

# InfoSheet

## MANAGING OSTEONECROSIS OF THE JAW (ONJ) AND OTHER MOUTH ISSUES ASSOCIATED WITH MYELOMA AND ITS TREATMENT

**Good oral health is always important, and even more so when you are undergoing myeloma treatment. Thus, it is best to identify and treat dental problems and oral infections before you start chemotherapy, undergo stem cell transplant, or start taking bone protector drugs.**

**This InfoSheet will cover some common oral infections and mouth issues associated with myeloma and its treatment, as well as a less frequent side effect known as osteonecrosis of the jaw (ONJ). See how you can prevent and manage these undesirable effects appropriately.**

### Definition and causes of ONJ and other mouth issues

Myeloma patients are at an increased risk of developing a variety of mouth problems resulting from a weakened immune system and/or the side effects of treatment. Common issues include sore or inflamed mouth, fungal or viral infection, bleeding gums, and a dry mouth. Infections from the teeth can drain into the lymph nodes in the neck, and if your teeth and gums are not kept clean, large quantities and varieties of bacteria can colonize the gums. Good oral care is important to keep your mouth clean, moist, and free from infection.

Some of the chemotherapy drugs used to treat myeloma can cause a variety of mouth problems, especially inflammation of the oral mucosa (known as mucositis). The lining of the mouth becomes redder, thinner and more fragile, which can lead to ulcers, a burning sensation and altered taste (called dysgeusia). This is because chemotherapy attacks the rapidly dividing cells in the body, such as those in the lining of the mouth. Patients receiving high-dose melphalan given as part of a high-dose therapy and stem cell transplantation (HDT-SCT) are particularly at risk of developing oral mucositis.

Some myeloma treatments can also temporarily lower your platelet count. Platelets are the blood cells involved in clotting. As a result of a lowered platelet count, you may notice that you bleed more easily, especially from your gums or the corners of your mouth, which can sometimes lead to painful cracks. In addition, some myeloma treatments can affect saliva production and cause a sore or dry mouth in some patients.

Saliva is our natural protection against tooth decay. When the quantity and quality of saliva are altered, teeth are more vulnerable to acidity (which can come from diet, gastric reflux, etc.) and the self-cleaning of teeth by saliva is reduced, increasing the risk of cavities.

Although unpleasant and uncomfortable, most mouth problems are usually temporary and improve once treatment has finished or once your myeloma is brought back under control.

Osteonecrosis of the jaw (ONJ) is a relatively rare, undesirable effect in which one or more parts of the jawbone becomes exposed to the inside of the mouth. Bone dies due to a lack of blood supply. Some bone-densifying drugs unfortunately reduce the blood supply to the bone. The jawbone dies (known as avascular necrosis) and covered only by a thin layer of tissue, eventually breaks through the mucosa and becomes exposed in the mouth. It then becomes at risk of infection, which could lead to pain, swelling, and bone damage that can affect the teeth. In more advanced cases, the exposed bone may form bone spurs or bone sequestration (a small piece of bone that breaks off).

ONJ can thus be observed in a small percentage of people taking bone protector drugs, called bisphosphonates, and is more common when the bisphosphonates are given intravenously (into the vein) or after prolonged periods of treatment. Bisphosphonates are drugs used in myeloma to strengthen and protect patients' bones. They help to reduce fractures, relieve pain, and improve quality of life. It has been suggested ONJ occurs because bisphosphonate drugs disrupt normal bone remodelling, and affect the healing process after any trauma (the bone loses its ability to heal). Bisphosphonates, like denosumab, another type of medication used to strengthen bones, may increase the risk of ONJ by reducing the blood supply to the bone.

Medications often used in myeloma to strengthen bones include the following:

- Denosumab (e.g. Xgeva): subcutaneous injection every 4 weeks.
- Disodium pamidronate (e.g. Aredia): intravenous infusion taken over 90–120 minutes, once a month, repeated every 4 weeks.
- Zoledronic acid (e.g. Zometa): intravenous infusion over 15–30 minutes, once a month, repeated every 3–4 weeks. Zoledronic acid appears to carry the highest risk.

ONJ can occur spontaneously but appears to be more likely following particularly traumatic dental work such as extractions (since the bone is no longer able to heal without sufficient blood supply). It is also more common in people with a history of gum disease (e.g. periodontitis) or mouth infections, those who wear dentures (because prostheses can rub, injure the mucosa and expose the underlying bone) or have a history of smoking (because nicotine also reduces blood supply) and poor oral hygiene. There is also evidence of possible genetic risk factors, but further research is needed before a link can be definitively established.

### Signs and symptoms of ONJ and oral infection

You should contact your doctor, pharmacist or dentist for advice if you experience any of the signs and symptoms below (particularly if you are currently on bisphosphonate or denosumab treatment):

- Non-healing of a tooth socket after extraction
- An area of exposed bone in the mouth
- A heavy or numb feeling in the jaw
- Loosening of teeth
- Discharge of pus
- Unusual dryness of the mouth
- Pain, redness or swelling of the tongue, lips, gums or the lining of the mouth
- Gums that bleed easily or are inflamed
- Sores on the lips or at the corners of the mouth
- Mouth ulcers
- Altered taste or sensation in the mouth
- White plaque coating the tongue and the lining of the mouth

### How is ONJ treated?

If you develop ONJ, your doctor will prescribe one of the following treatments to relieve symptoms, prevent secondary infections, prevent the development of new areas of necrosis and maintain myeloma treatment as much as possible.

