Immunosuppression

The term "immunosuppression" is used for different modalities used to prevent GVHD either as prophylaxis or treatment.

• Prophylaxis to prevent GVHD

Aim: suppression of the immune reaction of donor lymphocytes that recognize incompatible histocompatibilty antigens of the patient. The following parameters contribute:

- Selection of the best histocompatible donor
- Depletion of T cells in the graft (eliminates alloreactive T cells)
- Inhibition of T cell activation by immunosuppressive drugs (cyclosporine A, tacrolimus, methotrexate)

-It is of note that all measures taken to inhibit allogeneic reactions augment the risk of relapse because the same allogeneic T cells also attack the last residual leukemic cell (GvL). After a relapse, one can take advantage of this effect by infusion of fresh donor T cells. This treatment is called donor lymphocyte infusion (DLI)

• GVHD treatment

GVHD occurs in 20-50% of the patients in spite of prophylaxis
--> for the immunosuppressive drugs used (glucocorticoids, anti-lymphocytes antibodies… ;see list of drugs)

Main problems of drugs: side effects

Δ Although condition suppresses the immune system, it is not referred to as immunosuppression

--> See also the "drugs list" and "action sites" pdf

Recipient & Transplantation

- Hematopoiesis
- Type of transplant
- Indications
- Decision to treat
- Conditioning
- Transplantation

Donor & Compatibility

- Criteria
  - HLA typing
- Search
- Stem cell source

Transplantation barriers

- Structures recognized
  - MHC
  - mHC
- Allorecognition
  - T cells
  - B cells
  - NK cells

Complications

- Graft rejection
- GVHD/GVL
- Infections
- Side effects
- Relapse

Reconstitution

- Engraftment
- Myeloid cells
- T cells
- B cells
- Chimerism

LERANING OBJECTIVES
• Molecular mechanisms of immunosuppressive drugs