Saliva and Oral Health

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**Excerpt from Saliva and Oral Health—An Essential Overview for the Healthcare Professional**


The presence of saliva is vital to the maintenance of healthy hard (teeth) and soft (mucosa) oral tissues. Severe reductions in salivary output not only results in a rapid deterioration of oral health but also has a detrimental impact on the quality of life for the sufferer. An understanding of saliva and its role in oral health helps to provide healthcare workers with knowledge of how oral health care professionals of the problems arising when the quantity or quality of saliva is decreased; this awareness and understanding is important to the early detection and treatment of the condition. There is an extensive body of research in saliva fluid. It has been used to indicate an individual’s susceptibility to developing caries, it has also been used to indicate various physiological and pathological changes which are mirrored in salivary gland function. The benefits of saliva as a diagnostic fluid is that it is easily available for use in a range of tests and analysis. It can be used to monitor the presence and levels of harmful bacteria, viruses, microorganisms and ions. The following article provides an overview of oral complications associated with salivary gland hypofunction, diagnosis, diagnosis, clinical implications and management of xerostomia.

**Xerostomia and Salivary Gland Hypofunction**

Saliva plays a significant role in the maintenance of oral-pharyngeal health. Subclinical complaints of a dry mouth (xerostomia) or clinical evidence of salivary gland hypofunction can be advanced with the use of questionnaires. It should be mentioned general estimate of approximately 50% of xerostomia is reflecting adults 65 years and older.

Approximately 80% of all persons over age 65 have at least one chronic condition and 50% have at least two. Hypertension and diabetes are the most frequent occurring conditions among older adults, with conditions and the medications of persons prescribed for their management. Could impact the structure and function of salivary glands leading to complaints of xerostomia and even salivary gland hypofunction.

**Diagnosis of xerostomia and salivary gland hypofunction**

Subjective responses and questionnaires

The establishment of a diagnosis of xerostomia and salivary gland hypofunction can be advanced with the use of questionnaires. It should be noted that a patient’s presenting complaint may not be dry mouth in spite of the presence of salivary gland hypofunction. Therefore, lack of complaint should not be perceived as evidence of adequate saliva secretory.

Many of the common oral symptoms associated with xerostomia and salivary gland hypofunction are associated with mealtime: altered taste, difficulty eating, chewing, and swallowing, particularly dry foods, and especially without drinking accompanying liquids. Patients complain of impaired denture retention, halitosis, restomatodynia, and intolerance to acidic and spicy foods.

Saliva is also common, especially in saliva output normally reach- ed at night. However, this can be increased by mouth breathing.

**General oral examination**

Extroral findings associated with salivary gland hypofunction may include dry and cracked lips that are frequently compromised with Candida species (angular cheilitis). Visible and palpable signs of xerostomia and salivary gland hypofunction increases with age and affects approximately 60 million older individuals aged 65 years and older.

There are multiple causes of xerostomia and salivary gland hypofunction, the most common associated with age, most older adults are taking at least one medication that causes salivary gland hypofunction. It is difficult, however, to estimate the true prevalence of xerostomia in adults reflecting total population.

The prevalence of xerostomia is nearly 100% among patients with major autoimmune exocrinopathy, affecting between 1-4% of older adults.

Estimates of the prevalence of xerostomia in adult ambulatory and nursing home populations range from 16-72%. Combining the prevalence of xerostomia associated with age, within the percentage of adults with these conditions who complain of xerostomia are prevalent in patients with more frequent salivary gland hypofunction. There are numerous introral complaints associated with xerostomia, or clinical evidence of salivary gland hypofunction. There- in spite of the presence of salivary gland hypofunction. There- in spite of the presence of salivary gland hypofunction. There- in spite of the presence of salivary gland hypofunction. There- in spite of the presence of salivary gland hypofunction. There- in spite of the presence of salivary gland hypofunction. There- in spite of the presence of salivary gland hypofunction. There-

Stimulated whole saliva flow rates of less than 0.5 ml/min are also considered to be suggestive of salivary hypofunction. The most practical and straightforward technique for collecting this form of saliva is with the use of a standard piece of paraffin wax or unflavoured gum base (typically 1-2 g). A test tube or similar container with the patient is weighed prior to saliva collection. The person is instructed to swallow any saliva that may be in the mouth before the saliva collection begins. A timer begins and the person is instructed to chew the gum base at a rate of 60 chews/ minute. Without swallowing, the saliva is collected in the container and the collection is completed. The volume is recorded and expressed as ml/min.

**Clinical implications of xerostomia and salivary gland hypofunction**

**Dentals and oral erosion**

One of the most common oral conditions that develop as a result of salivary gland hypofunction is dental erosion. In patients considered to be at risk, for developing salivary gland hypofunction, it would be useful to monitor saliva flow rates over time. Most investi- gators consider a diagnosis of salivary gland hypofunction if the unstimulated whole saliva flow rate is less than 0.5 ml/min.

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(difficulty swallowing), and difficulty chewing food secondary to salivary gland hypofunction can lead to changes in food and fluid selection that compromise nutritional status. The speech and eating difficulties that develop can impair social interactions and may cause some patients to avoid social engagements. Dysphagia increases susceptibility to aspiration pneumonia and colonisation of the lungs with Gram-negative anaerobes from the gingival salus.

Management of xerostomia and salivary gland hypofunction

The initial step in the management of xerostomia is the establishment of a diagnosis. This frequently involves a multidisciplinary team of health care providers who communicate effectively, since many patients have concomitant medical conditions and frequently experience complications of polypharmacy. The second step is scheduling frequent oral health evaluations due to the high prevalence of oral complications.

Maintenance of proper oral hygiene and hydration (water is the drink of choice) are helpful. Several habits, such as smoking, mouth breathing, and consumption of caffeine containing beverages, have been shown to increase the risk of xerostomia. Limiting or stopping these habits decreases the severity of dry mouth symptoms. A low-sugar diet, daily topical fluoride use (e.g. fluoride toothpaste and mouth rinses), anti-microbial mouth rinses, and use of sugar-free gum or candy to stimulate salivary flow, help to prevent dental caries.

Patients must be instructed on the frequent use of fluids during eating, particularly for dry and rough foods. Eating and swallowing problems secondary to salivary gland hypofunction can impair the intake of fibre-rich foods, restricting some older adults to a primarily soft and carbohydrate diet. Accordingly, patients must be counselled on a well-balanced, nutritionally adequate diet and the importance of limiting sugar intake, particularly between meals.

If there are remaining viable salivary glands, stimulation techniques using sugar-free chewing gum, candies (sweets), and mints can stimulate salivary output. Chewing sugar-free gum is increasingly being viewed as a delivery system for active agents that could potentially provide direct oral care benefits, as it promotes a strong flow of stimulated saliva. The fourth edition of Saliva and Oral Health is available in hard copy or e-book format at www.shancoksltd.com. A full list of references is included in the book.

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References