

به نام ذی جود شگرف و والایی که
هماره با من است

Rational Ordering of Laboratory Tests: Optimizing Patient Care, Minimizing of Waste

Presented by:

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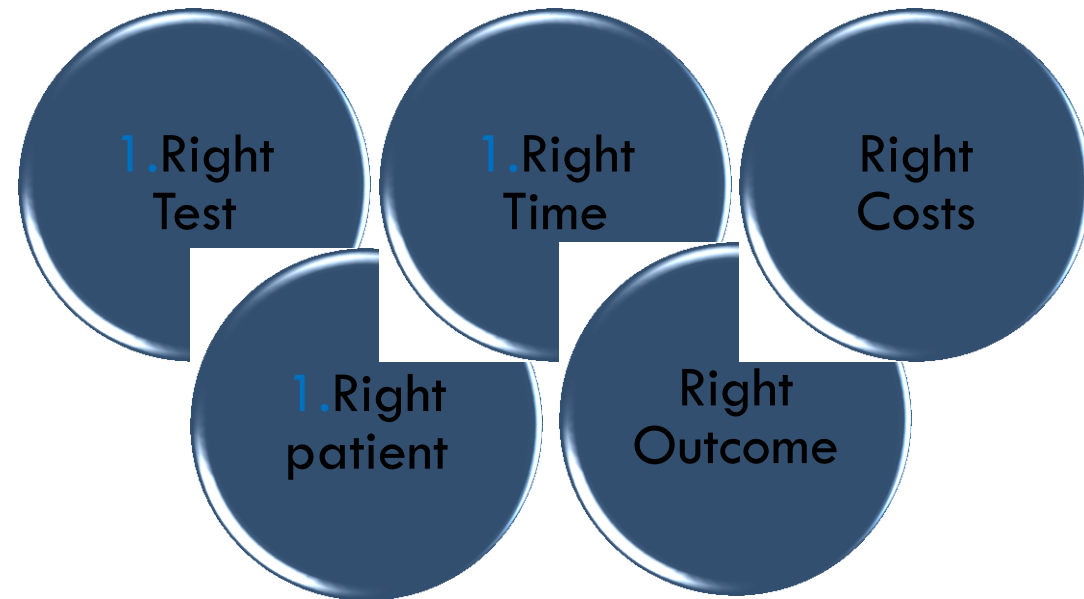


Strategies to Improve the Rational Ordering of Laboratory Tests

- Educating Clinicians
- Decision Support Tools
- Audit and Feedback
- Patient Engagement
- Streamlining Follow-up
- EBLM-based Guidelines



5R Princippples in Ordering Laboratories Tests



Rational Decision-Making Tools for Laboratory Tests Ordering

<i>Tool</i>	<i>Key Description</i>	<i>Goal</i>
<i>Clinical Guidelines</i>	Following evidence- based Recommendations for the diagnosis and monitoring of common diseases	Standardizing diagnostic and treatment approaches.
<i>Pre- Test Probability</i>	Adjusting test orders based on the likelihood of disease in the patient prior testing. (Screening tests in low- risk populations often have low PPV)	Preventing false-positive results and unnecessary follow-ups
<i>Testing Algorithms</i>	Utilizing a logical sequence of tests (starting with inexpensive/less invasive tests, then more specialized tests if necessary).	Example: Thyroid disease diagnosis algorithm(starting with TSH)
<i>Clinical- Laboratory Communication</i>	Consulting with laboratory specialists (pathologists/ laboratory medicine physicians) regarding specialized tests or unexpected results.	Ensuring optimal test selection and accurate result interpretation



Do's and Don'ts When Ordering Laboratory Tests

- Dynamics of Laboratory Markers
 - Free Hormones, Total Hormones
 - Qualitative or Quantitative Tests
 - Age & Gender Adjustment
 - Vegetarians Laboratory Results
 - Transgender Laboratory Results
- 

این مرکز مجهز به دستگاه
کمی لومینسانس ایمونوآنالایزر
اتوماتیک جهت سنجش هورمونها می باشد



