Patient

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Dry mouth (Xerostomia)

What is xerostomia?

Xerostomia (dry mouth) may be a side-effect of medication. It is also caused by irradiation of the head and neck region or by damage to or disease of the salivary glands. Patients with a persistently dry mouth may develop a burning or scalded sensation and have poor oral hygiene. They are prone to increased dental caries, periodontal disease, oral infections (particularly candidiasis) and intolerance of dentures.

Where possible, treatment is directed at the underlying cause of dry mouth. If this is not possible, or is only partially successful, symptomatic treatment is used. Untreated xerostomia significantly impairs quality of life, which can potentially lead to depression.[1]

How common is xerostomia? (Epidemiology)

Xerostomia is common in the elderly, particularly in females with poor general health.[2] It is also seen in adolescents with type 1 diabetes.[3] [4]

What are the causes of xerostomia?

There are many possible causes of xerostomia, which include:[5]

- Medications, especially anticholinergic, sympathomimetic and antihypertensive. Some opioids, benzodiazepines and anti-migraine agents may also contribute to salivary disorders.
- Certain diseases such as Sjögren's syndrome, diabetes, depression, anaemia, bulimia.
- Genetic conditions: Down's syndrome, Prader-Willi syndrome.
- Problems with dry mouth may also occur in alcoholics, cigarette smokers and drug addicts.

- Radiotherapy for cancer in the head and neck area.

Diagnosis[6]

The diagnosis of xerostomia and salivary gland hypofunction requires a thorough medical history. Particular attention should be given to the reported symptoms, medication use, and past medical history.

Patients with salivary gland hypofunction typically complain of dry mouth, difficulty swallowing and/or difficulty speaking. They hardly tolerate spicy, acidic, and crunchy food and often report taste changes or difficulty wearing dentures.

A careful oral examination is fundamental to identify clinical signs pathognomonic for hyposalivation. Helpful signs include:

- Sticking of an intraoral mirror to the buccal mucosa or tongue.
- Frothy saliva.
- No saliva pooling in the floor of the mouth.
- Loss of papillae of the tongue dorsum.
- Altered/smooth gingival architecture.
- Glassy appearance to the oral mucosa (especially the palate).
- Lobulated/deeply fissured tongue.
- Mucosal debris on the palate (except under dentures).

Most of the methods to measure the salivary flow are easy to perform and require little time. Salivary flow rates are usually measured for at least five minutes after an overnight fast or two hours after a meal. Unstimulated whole salivary flow rate is assessed with the patient seated in an upright position. Patients are asked to constantly drain saliva from the lower lip into a graduated container for 15 minutes (draining method).

Treating the underlying cause

- Drugs are a common cause of dry mouth. Reduce the dose or change the drug if possible. Morphine is a common but often overlooked cause of dry mouth. Other drugs that cause dry mouth include tricyclic antidepressants, antihistamines, antimuscarinic drugs, anti-epileptic drugs, antipsychotics, beta-blockers and diuretics.[7] [8]
- Dehydration should be treated.
- Simple measures will often relieve symptoms of dry mouth, even if rehydration is not undertaken.
- Anxiety can also cause dry mouth.
- Sjögren's syndrome - check antinuclear antibody titre.

General measures

Simple measures should be used by all patients. Dry mouth may be relieved in many patients by:

- Frequent sips of cool drinks.
- Sucking pieces of ice.
- Sucking sugar-free fruit pastilles.
- Eating partly frozen melon or pineapple chunks.
- Sugar-free chewing gum - which stimulates salivation in patients with residual salivary function.
- Petroleum jelly - which can be applied to the lips to prevent drying and cracking.

Xerostomia treatment and management[9]

Artificial saliva

A Cochrane review found that there is no strong evidence that any topical preparation is better than simple measures for the treatment of xerostomia. [10] Nevertheless, artificial saliva is frequently used and may help to relieve symptoms in some patients. [11] A properly balanced artificial saliva should be of a neutral pH and contain electrolytes (including fluoride) to correspond approximately to the composition of saliva.

- Biotène Oralbalance® gel and Xerotin® oral spray are both artificial saliva preparations which have Advisory Committee on Borderline Substances (ACBS) approval for the treatment of any patient complaining of dry mouth.
- BioXtra® gel, Glandosane® aerosol spray and Saliveze® oral spray are artificial saliva preparations which have ACBS approval only for patients whose dry mouth is secondary to radiotherapy or sicca syndrome. Saliva Orthana® spray can be prescribed for any cause of dry mouth, although the lozenges remain ACBS.

Salivary stimulants

These act by local stimulation of the salivary glands and are most effective in patients who have some residual salivary gland function.

- Salivix® pastilles are available for any condition leading to a dry mouth. Salivix® pastilles are not ACBS approved for any indication.
- SST® tablets may be prescribed for dry mouth in patients with salivary gland impairment and patent salivary ducts.
- Sugar-free chewing gum is as effective as artificial salivas.

Long-term use of acidic products may demineralise tooth enamel. Glandosane® spray, Salivix® pastilles and SST® tablets are acidic products.

Systemic treatment

Pilocarpine

This is the only licensed oral treatment available. [9] [6] The tablets are licensed for the treatment of xerostomia following:

- Irradiation for head and neck cancers.
- Dry mouth and dry eyes (xerophthalmia) in Sjögren's syndrome.

It can be considered for difficult cases.

- Pilocarpine is effective only in patients who have some residual salivary gland function. If there is no response it should be discontinued.
- Adverse effects include a risk of increased urethral smooth muscle tone and renal colic. Other side-effects include blurred vision and dizziness. This may affect performance of skilled tasks - eg, driving, particularly at night or in reduced lighting.
- Adequate fluid intake should be maintained to avoid dehydration associated with excessive sweating.
- Radiotherapy-induced dry mouth does not respond well to pilocarpine. One study showed that salivary gland transfer was four times more effective in this type of patient.

Physical treatments

- Some studies have found that acupuncture can be effective for the prevention of xerostomia when administered concurrently with radiotherapy, but studies of acupuncture for xerostomia generally have found insufficient evidence.[12] [13]
- A technique called acupuncture-like transelectrical nerve stimulation is currently being investigated for the treatment of radiation-induced xerostomia.[14]

Further reading

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- Palliative care - oral; NICE CKS, March 2021 (UK access only)
- The Oral Management of Oncology Patients Requiring Radiotherapy, Chemotherapy and/or Bone Marrow Transplantation; Royal College of Surgeons of England/The British Society for Disability and Oral Health. 2018.

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