Common Transplant Medication Side Effects

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Learning Objectives

1. Discuss the classes of anti-rejection medications
2. Identify common transplant medication side effects
3. Discuss ways to help deal with side effects
4. Test Your Knowledge!
Weighing the Risk versus Benefit

Efficacy

Toxicity
What are Immunosuppressant Medications?

• Medications that decrease your body’s immune system
• Also known as anti-rejection medication

• Classified into 2 categories
  • **Induction agents**
    • Used only around the time of transplant
  • **Maintenance agents**
    • Life-long immunosuppression
    • Combination therapy
Maintenance Anti-Rejection Medications

• **Calcineurin Inhibitors**
  • Tacrolimus Extended Release (Advagraf ®)
  • Tacrolimus Immediate Release (Prograf ®)
  • Cyclosporine (Neoral ®)

• **Antiproliferative agents**
  • Mycophenolate Mofetil (Cellcept ®)
  • Mycophenolate Sodium (Myfortic ®)
  • Azathioprine (Imuran ®)

• **mTOR inhibitors**
  • Sirolimus (Rapamune ®)

• **Steroids**
  • Prednisone
Common Transplant Medication Side Effects

Not every patient will experience every side effect

- Increased blood sugars
- Gastrointestinal effects
  - Diarrhea
  - Abdominal pain
- Infection

- Nervous system effects:
  - Headaches
  - Tremor
  - Trouble Sleeping

- Increased blood pressure
Question

What percent of patients will have high blood pressure after kidney transplant?

A. 15%
B. 30%
C. 60%
D. 80%
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Increased Blood Pressure (Hypertension)

- Potential drug causes:
  - Cyclosporine
  - Prednisone
  - Tacrolimus
  - Sirolimus

- Things you can do:
  - Take your blood pressure medications as prescribed
  - Log blood pressure readings at home
  - Diet modifications
  - Stress reduction
  - Physical activity
  - Limit alcohol use
Increased Blood Sugars (Diabetes)

• Occurs in 10-30% after transplant
• **Potential drug causes:**
  • Prednisone
  • Tacrolimus
  • Cyclosporine
  • Sirolimus

• **Things you can do:**
  • Healthy eating
  • Physical activity
  • Proper foot care
  • Check blood sugars more regularly and keep a log
You will need to record your blood sugar levels according to the testing pattern that you and your diabetes educator decide will work for you. Just because there are 8 spaces for each day doesn’t mean that you need to test that much. Only check and record your blood glucose test results according to YOUR pattern.

Daily blood glucose record

My before meal target ____________  My target 2 hours after the meal ____________

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<th>Date:</th>
<th>Breakfast Before</th>
<th>Breakfast 2h after</th>
<th>Lunch Before</th>
<th>Lunch 2h after</th>
<th>Dinner Before</th>
<th>Dinner 2h after</th>
<th>Bedtime</th>
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www.guidelines.diabetes.ca
Gastrointestinal (GI) side effects: Stomach upset

- **Potential drug causes:**
  - Prednisone
  - Mycophenolate
  - Tacrolimus
  - Sirolimus

- **Things you can do**
  - Take your prednisone with a full meal
  - Acid-reducing medicine, some require prescription
    - eg. Ranitidine (Zantac ®), Famotidine (Pepcid AC ®), Pantoprazole (Pantoloc®, Tecta ®)
  - For gas symptoms - Simethicone (Gas-X ®)
Gastrointestinal (GI) side effects: **Diarrhea**

- Watery, soft stool
- Usually self-limiting

**Potential drug causes:**
- Mycophenolate
- Tacrolimus
- Sirolimus

- Typically occurs shortly after starting the medication
- Often depends on dose
- Need to rule out other causes first!
Preventing Dehydration

• **Signs:**
  • Dry mouth, throat, skin
  • Feeling tired, dizzy, lightheaded, faint
  • Urinating less often
  • Headache
  • Fast heart rate and low blood pressure
Dealing with Diarrhea

- Keep hydrated and your electrolytes up!
  - Gatorade®, oral rehydration solutions eg. Gastrolyte®
- Soluble fibers eg. Oatmeal, soft bread (not whole grain)
- Loperamide (Imodium®) (short term use < 48 hrs)
- Hold these medicines if dehydrated
  - ACE-Inhibitors eg. RamiPRIL
  - ARBs eg. CandeSARTAN
  - Water pills eg. Furosemide (Lasix®)
- Check blood sugars more often if have diabetes
When to see a doctor
When you have heavy diarrhea for more than 1 day, signs of dehydration and any of the following:

- Fever
- Severe stomach pain
- Bloody or black tarry stool
- Nausea, vomiting
- Mucous in your stool
Infections

Report signs of illness to your doctor or transplant team:

- Chills
- Fast pulse
- Sore throat
- Burning when urinating
- Graft site pain
- Cold or cough that will not go away
- Temperatures above 37.5°C
Preventing Infections

