Xerostomia –Impact On Oral Health Amongst Different Generation And Preventive Measures

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Abstract- Xerostomia, or dry mouth, is more than just an annoying dryness; it's a condition that can seriously affect daily life. Often caused by medications, radiation therapy to the head and neck, or conditions likeSjögren's syndrome, dry mouth can lead to a host of problems—think cavities, oral infections, and even trouble with speaking, chewing, or swallowing. These issues can make everyday activities challenging and diminish overall quality of life.

This paper takes a closer look at the various causes of xerostomia, from health conditions and medication side effects to lifestyle factors. It also emphasizes the importance of proper diagnosis and treatment. By focusing on the vital role that dental and health care professionalsplay, the paper calls for tailored treatment plans that not only managethe symptoms but also help patients live more comfortably with this often-overlooked condition.

1. INTRODUCTION

Xerostomia, commonly known as dry mouth, is the medical term for the feeling of dryness in the mouth. While it's often linked to reducedsaliva production (hypo salivation), interestingly, some people with xerostomia actually have normal saliva flow. That's why the term "symptomatic" or "pseudo" xerostomia is now used to describe caseswhere people feel dry mouth despite their salivary glands working properly. Dry mouth is a common complaint, especially during times of anxiety,stress, or depression, as well as during radiation or chemotherapy treatments and in certain systemic diseases. It's a symptom frequentlyseen in older adults, but it's important to note that it's not a direct result of aging.

As Sreebny defined back in 1988, xerostomia is essentially the feeling of dryness in the mouth, typically due to reduced function of the salivary glands. For reference, the normal salivary flow rate when resting is about 0.3 ml per minute, but it can drop to 0.1 ml per minute during sleep and increase significantly to 4.0-5.0 ml per minute when chewing.

2. MATERIALS AND METHODS

Materials:

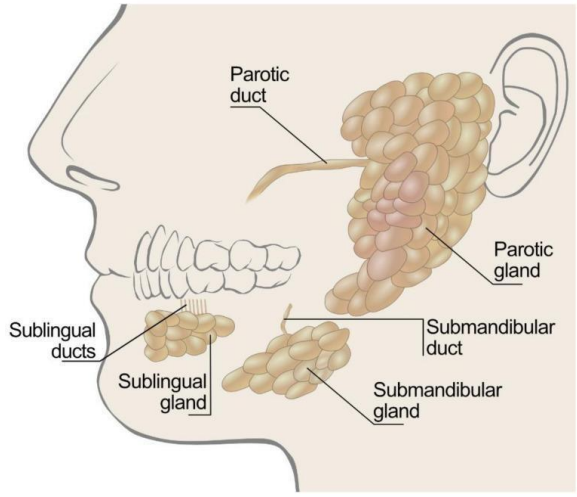
- Participants: Patients with diagnosed xerostomia.
- Diagnostic Tools: Salivary flow measurement, standardized questionnaires, blood tests, microbiological cultures.
- Imaging Techniques: Salivary gland scintigraphy, ultrasound.
- Treatment Options: Saliva substitutes, sialogogues, lifestyle modifications.

3. APPROACH OF THE REVIEW

The aim of this review was to scrutinize the literature regardingxerostomia and salivary gland hypofunction and, specifically, the underlying causes, the impact on quality of life, and the recommended management approaches.

4. SALIVA PRODUCTION IN HUMANS

Saliva is a very complex fluid that is mainly composed of water combined with electrolytes, minerals, buffers, growth factors, enzymes, cytokines, proteins, and immunoglobulins. In humans, it isproduced from the major and minor salivary glands of the mouth, asdepicted in Figure 1.



About 90% of daily saliva production (≈1–1.5 L) comes from the major salivary glands—parotid, submandibular, and sublingual—while the minor salivary glands contribute the remaining10%. These minor glands are crucial as their ducts open across most of the oral mucosa, excluding the dorsum of the tongue, the anterior hard palate, and the gingiva. They are categorized into lingual, labial, buccal, palatine, and glossopalatine glands. Salivary secretion is regulated by both the parasympathetic and sympathetic nervoussystems.

5. DIAGNOSIS OF XEROSTOMIA

Xerostomia is often referred to as hypo salivation, but it's important to understand that these two terms describe different conditions and shouldn't be used interchangeably. Hypo salivation is strictly the objective measurement of reduced saliva production, which can result from various internal or external factors. On the other hand, xerostomia is the subjective experience of dryness in the mouth,regardless of actual saliva flow.

To properly distinguish between these conditions, a systematic approach is necessary, particularly when diagnosing patients who report symptoms of xerostomia. This involves measuring salivary gland function to identify any hypofunction. A thorough medical history is crucial for diagnosing xerostomia. This includes a detailed account of the patient's symptoms—many patients with xerostomiadescribe a persistent dry and sticky sensation in their mouth, which often makes swallowing and speaking difficult. They might also noticea decrease in their sense of taste. Additionally, understanding the medications a patient is using is key, as many medications can contribute to the sensation of dry mouth.

6. CAUSES OF XEROSTOMIA

The causes of xerostomia, or dry mouth, can be classified into twomain categories: systemic and local. Systemic causes include conditions like diabetes, autoimmune diseases, infections such as hepatitis C, and granulomatous diseases like tuberculosis. On the otherhand, local causes are often related to factors like the use of certain medications, undergoing head and neck radiotherapy, or lifestyle habits such as alcohol, tobacco, and caffeine consumption.

