Etiology of Xerostomia: An Overview

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Description

Xerostomia is a dry mouth condition caused by insufficient or non-existent saliva flow. Xerostomia is not an illness but it can be a symptom of a range of medical disorders, a side effect of head and neck radiation, or a drug side effect. It may or may not be associated with diminished salivary gland function. Xerostomia is a prevalent problem among the elderly affecting around 20% of the population. On the other hand, xerostomia appears to be linked to the possibility of older people being on medication that causes xerostomia as a side effect. The muscarinic M3 receptor is responsible for normal salivary function. When this receptor is stimulated salivary secretions become more watery. Afferent nerve impulses travel to the salivatory nuclei in the medulla when the oral mucosal surface is stimulated. Cortical inputs originating from cues such as taste, smell, fear, or depression may also impact the medullary signal. Salivary glandular epithelial cells are also stimulated and salivary secretions are increased by efferent nerve signals mediated by acetylcholine. Saliva is a viscous, transparent, watery fluid produced by the mouth's parotid, sub-maxillary, sub-lingual, and smaller mucous glands. Saliva comprises two types of protein secretions: A serous secretion that contains the digesting enzyme ptyalin and a mucous secretion that contains the lubricant mucin. The pH of saliva ranges from 6 to 7.4. Saliva also contains significant amounts of potassium and bicarbonate ions as well as sodium and chloride ions to a lesser extent. Saliva also contains antimicrobial components such as thiocyanate, lysozyme, immuneglobulins, lactoferrin, and transferrin, among others. Sjögren's syndrome, HIV/AIDS, diabetes, hypertension, hepatitis C, and lymphoma are all diseases associated to dry mouth.

Importance of Saliva

Saliva is necessary for the health of the mouth and teeth. It cleans, moisturises, and eliminates food from your mouth. Bad breath (halitosis), discomfort, oral hygiene issues such as cavities, tooth decay, and other mouth diseases, trouble wearing dentures, and difficulty speaking and swallowing can all be caused by a lack of saliva. Significant role of saliva include antimicrobial activity, mechanical cleansing action, pH management, elimination of food debris from the oral cavity, lubrication of the oral cavity, re-mineralization, and maintaining the integrity of the oral mucosa.

Causes

When salivary glands in your mouth don't produce enough saliva to keep your mouth moist, you face issues of dry mouth. These glands don't function properly as a result of following reasons.

Medications: Dry mouth is a side effect of hundreds of medications, including several over-the-counter medications. Among the more likely types to cause problems are some of the drugs used to treat depression, high blood pressure and anxiety, as well as some antihistamines, decongestants, muscle relaxants, and pain meds, are among the most likely to cause issues.

Aging: As people get older, they often experience dry mouth. Use of specific medications, changes in the body's ability to metabolise medications, poor diet, and having long-term health problems are all contributing factors.

Cancer treatment: Chemotherapy medicines can alter the composition and quantity of saliva produced. It's possible that this is only temporary, and normal salivary flow will return after the treatment is done. Salivary glands can be damaged by radiation treatments to the head and neck resulting in a significant decrease of saliva output. Depending on the radiation dose and area treated, this could be transient or permanent.

Nerve damage: Dry mouth can be caused by a head and neck accident or surgery that causes nerve damage.

Tobacco and alcohol consumption: Dry mouth symptoms can be exacerbated by drinking alcohol and smoking or chewing tobacco.

Other medical issues Dry mouth can be caused by autoimmune disorders like Sjogren's syndrome or HIV/AIDS, as well as medical conditions like diabetes, stroke, yeast infection (thrush) in the mouth, or Alzheimer's disease. Snoring or breathing through your mouth can also cause dry mouth. Methamphetamine usage can cause significant dry mouth and tooth damage, which is referred to as "meth mouth." Marijuana might also make your mouth dry.

Symptoms and Signs

The dentist and dental hygienist have been taught to recognise dry mouth and can often detect it long before the patient is aware of it. Insufficient saliva accumulating under or around the tongue is one of the most prevalent indicators of a dry mouth which your dentist or hygienist can easily detect. Cavities affecting the necks of the teeth near the gum line or biting edges of the teeth as well as a red, parched or fissured tongue are other signs of a dry mouth. Trouble swallowing meals (especially dry food) without liquids, changes in taste, a burning feeling or discomfort in the mouth, and difficulty speaking are all common patient complaints or symptoms of dry mouth.

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Conclusion

If you don’t have enough saliva and develop a dry mouth, you risk developing plaque build-up tooth decay and gum disease, yeast infection in your mouth, mouth sores (thrush), split skin around the mouth’s corners or cracked lips, poor nutrition which results in chewing and swallowing difficulties. In an ideal world, xerostomia management would comprise self-care, over-the-counter treatments, and saliva substitutes, prescribed products for saliva stimulants, case study/scenario practise. Xerostomia is a frequent condition that can have a substantial impact on a patient’s quality of life if it is not diagnosed and addressed. Patients with the support of dentists can minimise xerostomia and its impact on dental health and quality of life through adequate education, assessment, prevention, referral, and treatment.