• Antibiotic typically prescribed after transplant to prevent infection
  eg. Cotrimoxazole (Septra ®), Dapsone
• Hand hygiene
• Avoid sharing personal items
• Take full course of antibiotics, when prescribed
• Get your annual flu vaccine

*no live vaccines*
eg. Shingles vaccine (Zostavax ®)
Antibiotics

Antibiotics/Anti-fungals to avoid:

- Erythromycin
- Clarithromycin (Biaxin®)
- Rifampin (Rifadin®, Rofact®)
- Ketoconazole
Effects on the Nervous System

- Headaches
- Trembling of the Hands
- Trouble Sleeping
Headaches

• **Potential Triggers:** stress, lack of food/sleep, hormonal changes, certain foods (eg. wine, cheese), caffeine, infection

• **Potential medication causes:**
  - Tacrolimus
  - Prednisone
  - Cyclosporine
  - Sirolimus

• **Things you can do:**
  - Keep well hydrated
  - Stress management
  - Avoid caffeine and alcohol
  - Keep blood pressure in control
Harmful Medications

Avoid non-steroidal anti-inflammatory drugs (NSAIDs)

- Ibuprofen (brands: Advil®, Motrin®)
- Naproxen (brands: Aleve®, Naprosyn®, Maxidol®, Vimovo®)
Tremor

• Typically in the hands

• **Potential drug causes:**
  • Tacrolimus
  • Cyclosporine

• Usually related to drug levels in the blood

• Report this is the transplant team if becomes problematic or there is a sudden increase in severity
Trouble Sleeping

• Potential medication causes
  • Prednisone
  • Tacrolimus
  • Cyclosporine
  • Mycophenolate

• Sleep Hygiene Tips
  • Take your prednisone as early in the day as possible
  • Limit daytime naps to 30 minutes (or avoid if possible)
  • Don’t watch TV or read in bed
  • Try to avoid caffeinated drinks close to bedtime
  • Exercise regularly
  • Establish relaxing bedtime routine
Protecting Your Skin

- Skin cancer is the most common cancer after transplant
- Check skin regularly
- Follow routine check-ups with family MD

Tips for Sun Protection

1. Use broad-spectrum sunscreen with SPF of 30 or more, even on cloudy days and winter
2. Use water-resistant sunscreen if exposed to water (eg. Swimming, sweating)
3. Reapply, Reapply, Reapply!
4. Wear broad-brimmed hat and sunglasses
5. Wear protective, tight-woven clothing
6. Plan outdoor activities early or late in the day – avoid peak sunlight between 11 am – 3 pm
Which of the following is safe for my kidney to take for a headache?

A. Ibuprofen (Advil ®)
B. Pantoprazole (Pantoloc ®)
C. Acetaminophen (Tylenol ®)
D. Naproxen (Naprosyn ®)
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Test Your Knowledge!

What type of vaccines should transplant patients avoid?

A. Inactivated
B. Inhaled
C. Live
D. Injected
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Test Your Knowledge!

What is the minimum SPF you should look for in a sunscreen?

A. 30 SPF
B. 5 SPF
C. 20 SPF
D. 100 SPF
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Medication List

- Keep at home and in your wallet/purse
- Keep accurate and up-to-date with changes, date of the change, prescriber
- Share with family/caregivers, and healthcare team
- Bring to every appointment or clinic visit along with medication in vials/blister packs
Create Your Own Medication Record

Create your own personalized medication book to record your medications, allergies and other health information. Keep it up-to-date (your pharmacist, doctor, nurse or other healthcare team member can help you with this). Bring it with you to all of your medical appointments or when you go to the hospital.

Why should you record your medicines:
- Keeping an up-to-date record of your medicines helps you; your loved ones and your healthcare team members have complete information about your medicines.
- It is very important to record exactly how you take your medicines (including whether or not you are taking them as directed).
- Knowing how you take your medicines helps everyone involved to make correct decisions about your care.
- Having a medication record can also be helpful at times when you might not be able to remember your medications, for example in an emergency.
- Medication records can help you to remember to take your medicines safely each day at the scheduled times.
- Accurate communication of your medicines can help to reduce the chance of errors.

Create your own medication record

Create your own personalized medication record. Choose the pages that best suit how you record your information about your medicines. These pages can be saved to your computer and updated whenever a change is made to your medication.

- Personal Information
- Immunization Record(s)

Medication Record(s):
- Medication Schedule
- Medication List
- Wallet List
- As Needed Medication Record
- Pain Medication Record
- Blood Pressure Record
- Cholesterol Record
- Tips on Medication Use

Create Medication Record
Take Control of Your Medications

• Knowledge is the best medicine!
• Learn about your medications
• Ask questions
We’re Here for You!

When in doubt, give us a shout!
THANK YOU!

Questions?