تاریخ : ۱۴۰۱/۰۵/۱۹

سن / جنس : ۶۸ سال / M

آزمایشگاه تشخیص طبی



1 of 1

آزاد

01:03

Hematology

*Test		Result	Units	Method	Reference Range
WBC	H	26.7	$10^9/L$		3.9-11.5
Neutrophils	L	18.2	%		43.0-78.0
Lymphocytes	H	69.8	%		15.0-45.0
Monocytes	H	12.0	%		4.0-9.0
RBC		4.34	$10^{12}/L$		3.70-5.40
Hemoglobin		14.6	mg/dL		11.7-16.6
Hematocrit		42.9	%		34.0-48.0
MCV	H	98.8	fL		79.0-98.0
MCH		33.6	pg		27.7-34.0
MCHC		34.0	g/dL		31.0-36.0
RDW-CV		13.8	%		11.5-15.6
RDW-SD		51.6	fL		39.0-46.0
Platelets		152	$10^9/L$		125-385
MPV		9.8	fL		7.0-11.1
PDW		13.1	%		8.3-56.6

Note: L :Low H :High

Note: Normochromic normocytic.

WBC counts were confirmed manually.

WBC differential count was confirmed by manual method.

Blood cells morphology is reported based on the ICSH 2015 guideline.

Note Reference ranges have been adjusted for age and gender.

Kian Lab Director:

Supervised by

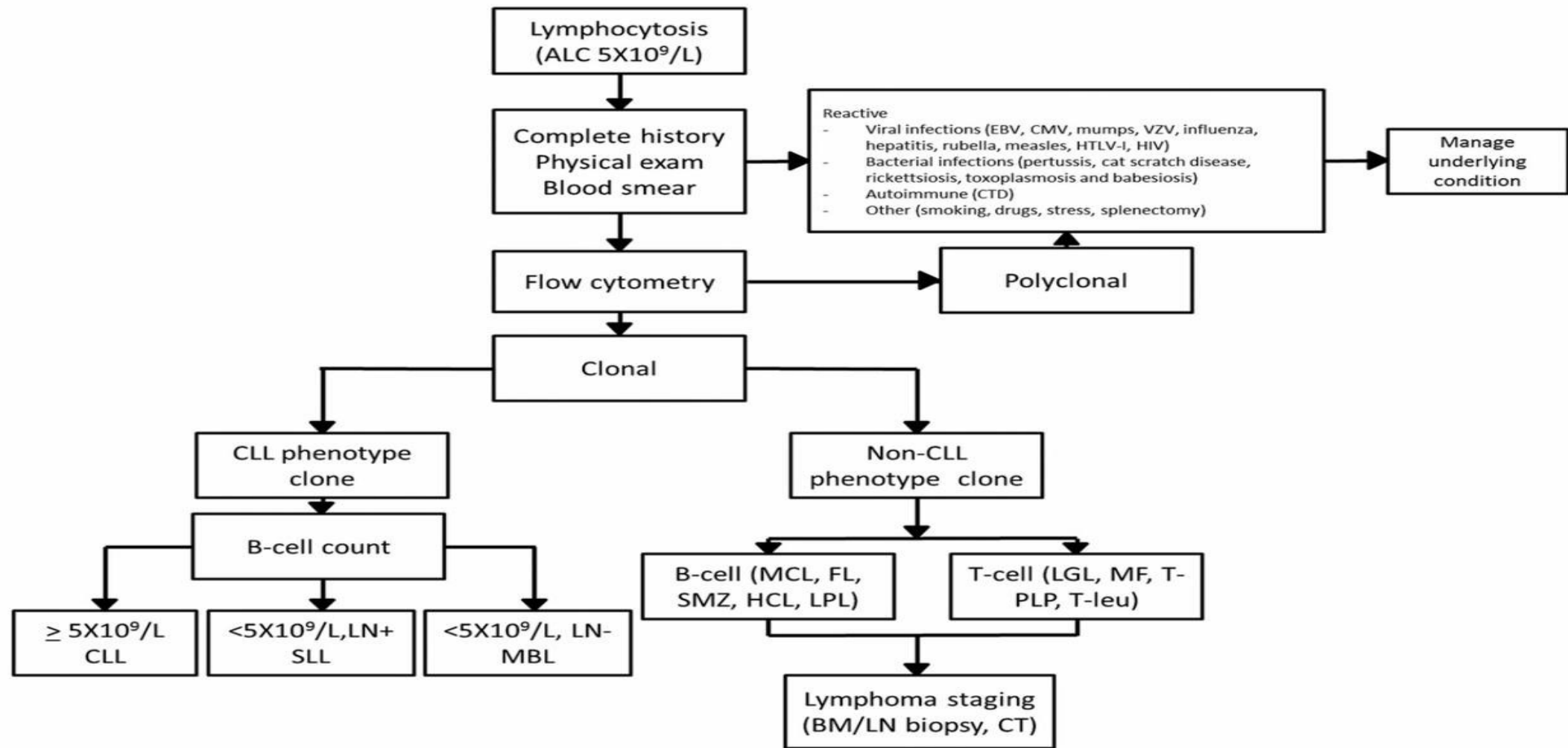


Figure 1. General approach to the workup of lymphocytosis. BM, bone marrow; CMV, cytomegalovirus; CTD, connective tissue disease; EBV, Epstein-Barr virus; FL, follicular lymphoma; HCL, hairy cell leukemia; HTLV, human T...

