



PERIPHERAL BLOOD FILM (PBF)

DOs and DON'Ts

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PERIPHERAL BLOOD FILM (PBF)

- Initiation of a PBF is often a clinical request by the attending clinician on account of a clinical suspicion or less frequently initiated by the laboratory.
- The laboratory may initiate peripheral blood film based on abnormal findings from an automated count or patients clinical information whose diagnosis may be supported by a peripheral blood film.



PBF: INDICATIONS

- Unexplained/ suspected cytopenias
- Suspected bone marrow infiltration by malignancy/ infection
- Suspected haemolysis
- Suspected haematological malignancy
- Unexplained splenomegaly/ jaundice
- Features of hyperviscosity syndrome

Analyte	Results	Unit	Flag	Reference	Methodology
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CBC + DIFF

WHOLE BLOOD

White Blood Cell	5.3	10 ⁹ /L		4.0 - 10.0	Scatter Fluorescence
Red Blood Cell	3.7	10 ¹² /L	L	3.8 - 4.8	DC Impedance Method
Haemoglobin	9.9	g/dL	L	12.0 - 15.0	Colorimetric method
Haematocrit	30.6	%	L	36.0 - 46.0	Calculated
Mean Cell Volume	83.4	fL		83.0 - 101.0	RBC Histogram
Mean Cell Haemoglobin	26.9	pg	L	27.0 - 32.0	Calculated
Mean Cell Haemoglobin Concentration	32.3	g/dL		31.5 - 34.5	Calculated
Red Cell Distribution Width CV	14.9	%		11.0 - 15.0	RBC Histogram
Platelet	446	10 ⁹ /L	H	150 - 410	DC Impedance Method
Neutrophil %	44.7	%		40.0 - 80.0	Scatter Fluorescence /Manual Differential
Lymphocyte %	44.2	%	H	20.0 - 40.0	Scatter Fluorescence /Manual Differential
Monocyte %	8.5	%		2.0 - 10.0	Scatter Fluorescence /Manual Differential
Eosinophil %	2.0	%		1.0 - 6.0	Scatter Fluorescence /Manual Differential
Basophil %	0.6	%		0.0 - 2.0	Scatter Fluorescence /Manual Differential
Neutrophil Absolute Count	2.37	10 ⁹ /L		2.00 - 7.00	Calculated
Absolute Lymphocytes Count	2.34	10 ⁹ /L		1.00 - 3.00	Calculated
Monocyte Absolute Count	0.45	10 ⁹ /L	L	0.50 - 1.00	Calculated
Eosinophil Absolute Count	0.11	10 ⁹ /L		0.02 - 0.50	Calculated
Basophil Absolute Count	0.03	10 ⁹ /L		0.02 - 0.10	Calculated
Nucleated Red Blood Cell	0	NRBC/100WB		0 - 10	Scatter Fluorescence /Manual Differential

Peripheral Blood Film Comment

Clinical summary: 41-year-old with underlying DM, chronic kidney disease, hypertension, susceptibility to infections presented with vomiting and lethargy.

HGB: mild anaemia

RBC: normochromic normocytic anaemia with a population of hypochromic microcytic red cells.

