

# Integrative Case Management

Winter 2023

Week 3

# WBC Laboratory Values

**Laboratory:** WBC 17,000/mm<sup>3</sup> H; Neutrophils 70% H , Bands 15% H,  
Lymphocytes 15% L

**WBC:** 3.7x11.0

**Neutrophils:** 40-74%

**Bands:** 0-10%

**Lymphocytes:** 20-44%

Reference ranges at individual laboratories are variable.

# What do these values signify?

## **WBC**

High: Acute viral infection, acute bacterial infection, leukemia, may also see and increased ESR

Low: chronic viral infection, chronic bacterial infection, decreased production, certain medications, chemotherapeutic agents and radiation

**Neutrophils** (in their immature phase neutrophils are referred to as bands)

High: childhood infections, acute localized bacterial infections, chronic bacterial or viral infection, inflammation, leukemia, stress

Low: blood diseases that affect the output from the bone marrow, possible chronic viral infection

# What do these values signify?

**Bands** are young non segmented neutrophils. Can be increased in acute infection even when there is no increase in total WBC count. The increase in bands is known as a “shift to the left.”

High: active infection, indication of a regenerative “shift to the left” and a better prognosis.

Low: not usually a problem.

## **Lymphocytes**

High: acute viral infection, chronic viral infection, infectious mono, leukemia, lymphoma

Low: Active infection, chronic infection, HIV, AIDS, immunosuppression, bone marrow failure, chemotherapy

# Case 1

A 34 year old female presents to your clinic with a 10 day history of cough. The cough followed what seemed like the common cold. The cough was initially dry and within a few days she developed thick phlegm that has recently become green with rust colored streaks. The patient reports feeling a little warm sometimes but hasn't taken her temperature.

The patient reports that she doesn't feel great and sleep has been really difficult.

Physical exam reveals reduced breath sounds, dullness to percussion and positive egophony over the left lower lung fields. Patient is non-cyanotic and non diaphoretic. The patient coughs frequently in in the office and appears visibly fatigued and uncomfortable.

Pulse: 102 bpm, RR: 24 breaths per minute, Temp: 101.0 F BP: 122/84

## Case 2

A 62 yo male presents with cough and shortness of breath. He is concerned that something worse might be happening after having hemoptysis for the past 3 days. He also reports waking in the middle of the night drenched in sweat for the past few weeks. When asked, the patient denies ever having a positive PPD and was screened several years ago. His chart indicates he was in the emergency department last week with similar symptoms and was diagnosed with community acquired pneumonia and discharged with an antibiotic.

PMHx: Hypertension, dyslipidemia, COPD, atrial fibrillation, generalized anxiety disorder

## Case 2 cont.

Family history: Parents are both deceased, father had and MI 4 years ago, mother had type 2 DM and passed from a ruptured abdominal aortic aneurysm

Social history: retired recently moved from India to live with his son who is in medical school. Smoked ½ ppd x40 years, drinks 6-8 beers per day and admits to drinking more every few days since the passing of his wife 6 months ago.

Vitals: Temp: 100.8°F, P: 96 bpm, RR: 24 breaths per minute, BP: 150/84 mm Hg, pO<sub>2</sub> 92%, Ht: 5'10", Wt: 56.4 kg

General slightly disheveled in mild to moderate distress.

Pulm bronchial breath sound in RUL.

# Questions

What are your initial impressions?

Other questions you would like to ask?

What tests would you like to see?

What imaging?

What are some potential concerns?



# Assignment

Find something to read on the topics we have covered this week.

Include the link to what you found. (1)

Read the article. (3)

Reflect on your reading. (6)

Do this for 2 readings from the topics we covered this week (acute bronchitis and tuberculosis)

# References and resources

[Reference Ranges for CBC](#)

[Acute Bronchitis](#)

[Bronchopneumonia: What Is It, Contagiousness, Diagnosis, Treatment, and More | Osmosis](#)

[CASE STUDIES IN TUBERCULOSIS](#)

[TB Case Study Example | School of Medicine | LSU Health New Orleans](#)

[Tuberculosis | Infectious Diseases: A Case Study Approach | AccessPharmacy | McGraw Hill Medical](#)

[TB Case Studies -w/ contact tracing](#)

[TB Case Studies: Who, When, How](#)

[TB Case Studies | Immunopaedia](#)

[THE SAN FRANCISCO MODEL: TUBERCULOSIS OUTREACH PREVENTION SERVICES \(TOPS\)](#)

[1904.11 - Recording criteria for work-related tuberculosis cases. | Occupational Safety and Health Administration](#)

[18. Tuberculosis \(I\): The Era of Consumption](#)

[19. Tuberculosis \(II\): After Robert Koch](#)