- Mouthwash made from table salt and baking soda (homemade recipe)<sup>1</sup>
- Antibacterial mouthwash (e.g. chlorhexidine) – to reduce the risk of infection

- Anaesthetic mouthwash (e.g. lidocaine) or other drugs – to relieve pain
- Follow-up with an oral specialist every 8 weeks
- Antibiotics
- Antifungal mouthwash (e.g. nystatin) – to treat and prevent oral thrush
- Artificial saliva spray – to help relieve the discomfort of a dry mouth
- Pain killers (e.g. codeine or morphine) may sometimes be required (often in liquid form or via a syringe driver) for severe mucositis
- Mouth rinse (e.g. Biotène) – to help moisten a dry mouth caused by mucositis. It may be given as a 30ml solution at the start of HDT-SCT

Note: In more serious cases of ONJ, an oral surgeon may remove some of the dead tissue or bone from the area with a small operation called debridement, or by using low-level lasers to remove necrotic cells.

<sup>1</sup> Homemade mouthwash: ¼ teaspoon salt (1.25 ml) + ¼ teaspoon baking soda (1.25 ml) + 1 cup water (250 ml)

## Tips for self-management

There are many things you can do to reduce your risk and help manage mouth problems (especially once you've started taking bone protectors):

- Practice good oral hygiene to reduce the odds of needing dental care.
- Visit your dentist regularly (every 6 months) for dental check-ups to catch problems when they are small.
- Keep your doctor informed on your dental health and report any undesirable effects as quickly as possible.
- Take all of your medications as prescribed.
- Brush your teeth after each meal and at bedtime with a soft-bristle toothbrush and use alcohol-free mouthwashes prescribed.
- Floss at least once a day with waxed floss to minimize gum trauma. If flossing causes bleeding gums that doesn't stop after 2 minutes, consult your health care team.
- Keep your mouth moist and fresh and try to drink plenty of clear fluid – at least 6 to 8 glasses a day.
- If you wear dentures, make sure these fit properly and don't cause irritation before starting treatment to strengthen your bones. Keep them clean, remove them at night and soak them in a rinse solution.
- Avoid smoking and drink alcohol in moderation.
- Avoid soft drinks and spicy, acidic or salty foods as they can increase irritation in your mouth.
- If you are going through high-dose therapy and autologous stem cell transplantation, ask for some ice or an ice lolly to suck on when high-dose melphalan is being administered. This can help reduce the risk of mucositis or lessen its severity, and can also soothe a sore mouth or relieve dryness.

## Precautionary measures

**While dentists who work at cancer centres are familiar with the special requirements that people with myeloma have, some community dentists may not be. Therefore, as a person affected by myeloma, it is crucial to speak to your dentist and clearly outline what drugs you are taking (including intravenous therapies), where you are in your therapy, and what the plans may be for the future.**

Myeloma patients are advised to take the following precautions:

- It is important to have a complete dental examination before you begin any myeloma treatment. Because people with myeloma have an increased risk of infection, you may require antibiotics before having any dental work.
- Make sure your dentist and your pharmacist know if you are on a bisphosphonate or denosumab treatment.
- Before starting bone protector therapy, it is recommended that you have a routine dental examination and X-ray done, and to perform major dental procedures such as oral surgery or tooth extractions in advance. Restorative work such as fillings, bridges, crowns and root canals are likely safe after starting bone protector drugs, provided that the wounds are small, and all the rough edges are carefully smoothed.
- Avoid invasive dentistry (e.g. tooth extractions, insertion of tooth implants and periodontal surgery) during treatment, as this is likely to greatly reduce the incidence of ONJ. Ideally, all extractions should be performed before starting bone protector drugs. If invasive treatment is absolutely necessary after taking these medications, this should be done in collaboration with an experienced oral and maxillofacial surgeon. You may be taken off bone protector drugs for a period and restarted once healing is complete (but even when the drug is stopped, its effect remains in the patient's system for a very long time, and the risk of complications remains, especially with IV bisphosphonates).
- You and your doctor can consider which bone protector drug is most appropriate for your situation. They will discuss the best option with you.
- Ask your dentist to speak with your doctor about any other special precautions you may require, especially when receiving treatment.
- Many vitamins, supplements and herbal therapies can interact with your cancer medications. Before taking any vitamin, supplement or herbal therapy, talk to your physician and/or your pharmacist.
- Ask to be referred to a dietician if you are having problems eating – they can prescribe supplements to boost your nutritional intake.
- Your healthcare team, pharmacist, and nutritionist are there to support you. It's important to share your symptoms with them.

Myeloma Canada wishes to acknowledge the contribution of Julien Bourassa-Moreau, Pharm. D., pharmacist at Larivière & Massicotte pharmacy, an important partner for patients undergoing specialized therapies, as well as Melanie Menassa, DMD, MSc, FRCD(C), Director of Prosthodontics and Associate Director of the Department of Dentistry at the Jewish General Hospital. The information disclosed in this InfoSheet is based on existing Myeloma Canada publications reviewed by healthcare professionals and other publications from our sister myeloma organizations: the International Myeloma Foundation (IMF) and Myeloma UK. This information is not meant to replace the advice of a medical professional; they are the best people to ask if you have questions about your specific medical/social situation.