	2008 WHO Classification	2016 WHO Classification
Major Criteria	1. Hb > 18.5 g/dL in men/Hb > 16.5 g/dL in women or other evidence of increased RCM; 2. Presence of <i>JAK2V617F</i> or other functionally similar mutation such as <i>JAK2</i> exon 12 mutation	1. Hb > 16.5 g/dL in men/Hb > 16.0 g/dL in women, or Hct > 49% in men/Hct > 48% in women, or increased RCM; 2. BM biopsy showing hypercellularity for age with trilineage growth (panmyelosis) including prominent erythroid, granulocytic, and megakaryocytic proliferation with pleomorphic, mature, megakaryocytes (differences in size); 3. Presence of <i>JAK2V617F</i> or <i>JAK2</i> exon 12 mutation
Minor Criteria	1. BM biopsy showing hypercellularity for age with trilineage growth (panmyelosis) with prominent erythroid, granulocytic, and megakaryocytic proliferation; 2. Subnormal serum EPO level; 3. Endogenous erythroid colony formation in vitro	Subnormal serum EPO level
Criteria required for diagnosis	All 2 major and 1 minor or the first major and 2 minor criteria	All 3 major or the first 2 major and the minor criterion

Abbreviations: Hb: hemoglobin; Hct, hematocrit; RCM, red cell mass; BM, bone marrow; EPO, erythropoietin.

Diagnostic criteria for polycythemia vera according to the World Health Organization (WHO) classification.

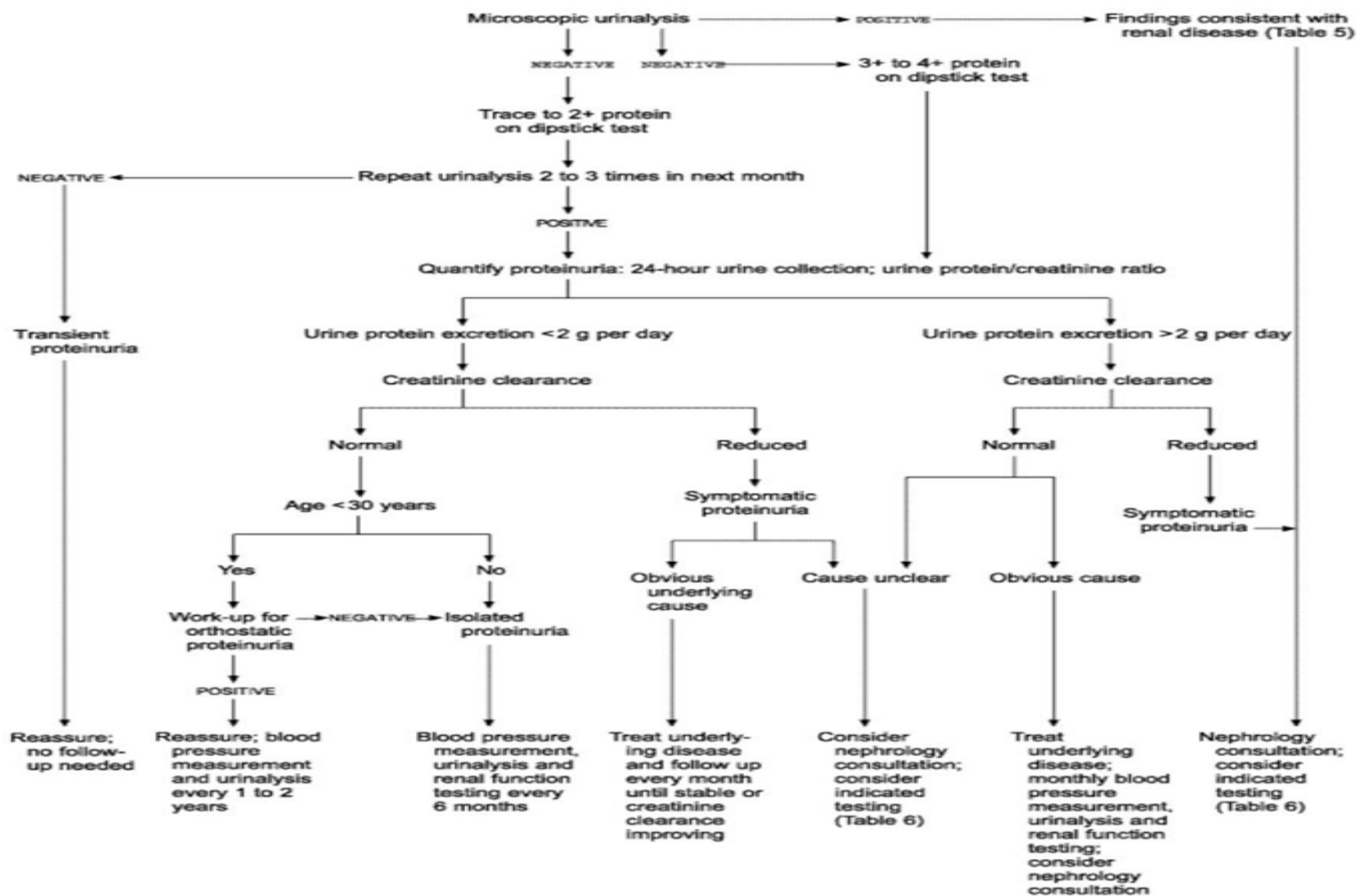
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graph TD; A[Why Rational Ordering Matters?] --- B[The Pitfalls of Irrational Ordering]; A --- C[Tools for Rational Decision-Making]; A --- D[Lab Supports Rational Ordering]
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- The Pitfalls of Irrational Ordering