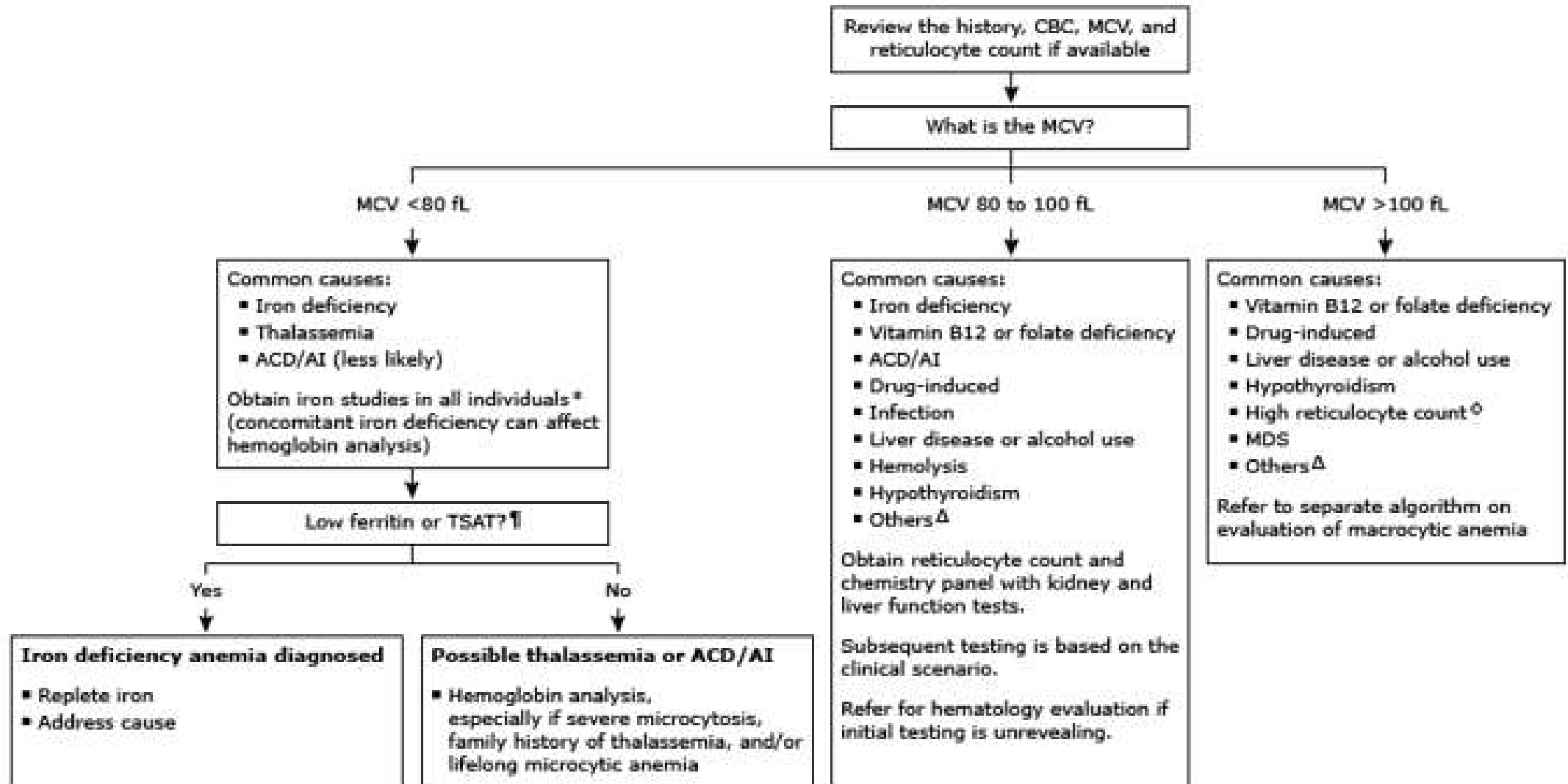
WBC: normal

PLT: thrombocytosis (40-50/hpf)

Impression:

1. Anaemia of chronic disease
2. Thrombocytosis is reactive. Please correlate with clinical findings.

Anemia evaluation in outpatients (nonpregnant adults)





PBF: DOs

TO DO

- Sample collection: EDTA tube (2-3 ml)
- To reach the laboratory as soon as possible (sample integrity is within 4 hours)
- **Adequate clinical history**

CLINICAL DIAGNOSTIC LABORATORIES DEPARTMENT
 LEVEL 1, HOSPITAL AL-SULTAN ABDULLAH
 Universiti Teknologi MARA
 42300 Bandar Puncak Alam, Selangor Darul Ehsan
 Phone: 03-3396 3000
 http://hospital.uitm.edu.my



HUITM-CLD-CDL-F-015-02
 2506851
 FOR LAB USE ONLY

HAEMATOTOLOGY REQUEST FORM

Name : [Redacted]
 Reg No : [Redacted] Clinic / Ward : HUITM - Inpatient
 I/C No : [Redacted] Date of Admission / Clinic Appointment : [Redacted]
 DOB : [Redacted] Requested By : [Redacted]
 Age : [Redacted] Ordered Date/Time : [Redacted]
 Race : [Redacted] Consultant in Charge : [Redacted]
 Gender : [Redacted]
 App.Date (Specimen) : N/A

Remark :
 Clinical History ==

No	Test Name	Specimen	Location	Priority
1	COMPLETE BLOOD COUNT (CBC)	WHOLE BLOOD	LABHUITM	Routine

M/F
 13/2 15/2

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URGENT

HAEMATOTOLOGY REQUEST FORM

Name : [Redacted]
 Reg No : [Redacted] Clinic / Ward : HUITM - Emergency Department
 I/C No : [Redacted] Date of Admission / Clinic Appointment : [Redacted]
 DOB : [Redacted] Requested By : [Redacted]
 Age : [Redacted] Ordered Date/Time : [Redacted]
 Race : [Redacted] Consultant in Charge : [Redacted]
 Gender : [Redacted]
 App.Date (Specimen) : N/A

