Neutropenia

Neutropenia is a condition that occurs when a certain kind of white blood cells called neutrophils became lower than normal. These cells are made in the bone marrow and fight infections. These cells protect against bacteria and viruses. The fewer number of neutrophils you have, and the longer your body remains without it, you become more at risk for a severe infection.

CAUSES

The cause of neutropenia may be hard to determine. However, it is usually due to three main problems:

- Decreased production of neutrophils.
- Increased destruction of neutrophils.
- The white blood cells (WBCs) are in areas where they cannot fight infections.

The infection may be too overwhelming for the white cells and the bone marrow to keep up.

SYMPTOMS

There are no specific symptoms other than those that come from a possible infection as a result of a low WBC.

DIAGNOSIS

Diagnosis is made by a blood test. A complete blood count is than performed.

The normal level of neutrophils in human blood differs with age and race. Infants have lower counts than older children and adults. African Americans are lower in counts than Caucasians or Asians. The average adult level is 1500 cells/mm^3 of blood. Neutrophil counts (in cells/mm^3) are interpreted as follows:

- Greater than 1000 gives normal protection against infection.
- 500-1000 gives an increased risk for infection.
- 200-500 is a greater risk for severe infection.
- Lower than 200 is a marked risk of infection. This may require hospitalization and treatment with medications to kill germs (*bacteria*) and sometimes *fungi*.

TREATMENT

Treatment depends on the underlying cause, severity and presence of infections or symptoms. It also depends on the health of the patient. Your caregiver will discuss the diagnosis and treatment course with you. They can answer questions you may have. Mild cases are often easily treated and have a good outcome. Preventative measures may also be started to limit risk of infections.

- Medications.
  - Patients with fever and other signs of infection may be treated with medications that kill germs (*antibiotics*).
  - Medications known to cause this condition are stopped.
- Nutritional deficiencies are corrected by eating green vegetables to supply folic acid and by vitamin B supplements.
- Being exposed to pesticides is stopped if the patients neutropenia is related to pesticide exposure.
- Patients receiving chemotherapy for cancer may be given a blood growth factor called sargramostim (Leukine, Prokine). This stimulates WBC production.
- Patients with *Felty's syndrome* who have repeated infections may have their spleens removed.

PROGNOSIS

- The prognosis for mild or longstanding (*chronic*) neutropenia is great.

- Recovery from severe (*acute*) neutropenia depends on how severe the patient's infection is and how fast it was treated.

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