



# Dental Problems and Immune Deficient Patients

Patients with immune deficiencies are at increased risk of dental problems caused by infections, a situation that requires an understanding of the risks of dental procedures and how to minimize them.

By Myron Liebhaber, MD, and David Dart, DDS, JD

**P**eople with primary immune deficiency disorders (PIDDs) are predisposed to dental problems. Disorders involving the immune system can be congenital (occurring at birth) or acquired as in common variable immunodeficiency disorder and AIDS. Some drugs such as steroids, methotrexate, hydroxychloroquine, D-penicillamine or newer rheumatoid drugs that inhibit B cells such as Humera also can suppress natural immunity. The most common immune disorder is an IgA deficiency, in which the IgA antibody is low or absent in the mucus and saliva of the mouth. A rare form of antibody deficiency includes X-linked agammaglobulinemia (also known as XLA or Bruton's agammaglobulinemia), which is a defect in all three classes of antibodies (IgA, IgG and IgM). Patients also may have a defect in the T cell system, which causes thymic hypoplasia (also known as DiGeorge syndrome). No matter what the cause of the immune deficiency, because these patients lack antibodies or immune cells, they are unable to respond to infections, especially infections of the mouth and gums.

## Reducing the Risks of Infection

People with congenital or acquired immune deficiencies are prone to oral bacterial infections such as staph abscesses, viral infections such as herpes simplex and oral fungal infections (also known as candidiasis or oral thrush). These infections lead to a higher incidence of gingivitis, gum disease, periodontitis (decayed, missing and filled teeth) and dry mouth syndrome. Gingivitis is a chronic gum infection involving the soft tissue (gingiva) surrounding the teeth. The signs of infection are bleeding, purulence (pus), swelling, heat and bad odor of the gums. In more advanced cases (periodontitis), the supporting bone under the teeth resorbs, leaving loose and painful teeth. As such, immune deficient patients should be closely monitored and treated by their dentist and dental hygienist to maintain good periodontal health.

Many patients with an immune deficiency take medications that can cause decreased saliva flow. Adequate saliva flow is important for proper oral clearance of food particles; lubrication of the oral structures, eliminating abrasion of the soft tissues; facilitating the digestion of carbohydrates;

and chemically maintaining an environment rich in calcium, phosphate and acid-buffering agents. All of these factors help to reduce dental cavities. Fortunately, there are sugar-free lozenges and chewing gum that stimulate increased saliva flow. A patient's dentist can discuss dry mouth syndrome and offer solutions to this problem.

If patients are on high-dose steroids, they may not be able to cope with the stress of invasive dental work. Their adrenal glands (stress glands) may not be able to produce hormones that are protective against trauma. In addition, people with immune deficiencies and dental disease are at risk for sepsis, and can have bacteria introduced to the blood stream from the mouth. Symptoms of bacterial blood infections (sepsis) include fever, chills or shaking. As a result, septic shock can occur as a sudden drop in blood pressure related to endotoxins produced by bacteria. This requires immediate treatment in the hospital.

Dental care usually requires one of these three dental procedures:

**1) Noninvasive procedures.** This group includes an oral examination by the dentist, X-rays, impressions, fluoride treatments and generally any procedure that causes no mental or physical trauma. Immune deficient patients generally require no special pre-dental procedures prior to these procedures.

**2) Minimally invasive procedures.** This includes the dental prophylaxis or cleaning, where hard and soft bacteria are removed from the teeth above the gums. This also includes small filling restorations that may or may not require small amounts of local anesthetics. Patients may require medications prior to these procedures.

**3) Invasive procedures.** This includes any dental procedures that involve substantial local anesthetics and/or deep drilling into teeth, which can cause significant bleeding in the oral cavity. Most periodontal procedures and all oral surgical procedures should be considered invasive. Some construction of crowns, bridges and implant placements are invasive. Patients should be carefully monitored prior, during and after any invasive dental procedure. A patient's physician should be consulted during the treatment planning stage to ensure the dentistry will be delivered in a safe manner.

### **Dental Tips for PIDD Patients**

Good dental hygiene should be practiced, and regular dental checkups should be scheduled. Patients should brush and floss daily, use antiseptic mouthwash, eat healthy foods and limit sweets.

Patients need to tell their dentist about all the medicines they are taking. The dentist will make every effort to

reduce the risk of infection and may refer patients to a periodontist (gum specialist).

Patients must be aware of bacterial infections (dental abscesses), viral infections (cold sores) and fungal infections (thrush). These can be treated with antibiotics and/or antiviral or antifungal medication.

If patients have an underlying cardiac condition, artificial joints or an oral bacterial infection, they may need antibiotics before an invasive procedure (type 2 or 3).

## *People with congenital or acquired immune deficiencies are prone to mouth bacterial infections, viral infections and oral fungal infections.*

Patients who are treated with monthly intravenous immune globulin or weekly subcutaneous immune globulin must make sure their blood IgG level is above 600 mg/dL before an invasive dental procedure (especially a type 3 procedure). If their level is below 600 mg/dL, they can receive a "booster dose" of immune globulin before an invasive dental surgery.

### **A Team Approach**

Immune-deficient patients are extremely susceptible to dental problems because of their high risk of infections. Good oral hygiene, attention to the condition of their mouth and gums, and good communication with their dentists are crucial to ensure the risks of infection are minimized. A "team" approach to deliver care is required. A doctor, a dentist and sometimes a periodontist capable of dealing with their mouth and dental complications must be consulted. ■

**MYRON LIEBHABER, MD**, is an allergist and research director at the Sansum — Santa Barbara Medical Foundation Clinic.

**DAVID DART, DDS, JD**, practices in private general dentistry and is a senior dentist at the University of California Santa Barbara Dental Care Center.