Why Rational Ordering Matters?

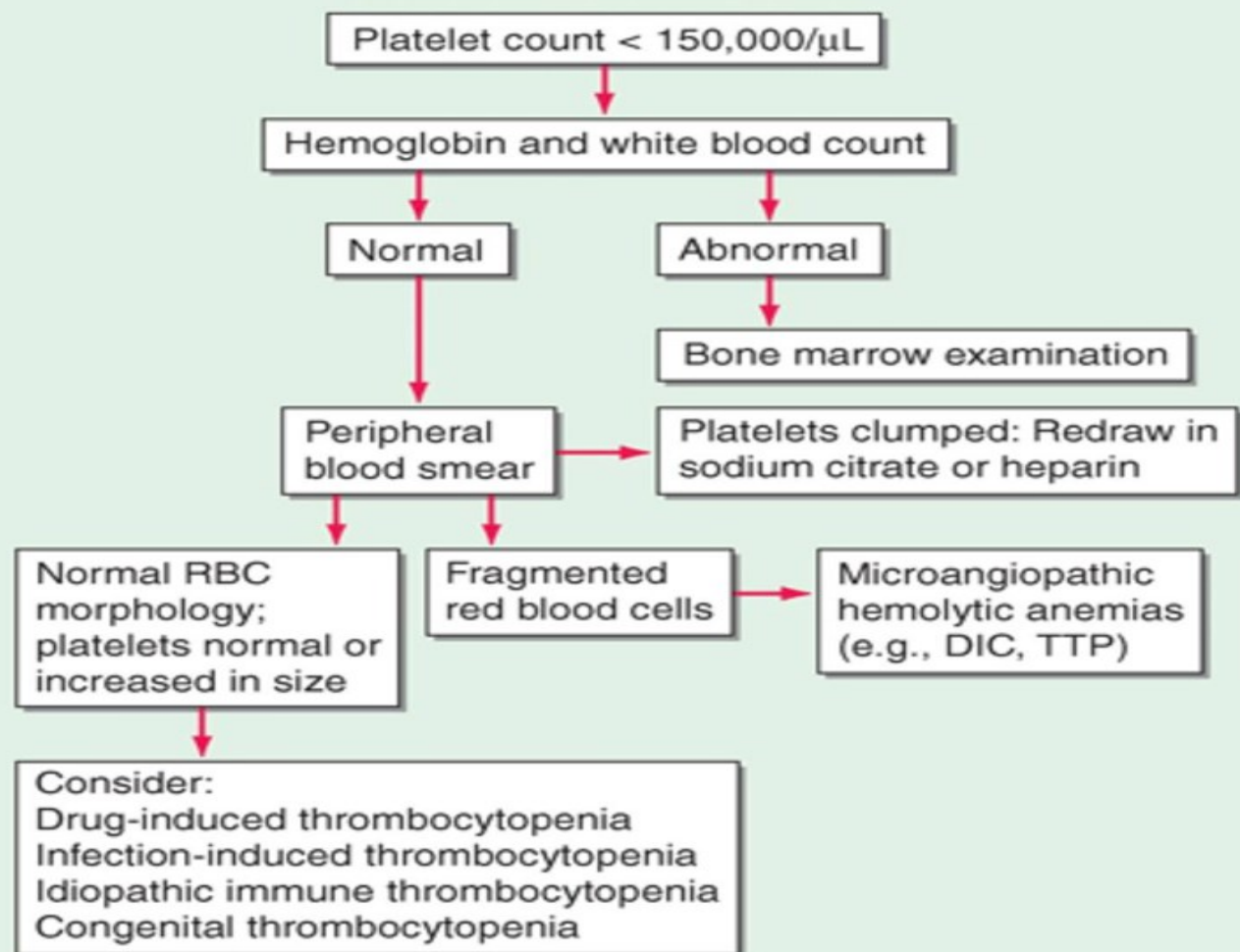
- Tools for Rational Decision-Making

