

High accuracy in low PLT range supports identification of dengue hemorrhagic fever

Dengue is a viral infection that is transmitted by infected mosquitos. The disease has a global spread but is more common in tropical and sub-tropical climates. According to WHO, about half of the world's population is at risk, with an estimated occurrence of about 100 to 400 million infections every year, and hence, posing a great public health burden (1).



Recognize severe cases

Early detection and determination of disease severity to provide patient with proper medical care can greatly lower fatality rates. In acute febrile illness, a sudden drop in platelet (PLT) count can be observed between four to six days of fever in patients diagnosed with dengue (2). To recognize severe cases, Faridah and coworkers at the University of Ahmad Dahlan, Yogyakarta, Indonesia studied factors associated with dengue hemorrhagic fever and found PLT count on the day of admission to be predictive (3). In dengue patients, the PLT count significantly dropped on day one and three of hospitalization in patients diagnosed with dengue hemorrhagic fever.

PLT extended count

To support monitoring of conditions affecting the platelets, Swelab™ Alfa Plus hematology analyzer features a PLT extended count functionality to facilitate detection of patient samples with severe thrombocytopenia. When enabled, the analyzer will activate PLT extended counting time, counting three times as many platelets as in normal count mode, to be able to provide a more accurate result in the critically low PLT range.

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Sample Result		Parameter values		Scales	Graphs
Seq No	347	WBE DE	10.2	3.5	10.5
Date	2018-11-28 14:32	LYM	1.4 14.4 % ▼	0.9	2.9
Profile	Blood	MID	0.6 6.2 %	0.3	0.9
Method	Open Tube	GRA	8.2 ▲ 79.4 %	1.2	8.0
Operator		HGA	11.2 ▼	11.5	16.5
Sample ID 1		MCH	31.5	25.0	35.0
30261084		MCHC	35.7	31.0	38.0
		RBC	3.57 ▼	3.90	5.72
		MCV	88.0	81.2	98.3
		HCT	31.4 ▼	35.0	55.0
		RDW	13.5 % 62.7	11.8 %	15.6 %
		PLT*	24 ▼	150	450
		MPV		6.5	11.0
		PDW%		0.1 %	99.9 %
		PCT		0.01	9.99
		P-LCR		0.1 %	99.9 %

If PLT extended counting time is enabled and a low PLT is detected during analysis, the extended counting time will be displayed on the counting phase screen, and then indicated by an asterisk (*) adjacent to the PLT parameter on the result screen and in printouts and exported PDFs.

References

1. WHO: Dengue and severe dengue. www.who.int (accessed 2023-05-17).
2. Chaloeuwong *et al.* Useful clinical features and hematological parameters for the diagnosis of dengue infection in patients with acute febrile illness: a retrospective study. *BMC Hematol* 18, 20 (2018).
3. Faridah *et al.* Dynamic Changes of Platelet and Factors Related Dengue Haemorrhagic Fever: A Retrospective Study in Indonesian. *Diagnostics (Basel)* 12, 950 (2022).



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