Lecture notes for Monday October 21, 2002

Outline

- White blood cells
- Platelets
- Blood groups

Granular WBCs

- Neutrophils
  - main function = phagocytosis
  - mainly of bacteria
- Eosinophils
  - main function = phagocytosis of LARGE multicellular parasites
  - also combat histamine
- Basophils
  - granules contain histamine & heparin
  - involved in allergic response & inflammatory response

Agranular WBCs

- Monocytes
  - become macrophages = large phagocytes (virus & bacteria)
- Lymphocytes
  - T cells involved in immune response; combat viruses, cancer cells…

Terminology:
- Antigen
- Antibody
  - B cells specialized in production of antibodies

Normal WBC count:
5,000-10,000 cells per mm 3

Leukocytosis = in WBC count

Differential WBC count
**WBC disorders**

- Leukemia = production of malignant WBCs
  - acute
  - chronic

**Bone Marrow Transplant**

- Use of healthy bone marrow stem cells
- Allogeneic BMT
- Autologous BMT

**Hemostasis**

= prevention of blood loss

- Platelets = fragments of megakaryocytes
- Function to prevent blood loss

**Hemostasis**

1. Vascular Spasm: narrowing of blood vessels
2. Platelet Plug Formation:
   - platelet adhesion
   - platelet release reaction
   - platelet aggregation
   - platelet plug

**Clotting**

- Clot formation = coagulation
- Problems:
  - thrombosis, thrombus
  - Embolus
- Treatment: “clot busters” & aspirin

**Blood Groups**

- RBC surface antigens = agglutinogens
- Genetically determined
- ABO blood group: antigens A & B
ABO blood group

- Type A = antigen A + antibody B
- Type B = antigen B + antibody A

Rh blood group

- Antigen Rh = positive
- Lack of = negative
- E.g. A +tive =
- Hemolytic disease of the newborn (HDN)