- Lab Supports Rational Ordering



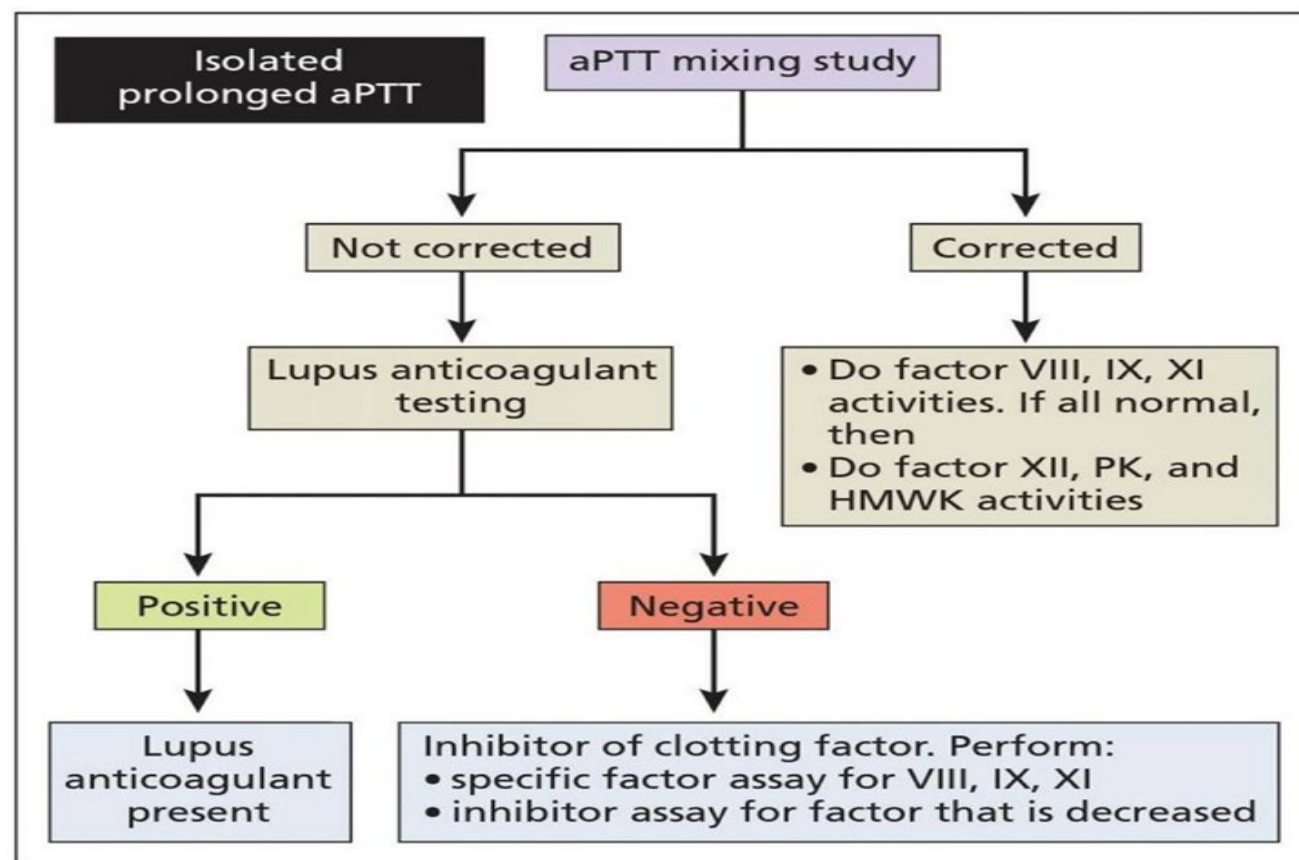
Algorithm for evaluating the patient with proteinuria.

