



Patient Demographics: Male, 48 years old

Symptoms: Weakness, abdominal pain

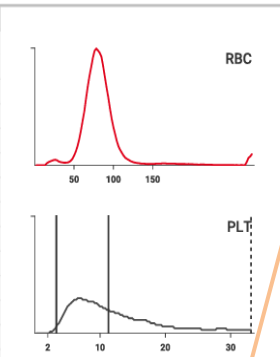
Diagnosis: Chronic Myeloid Leukemia (CML) – Chronic Phase

Microscopy Findings: Blasts: 2%, Lymphocytes: 10%, Monocytes: 1%, Neutrophils: 49%, Eosinophils: 3%, Basophils: 6%, Promyelocytes: 2%, Myelocytes: 18%, Metamyelocytes: 9%, Nucleated RBCs: 2 per 100 WBCs observed

Other Tests: BCR-ABL t(9;22) Philadelphia Chromosome: **Positive**

How Yumizen H500 Assisted: On the DIFF scattergram, we observed an immature granulocytic population, which was also reflected in the extended WBC differential (high IMG and LIC). The scattergram further revealed a compact blast population located between the lymphocyte, atypical lymphocyte, and monocyte areas. These small to moderately sized blasts were situated in the ALY region and exhibited basophilic cytoplasm with irregular nuclear contours, containing two to three nucleoli. The suspected pathology alarms also indicated basophilia, which was confirmed on the blood smear. Additionally, the Yumizen H500 analyzer generated alarms for abnormal differentiation, high IMG, high LIC, and the presence of blasts, all of which suggested the need to investigate for hematologic malignancy.

CBC				
				Range
WBC	40.34	*H	10 ⁹ /mm ³	4.00 - 11.00
RBC	4.41		10 ⁶ /mm ³	3.90 - 5.80
HGB	13.0		g/dL	11.5 - 16.7
HCT	39.2		%	35.0 - 49.0
MCV	88.8		fL	75.0 - 97.0
MCH	29.3		pg	26.5 - 33.0
MCHC	33.1		g/dL	32.0 - 36.0
RDW-CV	13.8		%	12.0 - 18.0
RDW-SD	40.1		fL	37.0 - 56.0
MIC	3.0		%	0.0 - 20.0
MAC	3.8		%	2.0 - 10.0
PLT	215	*	10 ³ /mm ³	150 - 450
MPV	12.0	*H	fL	7.4 - 11.0
PCT	0.259	*	%	0.150 - 0.400
PDW	16.2	*	fL	11.0 - 20.0
P-LCC	92	*	10 ³ /mm ³	44 - 140
P-LCR	42.9	*	%	18.0 - 50.0



Recommended actions

Slide Review

Alarms

LMNE

Abnormal differentiation

WBC Interference

Synthesis WBC

LIC?

PLT aggregates of NRBC?

Blasts?

Susp. Pathologies

Leukocytosis

Neutrophilia

Monocytosis

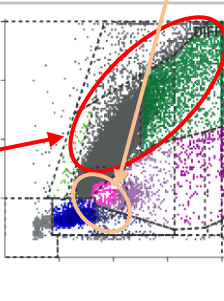
Basophilia

Large Immature Cells

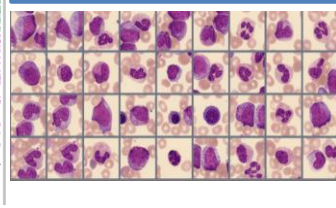
Atypical Lymphocytes

NLR : 8.10

DIF				
	%		10 ³ /mm ³	Range
NEU	80.1	*h	32.30	*H 1.50 - 7.00
LYM	9.9	*l	3.99	* 1.25 - 4.00
MON	4.7	*	1.88	*H 0.20 - 0.80
EOS	3.3	*	1.35	*h 0.00 - 0.40
BAS	2.0	*	0.82	*H 0.00 - 0.10
IMG	17.6	*H	7.11	*h 0.00 - 0.50
IMM	0.8	*h	0.32	*h 0.00 - 0.10
IML	0.1	*	0.02	* 0.00 - 0.05
ALY	1.0	*	0.38	*H 0.00 - 0.20
LIC	19.2	*H	7.76	*H 0.00 - 0.20



Blood smear showed left-shifted neutrophilia with all stages of immaturity present, from blasts (2%) to mature neutrophils. Basophils were increased; and 2 n RBCs, including a polychromatic erythroblast.



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