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PRESENTER : DR. ARCHANA

MODERATOR: DR. SRI SMITHA

TOPIC: Rejection of Tissue Transplants

Summary:

This document summarizes the key points from a presentation by Dr. Archana R. on tissue transplant rejection, moderated by Dr. Sri Smitha.

1. Overview:
Rejection is the primary barrier to successful tissue transplantation, where the recipient's immune system attacks the graft, recognizing it as foreign.

2.Mechanisms of Rejection:
- HLA Differences: Major cause of rejection due to genetic variability.
- Pathways:
  - Direct: Graft APCs present antigens directly to recipient T cells.
  - Indirect :Host APCs present processed graft antigens.
- Activation of CD8+ cytotoxic T lymphocytes (CTLs) and CD4+ helper T cells (Th1).
- B cells contribute with antibody production.

3. Patterns of Graft Rejection
- Hyperacute Rejection: Immediate; mediated by preformed antibodies, rare due to cross-matching.
- Acute Rejection :Days to weeks; includes cellular (T cell-mediated) and antibody-mediated types.
- Chronic Rejection :Months to years; characterized by vascular changes and interstitial fibrosis.

4.Management & Therapy
- HLA Matching: Important for kidney transplants.
- Immunosuppressive Drugs: Steroids, Mycophenolate mofetil, Tacrolimus, IVIG, and others.
- Emerging Strategies : Blocking costimulatory signals to prevent sensitization.

5. Disadvantages of Immunosuppression
- Opportunistic infections (e.g., Polyoma virus, EBV, HPV)
- Risk of lymphomas and carcinomas

6. Hematopoietic Stem Cell Transplantation (HSCT)
- Used for diseases like aplastic anemia and hemoglobinopathies.
- Sources: bone marrow, peripheral blood, umbilical cord blood.

7. Graft Versus Host Disease (GVHD)
- Acute GVHD : Skin, liver, gut involvement.
- Chronic GVHD : Fibrosis, autoimmunity, immune suppression.

8. Complications of GVHD:
- Immunodeficiency leading to severe infections, notably CMV pneumonitis.