HORIBA

Yumizen

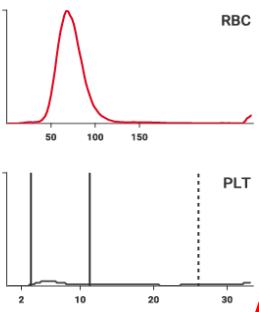
Chase the Case #50

- Acute Lymphoblastic Leukemia -

Patient Demographics: Male, 6 years old
Symptoms: Fever and generalized weakness
Diagnosis: Acute Lymphoblastic Leukemia (ALL) – B-cell type, confirmed by immunophenotyping and molecular cytogenetics
Microscopic Review: Blasts: 88%, Neutrophils: 3%, Lymphocytes: 9%. Peripheral blood smear revealed small to large heterogeneous blast cells with irregular nuclear shapes, frequent clefting, and inconspicuous to prominent nucleoli.
How Yumizen H500 Assisted: The HORIBA Yumizen H500 raised an alarm for "Blast" suspicion and flagged suspected pathologies, prompting a review for large immature cells and atypical lymphocytes. On the DIFF scattergram, a lymphoblast population was observed in the atypical lymphocyte area, corroborated by extended immature WBC differential values (ALY & IML).This advanced feature, available on a mid-range hematology analyzer, enables mid-segment laboratories to support early diagnosis and intervention—crucial for managing challenging cases like childhood leukemia at the primary care level.

CBC

				Range
WBC	34.16	*H	10³/mm³	4.00 - 11.00
RBC	3.57	ℓ	10⁶/mm³	3.90 - 5.80
HGB	9.6	ℓ	g/dL	11.5 - 16.7
HCT	28.7	L	%	35.0 - 49.0
MCV	80.3	*	fL	75.0 - 97.0
MCH	26.8		pg	26.5 - 33.0
MCHC	33.4		g/dL	32.0 - 36.0
RDW-CV	14.9	*	%	12.0 - 18.0
RDW-SD	37.0	*L	fL	37.0 - 56.0
MIC	9.5		%	0.0 - 20.0
MAC	2.9		%	2.0 - 10.0
PLT	15	*L	10³/mm³	150 - 450
MPV	11.0	*h	fL	7.4 - 11.0
PCT	0.016	*ℓ	%	0.150 - 0.400
PDW	7.9	*ℓ	fL	11.0 - 20.0
P-LCC	6	*ℓ	10³/mm³	44 - 140
P-LCR	38.4	*	%	18.0 - 50.0



Recommended actions
Slide Review

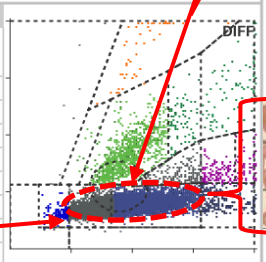
Alarms
LMNE
Abnormal differentiation
WBC Interference
PLT
RBC PLT interference
Schistocytes/Macro PLT?
Synthesis WBC
LIC?
ALY?
PLT aggregates or NRBC?
Blasts?

Susp. Pathologies
Thrombopenia
Leukocytosis
Lymphocytosis
Large Immature Cells
Atypical Lymphocytes

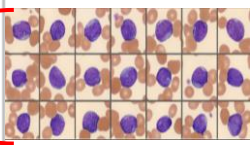
NLR : 0.07

DIF

	%		Range	10³/mm³		Range
NEU	6.8	*ℓ	40.0 - 75.0	2.32	*	1.50 - 7.00
LYM	90.9	*h	15.0 - 45.0	31.08	*H	1.25 - 4.00
MON	2.0	*ℓ	4.0 - 13.0	0.67	*	0.20 - 0.80
EOS	0.3	*ℓ	0.5 - 7.0	0.09	*	0.00 - 0.40
BAS	0.0	*	0.0 - 2.0	0.00	*	0.00 - 0.10
IMG	0.9	*	0.0 - 2.0	0.31	*	0.00 - 0.50
IMM	0.3	*	0.0 - 0.5	0.11	*h	0.00 - 0.10
IML	1.2	*h	0.0 - 0.2	0.41	*h	0.00 - 0.05
ALY	51.3	*H	0.0 - 2.5	17.51	*H	0.00 - 0.20
LIC	3.1	*H	0.0 - 3.0	1.06	*H	0.00 - 0.20



Lymphoblastic population



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This clinical case has been provided by Hematology Lab, Mumbai, India.