

Unit 1: Lesson 2 – The Innate Immune System

GLOSSARY

Complement system

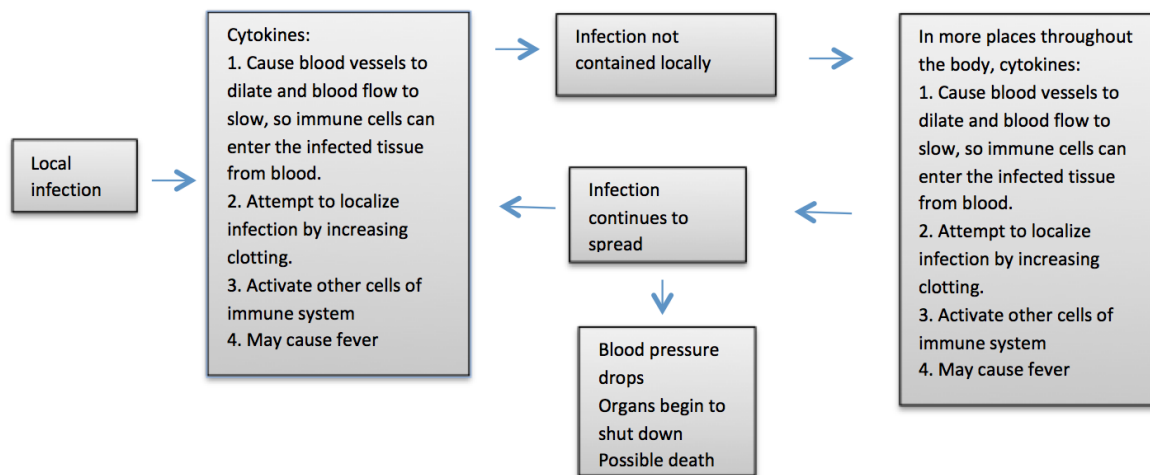
A class of proteins in the blood plasma that identifies potential pathogens and activates the inflammatory response to an infection. During some bacterial infections, the proteins help kill bacteria by making holes in the bacterial membrane.

Cytokines

Small protein molecules that play a role in all phases of the immune response. They mediate the innate immune response with several functions:

- Cause fever
- Activate other immune system cells
- Decrease ability of viruses to replicate
- Cause clotting to keep an infection localized

If the immune response gains too much momentum, such as can occur when an infection is not kept localized, too many cytokines can be released leading to septic shock. This is sometimes referred to as a “cytokine storm.”



Edema

Swelling of tissue that is a feature of the inflammatory response.

Inflammatory response

A response initiated by macrophages and characterized by pain, redness, heat and swelling at the site of infection. The inflammatory response has three purposes:

- Allows additional immune cells to come to the site of the infection
- Helps in local blood clotting to prevent further spread of the infection
- Helps promote the repair of damaged tissues

Macrophages

Long-lived cells of the immune system that are often found in tissues just beneath epithelial cells. These cells are activated when a pathogen breaches a physical barrier, such as the skin. These cells play a central role in the innate immune response because they ingest pathogens and debris, such as dead cells in tissues. They also release cytokines, which activate other parts of the immune response.

Mucous Membranes

A layer of epithelial cells that lines many parts of the body including the digestive and reproductive tracts and secretes mucous to protect the body against pathogens.

Natural killer (NK) cells

Cells of the innate immune system that are activated early during an infection and play a key role in preventing it from spreading.

Neutrophils

Cells that circulate in the blood, then enter tissues when signaled by cytokines to combat an infection. These short-lived cells ingest and kill pathogens and are a major component of pus.

Pathogen-associated molecular patterns (PAMPs)

Antigenic molecules found in bacterial cell walls, flagella, bacterial DNA, and viral RNA that are characterized by repeat patterns that make them recognizable as foreign to the immune system. The innate immune system uses these repeating patterns to detect pathogens as foreign.

Phagocytosis

A process in which a cell, such as a macrophage, engulfs another cell or particle to create a compartment and ingest it in preparation to destroy it.