ALGORITHM FOR THROMBOCYTOPENIA EVALUATION



Source: Longo DL, Fauci AS, Kasper DL, Hauser SL, Jameson JL, Loscalzo J: *Harrison's Principles of Internal Medicine*, 18th Edition: www.accessmedicine.com

Algorithm for evaluation of an isolated prolonged activated partial thromboplastin time (aPTT).



Be Well,
Practice
Well

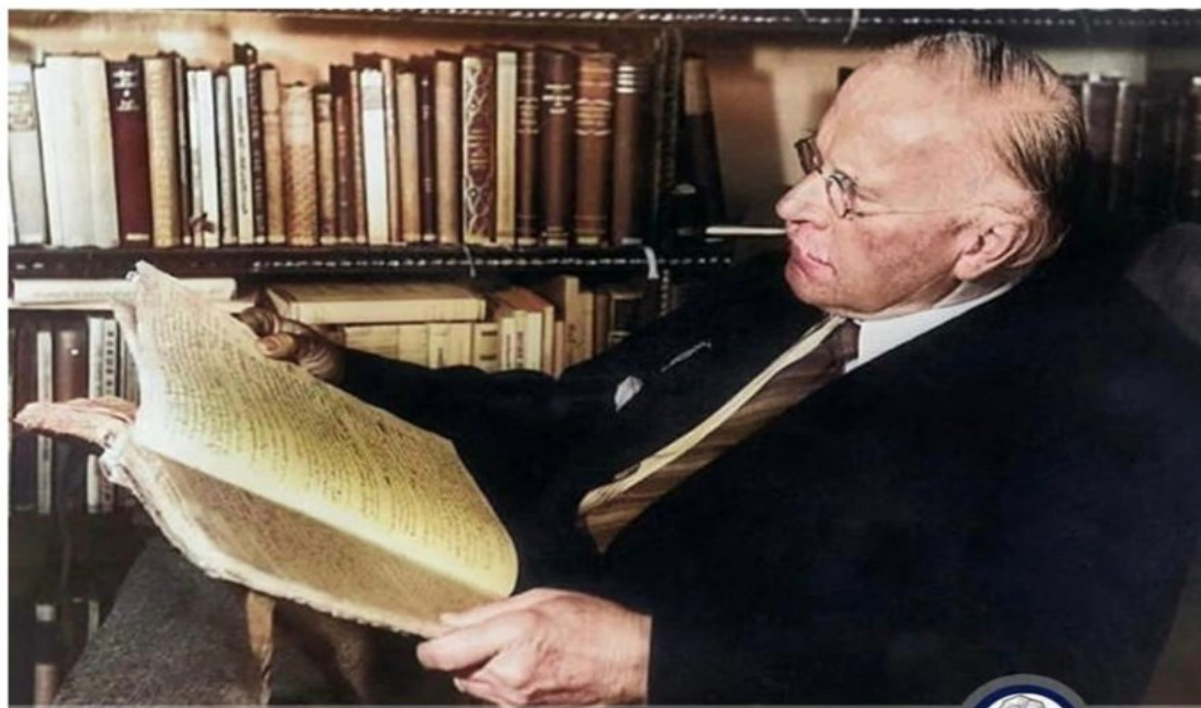


RATIONAL ORDERING: A STANDARD OF CARE NOT A CHOICE

Moving

Ahead

in Medicine



هر اندازه که **تنها و مهجور** باشید،
اگر کار خود را با حقیقت و با وجدان انجام
بدهید، **دوستانی ناشناس جستجویتان** میکنند
و به **سوی شما** می آیند

• **کارل یونگ** — @spirit_and_life_





با تشکر از توجه شما