



SENGAMALA THAYAAR EDUCATIONAL TRUST WOMEN'S COLLEGE

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Sundarakkottai, Mannargudi-614 016.

Thiruvarur (Dt.), Tamil Nadu, India.

III B.SC BIOCHEMISTRY CC-VIII- IMMUNOLOGY (16SCCBC8) SEMESTER: VI

PREPARED BY

Dr. R. NALINI

ASSISTANT PROFESSOR

PG & RESEARCH DEPARTMENT OF BIOCHEMISTRY

IMMUNOSUPPRESSANT DRUGS

Immunosuppressant drugs are a class of drugs that suppress, or reduce, the strength of the body's immune system. Some of these drugs are used to make the body less likely to reject a transplanted organ, such as a liver, heart, or kidney. These drugs are called antirejection drugs. Other immunosuppressant drugs are often used to treat autoimmune disorders such as lupus, psoriasis, and rheumatoid arthritis.

Autoimmune conditions

Immunosuppressant drugs are used to treat autoimmune diseases. With an autoimmune disease, the immune system attacks the body's own tissue. Because immunosuppressant drugs weaken the immune system, they suppress this reaction. This helps reduce the impact of the autoimmune disease on the body.

Autoimmune diseases treated with immunosuppressant drugs include:

- ✓ Psoriasis
- ✓ Lupus
- ✓ rheumatoid arthritis
- ✓ Crohn's disease
- ✓ multiple sclerosis
- ✓ alopecia areata

Organ transplant

- Almost everyone who receives an organ transplant must take immunosuppressant drugs. This is because the immune system sees a transplanted organ as a foreign object.
- As a result, the immune system attacks the organ as it would attack any foreign cell. This can cause severe damage and lead to needing the organ removed.
- Immunosuppressant drugs weaken the immune system to reduce the body's reaction to the foreign organ.
- The drugs allow the transplanted organ to remain healthy and free from damage.

List of immunosuppressants

- There are several different types of immunosuppressant drugs.
- The drug or drugs will be prescribed depend on whether the person have an organ transplant, an autoimmune disorder, or another condition.
- Many people who receive immunosuppressant drugs are prescribed medications from more than one of these categories.

❖ Corticosteroids

- ✓ prednisone (Deltasone, Orasone)
- ✓ budesonide (Entocort EC)
- ✓ prednisolone (Millipred)

❖ Janus kinase inhibitors

- ✓ tofacitinib (Xeljanz)

❖ Calcineurin inhibitors

- ✓ cyclosporine (Neoral, Sandimmune, SangCya)
- ✓ tacrolimus (Astagraf XL, Envarsus XR, Prograf)

❖ mTOR inhibitors

- ✓ sirolimus (Rapamune)
- ✓ everolimus (Afinitor, Zortress)

❖ IMDH inhibitors

- ✓ azathioprine (Azasan, Imuran)
- ✓ leflunomide (Arava)
- ✓ mycophenolate (CellCept, Myfortic)

❖ **Biologics**

- ✓ abatacept (Orencia)
- ✓ adalimumab (Humira)
- ✓ anakinra (Kineret)
- ✓ certolizumab (Cimzia)
- ✓ etanercept (Enbrel)
- ✓ golimumab (Simponi)
- ✓ infliximab (Remicade)
- ✓ ixekizumab (Taltz)
- ✓ natalizumab (Tysabri)
- ✓ rituximab (Rituxan)
- ✓ secukinumab (Cosentyx)
- ✓ tocilizumab (Actemra)
- ✓ ustekinumab (Stelara)
- ✓ vedolizumab (Entyvio)

Monoclonal antibodies

- ✓ basiliximab (Simulect)
- ✓ daclizumab (Zinbryta)

Treatment regimen

- All immunosuppressant drugs are available only by a prescription.
- Immunosuppressant drugs come as tablets, capsules, liquids, and injections.
- The doctor will decide the best drug forms and treatment regimen for the patients.
- They may prescribe a combination of drugs. The goal of immunosuppressant therapy is to find the treatment plan that will suppress the immune system while having the fewest, least harmful side effects.

Tests and dosage changes

- During treatment with immunosuppressant drugs, they have regular blood tests. These tests help to monitor how effective the drugs are and whether dosage changes are needed. The tests will also help to know whether the drugs cause side effects.
- If a person has an autoimmune disease, the doctor may adjust the dosage based on how their condition responds to the medication.

- If a person received an organ transplant, the doctor may eventually reduce the dosage. This is because the risk of organ rejection lessens over time, so the need for these medications may decrease.
- However, most people who have had a transplant will need to take at least one immunosuppressant drug throughout their lifetime.

Side effects

- Side effects vary greatly for the many different immunosuppressant drugs available. However, all immunosuppressant drugs carry the serious risk of infection.
- When an immunosuppressant drug weakens the immune system, the body becomes less resistant to infection. That means they make a person more likely to get infections.
- It also means that any infections get will be harder to treat.
- If a person has any of these symptoms of infection, consult the doctor right away:
 - ✓ fever or chills
 - ✓ pain in the side of lower back
 - ✓ trouble urinating
 - ✓ pain while urinating
 - ✓ frequent urination
 - ✓ unusual tiredness or weakness

Drug interactions

- Before a person start taking an immunosuppressant drug, be sure to tell the doctor about all medications a person take. This includes prescription and over-the-counter medications, as well as vitamins and supplements.
- The doctor can tell about the possible drug interactions that the immunosuppressant medication might cause. Like side effects, the risk of drug interactions depends on the specific drug you take.

Warnings

- Immunosuppressant drugs can cause problems for people with certain health conditions.
- Tell the doctor if they have any of these conditions before start to take immunosuppressants:

- ✓ allergy to the specific drug
- ✓ history of shingles or chickenpox
- ✓ kidney or liver disease

Pregnancy and breastfeeding

- Some of these drugs can cause birth defects, while others carry milder risks during pregnancy and breastfeeding.
- In any case, if a woman has planning to become pregnant, talk to the doctor before taking an immunosuppressant drug. The doctor can tell about the risks of the specific drug might be taking.