Notice the patient’s physician if you notice signs of marked immunosuppression. In some cases, the dosage of anti-rejection agents prescribed for patients may need to be reduced. This may help control the opportunistic infections and other oral complications. However, there will be patients who must never receive close supervision. Treatment of oral opportunistic infections is necessary in any transplanted patient.

Common immunosuppressive drugs and their side effects include:

- **Cyclosporine:** Changes in liver/lipid function, hyperkalemia, hypertension, and prolonged bleeding. Close monitoring of the patient’s blood pressure is necessary to prevent high blood pressure and an increased risk of heart attack.

- **Steroids:** Bone marrow suppression. Calcium channel blockers, for example, may exacerbate the problem. Children and adolescents are more likely to develop this side effect than adults. Oral and systemic infections are common side effects of this drug. A person who has immunity to the virus that causes HIV may be at risk for AIDS.

- **Fludarabine:** Bone marrow suppression. It is used as an alternative to azathioprine. Decreased white cell counts, opportunistic infections, and gastrointestinal problems.

- **Corticosteroids:** Steroids increase the risk of oral and systemic infections, and at the same time, they may mask the typical signs of infection occurring in the mouth. Hyperglycemia, high blood glucose (steroid-induced diabetes), proteinuria, and hypertension are side effects of these drugs. If your patient has concomitant laxis (mean face), you may find oral lesions resulting from cheek and tongue biting. In addition, adrenal suppression may occur, making invasive dental and medical procedures more difficult for your patient.

- **Sirolimus:** Side effects of this immunosuppressive drug can include decreased appetite, decreased low white blood cell count, and hyperlipidemia. In addition, because oral ulcers can result from high levels of sirolimus, refer a patient with oral ulcers to the transplant pharmacist for drug titration.

- **Mycophenolate mofetil:** Oral cGVHD has three components:
  - **Mucosa:** The oral mucosa presents with the classic findings in cGVHD, including lichenoid changes, erythema, ulcers, and hyperkeratotic patches, and mucosal atrophy.
  - **Salivary glands:** Salivary gland dysfunction may result from medication, inflammation, and illness of the major and minor salivary glands.
  - **Musculoskeletal tissue:** Musculoskeletal problems include bone pain, muscle weakness, and decreased joint mobility.

- **Tacrolimus:** Changes in liver/kidney function, hypertension, increased blood pressure, and related complications such as changes in calcium, phosphorus, and alkaline phosphatase. Increased blood pressure may occur in transplant patients who must be maintained on high doses of immunosuppressive drugs.

- **Calcium channel blockers:** For example, calcium channel blockers may exacerbate the problem. Children and adolescents are more likely to develop this side effect than adults. Oral and systemic infections are common side effects of this drug. A person who has immunity to the virus that causes HIV may be at risk for AIDS.

- **Gingival overgrowth:** Gingival overgrowth is associated with the use of calcium channel blockers, but is associated with other medications as well. Patients who are taking calcium channel blockers and oral medications may be at risk for increased gingival hyperplasia.

- **Dental Management of the Organ or Stem Cell Transplant Patient**

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Before and after organ or stem cell transplantation, patients require specialized dental management. Whether a patient can tolerate dental treatment is a crucial concern. For some patients, it will be safer to undergo extensive dental treatment after their overall health improves after transplantation.

ADDITIONAL READINGS


Sirolimus: Side effects of this drug. If your patient has concomitant laxis (mean face), you may find oral lesions resulting from cheek and tongue biting. In addition, adrenal suppression may occur, making invasive dental and medical procedures more difficult for your patient.

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Preparing for Dental Treatment

Before starting your patient’s dental treatment before transplantation, consider several factors:

- **Antibiotic prophylaxis:** Consult with the patient’s physician to determine whether antibiotic prophylaxis is required to prevent systemic infection from invasive dental procedures. Unless advised otherwise by the physician, the American Heart Association’s standard regimen to prevent endocarditis (http://www.heart.org/) is recommended.

- **Oral infection:** If the patient presents with an active oral infection, such as a purulent lesion, the infection must be eliminated before transplantation, the active oral infection must be eliminated.

- **Excessive bleeding:** Several factors can cause bleeding problems in transplant candidates, such as the disease itself or medications. For example, patients may have a decreased platelet count or be on anticoagulant medications. Patients with end-stage liver disease may have excessive bleeding because the liver is no longer producing sufficient amounts of clotting factors. Before treatment, assess the patient’s bleeding potential with the appropriate laboratory tests and take precautions to limit bleeding.

- **Anticoagulant medications:** Consult with your patient’s physician about whether antithrombotic or anticoagulant medications, including over-the-counter medications, including over-the-counter medications, may be problematic. Instruct patients to bring a current list of their medications. Anticoagulant medications, including over-the-counter medications, can cause excessive bleeding problems after transplantation by reducing the number of oral bacteria and inhibiting their proliferation.

Becoming blood risk, some patients are suitable for surgery only in that their dental history is designed to handle emergency medical situations.

- Use aggressive suctioning techniques during invasive procedures to prevent your patient’s ability to resist systemic infection must be eliminated. Confirm the choice of antibiotic with the patient's physician. Before transplantation, the active oral infection must be eliminated.

- **Dental Treatment**

Whenever possible, all active dental disease should be eliminated before transplantation. A small number of patients with advanced liver disease, renal disease, or AIDS will develop end-stage kidney disease, for example, may have diabetes or significant pulmonary or heart disease. Consult your patient’s medical history to determine what additional treatment considerations your patient may have.

- **Dental Treatment**

For example, patients may cause bleeding problems in transplant candidates. Patients with active dental disease who can tolerate antibiotic treatment should receive indicated dental care. Depending on the patient’s condition, temporary revascularization may be appropriate until his or her health improves.

- **Dental Treatment**

If the patient presents with an active oral infection, such as a purulent lesion, the infection must be eliminated before transplantation, the active oral infection must be eliminated. Confirm the choice of antibiotic with the patient’s physician. Before transplantation, the active oral infection must be eliminated.

- **Dental Treatment**

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