Remark :
 Clinical History

No	Test Name	Specimen	Location	Priority
		WHOLE BLOOD	LABHUITM	URGENT

Sample Taken at : [Redacted]
 - Basimah Huda


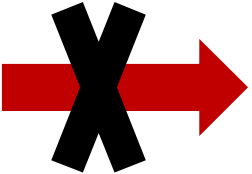


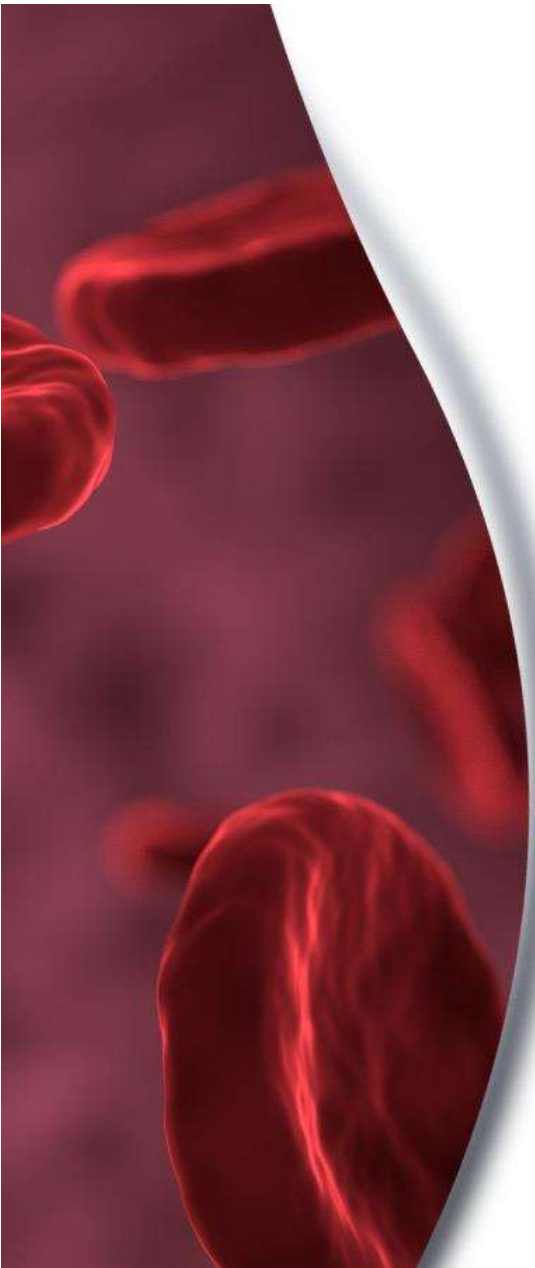
PBF: DON'Ts

DO NOT

- Request together with
 - CBC
 - CBC + DIFF
 - Hb analysis
- Send request multiple times unless indicated
 - to discuss with the pathologist on call

PBF: OTHER INFO

- TAT: 5 working days
- URGENT PBF:
 - urgent request is subjected to communication between the pathologist and requesting doctor
- CBC + DIFF  PBF
 - within 4 hours of sample taking
- CBC  PBF



Reason for Rejection :

	Defective label
	Missing label
	Wrong label
	Incomplete Request form
	Hemolyzed sample
	Lipaemic sample
	Icteric sample
	Clotted sample
	Expired collection containers
	Wrong collection containers
	Broken or cracked collection containers
	Insufficient specimen
	No specimen received (only request form received)
	Improper transportation method (specify:)
	Temperature not maintained
	Delayed specimen received
	Repetitive test order/double request
	Test is not clinically indicated
	Out of sample stability
	Test is not offered
	Improper Specimen Collection
	Others (specify: Red cell agglutination)

SAMPLE REJECTION: HTM UNIT, CDL

CDL HASA

Haematology:	
Duration	Jan – Dec 2022
Total specimen received	38,340
Total number of rejection	1,227
Percentage of rejection	3.2%
Highest rejection criteria	<ol style="list-style-type: none"> 1. Clotted (58%, 714) 2. Insufficient (14%, 170)
Transfusion Medicine	
Duration	January – December 2022
Total specimen received	5,034
Total no. of rejection	218
Percentage of rejection	4.3%
Highest rejection causes	<ol style="list-style-type: none"> 1. Haemolysed (51%, 111) 2. Repetitive (28%, 61)

CDL Sg Buloh

For Haematology only	
Duration	January – December 2022
Total specimen received	19,828
Total number of rejection	433
Percentage of rejection	2.2%
Highest rejection causes	<ol style="list-style-type: none"> 1. Clotted (52%, n=224) 2. Insufficient (15%, n=68)
For Transfusion Medicine only	
Duration	January – December 2022
Total specimen received	827
Total no. of rejection	36
Percentage of rejection	4.4%
Highest rejection causes	<ol style="list-style-type: none"> 1. Haemolysed (47%, n = 17) 2. Repetitive order (28%, n = 10)

A circular inset on the left side of the slide shows a microscopic view of several red blood cells. The cells are biconcave and have a reddish-pink hue, set against a darker, blurred background.

Q & A session



QUIZ TIME!

The following are indications for PBF **EXCEPT** for

- A. pancytopenia
- B. pre-operation assessment
- C. suspected haematological malignancy
- D. suspected haemolysis
- E. unexplained jaundice



QUIZ TIME!

STATE ONE (1) **OTHER** INDICATION FOR PBF
THAT IS **NOT STATED** IN QUESTION ABOVE



THANK YOU