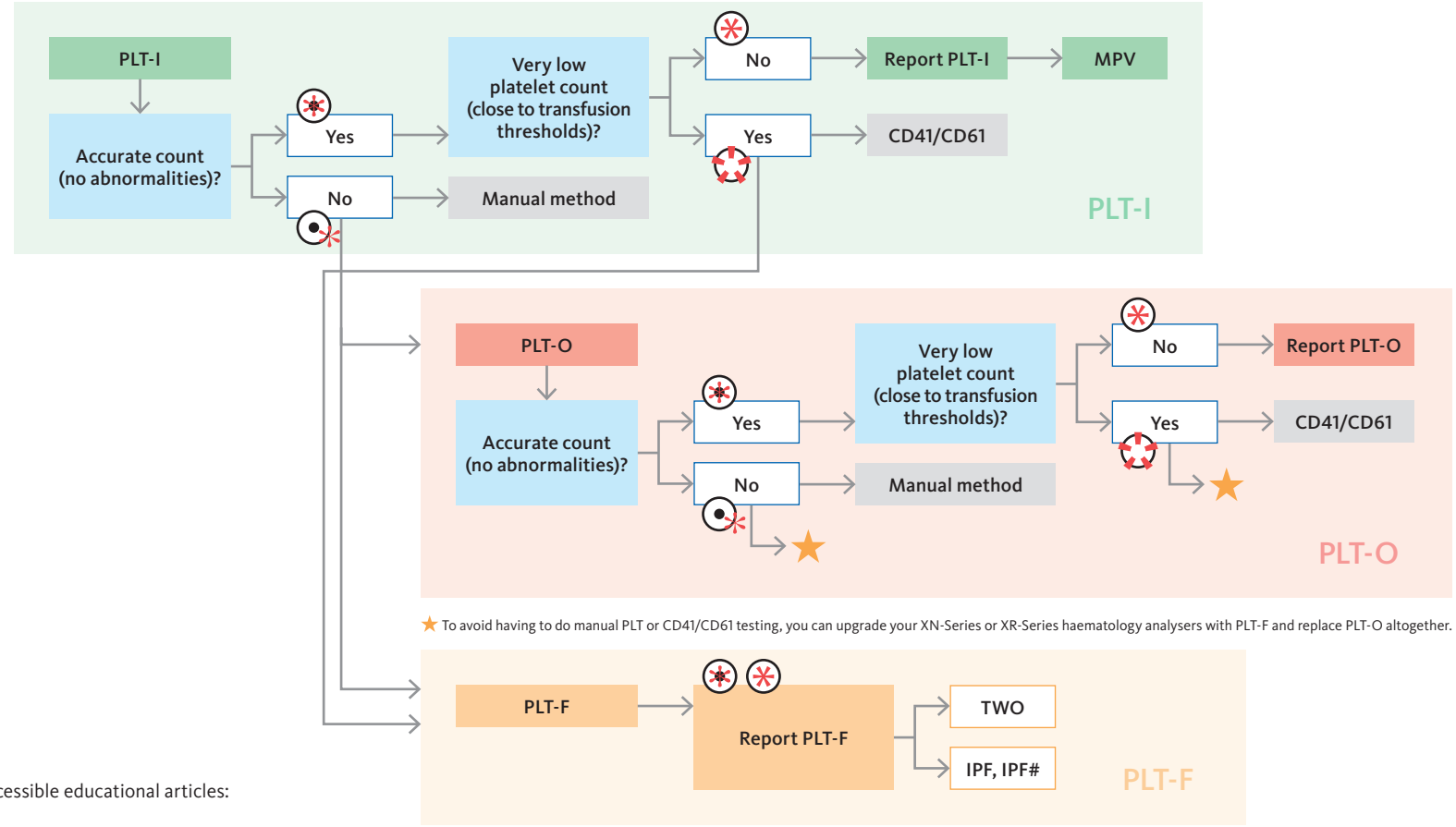
Below the decision tree shows how the XN-Series and XR-Series analysers process unreliable results until the count is accurate. However, the method shown below on how to proceed with other results is based on best practice and should always be validated by the laboratory according to local SOP.

- **An inaccurate count is caused by abnormalities,** such as interferences as with the PLT-I or PLT-O method. This is detected by the analyser, and the user is notified.

Accurate count Inaccurate count

- **An imprecise count is caused by lower measurement precision** for the PLT-I or PLT-O method at very low platelet counts (PLT ≤ 20 × 10^9/L). The lower the count, the greater the imprecision.

Precise count Imprecise count



★ To avoid having to do manual PLT or CD41/CD61 testing, you can upgrade your XN-Series or XR-Series haematology analysers with PLT-F and replace PLT-O altogether.

Benefit from more background information in our freely accessible educational articles:
www.sysmex-europe.com/whitepapers

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