

## Neutrophilic leukocytosis of undetermined etiology

-Differential diagnosis includes infection, but also non-infectious etiologies:

### a. Trauma/Tissue destruction

- burns, trauma
- tissue infarction (MI)/ischemia/gangrene
- metastatic/necrotic cancers, carcinomatosis (esp. GI/renal/lung)
- hemolysis
- hemorrhage/acute blood loss
- surgery
- sickle cell disease

### b. Inflammatory processes

- pancreatitis
- vasculitis/rheumatic diseases
- granulomatous dis
- chemical phlebitis/meningitis
- alcoholic hepatitis/cirrhosis
- acute intermittent porphyria

### c. Myeloproliferative/hematologic disorders

- polycythemia vera
- CML
- Hodgkins dz
- multiple myeloma
- Hemolytic anemia, ITP

### d. Metabolic

- diabetic ketoacidosis
- gout
- uremia
- hypoxia
- thyrotoxicosis/hyperthyroidism
- pregnancy/labor
- post-seizure
- paroxysmal atrial tachycardia

### e. Toxic/drugs

- Steroids (acute or chronic), GCSF/GM-CSF, lithium, epinephrine, heavy tobacco use, lead poisoning, mercury poisoning

### f. Splenectomy/polysplenia/hyposplenic/sickle cell disease

### g. Congenital

- Down syndrome
- hereditary/idiopathic neutrophilia
- leukocyte adhesion deficiency

### f. Misc. (reactive, transient)

- postpartum or post surgery
- heavy exertion or exercise
- acute pain, panic attack
- nausea/vomiting
- lab error (clumped PLTs, cryoglobulins)

**Table 2. Normal White Blood Cell Distribution**

<i>White blood cell line</i>	<i>Normal percentage of total leukocyte count</i>
Neutrophils	40 to 60
Lymphocytes	20 to 40
Monocytes	2 to 8
Eosinophils	1 to 4
Basophils	0.5 to 1

Information from reference 8. <https://www.aafp.org/afp/2015/1201/h-i-res/afp20151201p1004-t2.gif>

Leukemoid reactions ( $> 50K/mm^3$ ) are commonest w/ TB, fulminant sepsis, severe burns, metastatic/necrotic cancers, carcinomatosis (esp. GI/renal/lung), Hodgkins dz/MM, acute hemorrhage/severe hemolysis.