Interestingly, recent studies have also linked xerostomia to COVID-19,with nearly 46% of patients affected by the virus reporting dry mouth, and for 76.5% of them, it was the first time they experienced this symptom. Among all the possible causes, polypharmacy—the practice of prescribing multiple medications—is considered the most commontrigger for xerostomia.

6.1. Systematic Diseases

Sjögren's syndrome is an autoimmune disease characterized by the inflammation of the exocrine glands, mainly of the lacrimal and salivary glands .

Diabetes mellitus is a chronic multi-systemic metabolic disease characterized by hyperglycemia due to either a deficiency of insulinsecretion or resistance to the action of insulin or both.

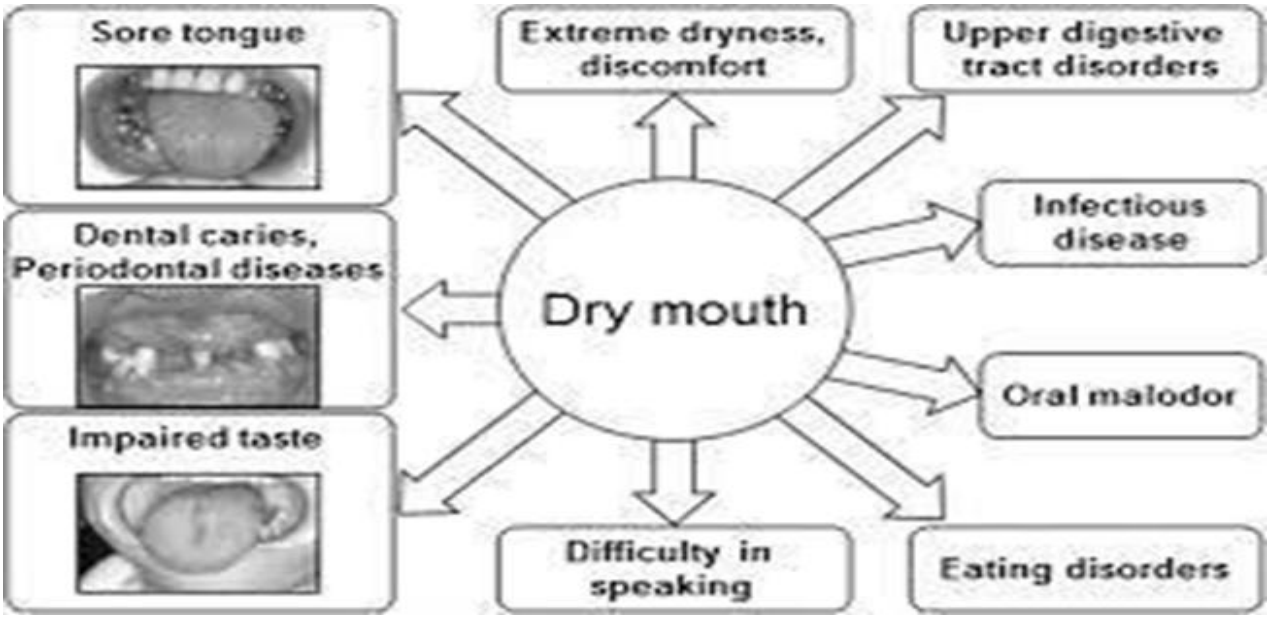
Table 1: Common Systemic Conditions Associated with Salivary Gland Hypofunction and Xerostomia

- Sjögren's syndrome
- Rheumatoid arthritis
- Juvenile idiopathic (rheumatoid) arthritis
- Systemic lupus erythematosus
- Primary biliary cirrhosis
- Sarcoidosis
- Human immunodeficiency virus
- Depression
- Autoimmune thyroiditis
- Chronic pancreatitis
- Celiac disease
- Cystic fibrosis
- Down syndrome
- Thalassemia major
- Anorexia/bulimia
- End-stage renal disease
- Nutritional deficiencies
- Dehydration

Adapted from von Bültzingslöwen et al.[3]

7. EFFECTS OF XEROSTOMIA

Although xerostomia can affect a person at any age, it appears to be most prevalent in postmenopausal women and the elderly population.



8. MANAGEMENT OF XEROSTOMIA

Establishing the correct diagnosis is the most crucial step in managing patients with xerostomia, as it involves distinguishing between those who have subjective complaints of dry mouth and those who actually have salivary gland hypofunction. This distinction is vital because it guides the approach to treatment. Once a proper diagnosis is made and the underlying cause is identified, a step-by-step managementplan can be put into action. This approach aims to implement preventive measures, alleviate the uncomfortable symptoms, treat any oral manifestations, and ultimately improve salivary function. By following this comprehensive plan, the overall well-being of patients suffering from xerostomia can be significantly enhanced.

Symptomatic treatments	▪ Frequent sips of water ▪ Oral rinses and/or gels ▪ Humidifier use at night ▪ Minimal intake of caffeine and alcohol ▪ Sugar-free sialogogues (eg, sugar-free chewing gum and mints) ▪ Saliva substitute
Systemic medications	▪ Parasympathomimetic drugs • Pilocarpine (5 mg p.o., t.i.d.) • Cevimeline (30 mg p.o., t.i.d.) ▪ Pilocarpine mouthwash (1% to 2% solution; 1-minute oral rinse)