

Assessment of Xerostomia/ Hyposalivation among Smokers Using Modified Schirmer Test in Saudi Population

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Abstract

Aim: The aim of the present study is to assess xerostomia and hypo salivation by Modified Schirmer Test (MST) & Spitting method among smokers and their comparison with the non-smokers of Saudi population & association of xerostomia and hypo salivation. **Material and Methods:** 200 subjects were divided into two groups of 100 each, group-I comprising of smoking habit history for a period of 10 years and healthy subjects with no habit history in group-II. All the subjects underwent for screening of xerostomia and hyposalivation by spitting method and MST. **Results:** Statistically significant decrease of salivary flow rate was noticed in smokers when compared to healthy subjects by both the methods. There was excellent correlation between the two estimation methods. Prevalence of Xerostomia in Group-I was 45% & in group-II was 14% and hyposalivation in group-I was 73% and in group-II was 10%. **Conclusion:** The MST can be used as a reliable, objective, inexpensive, easy-to-perform and well-tolerated test for assessment of hyposalivation.

Keywords: Xerostomia, Hyposalivation, Modified Schirmer Test, Spitting Method

Introduction

Saliva is a complex biological fluid of oral cavity that is very important for maintaining the integrity of the oral health by maintaining homeostasis through its various components [1-3]. Saliva is essential for protecting the oral mucosa, initial digestion, teeth remineralization, taste sensation, phonation and pH balance [4]. Therefore, altered Salivary Flow Rate (SFR) has an important role in the pathogenesis of oral and dental diseases [5].

Xerostomia is defined as the subjective feeling of oral dryness. Whereas, hypo salivation is an objective evaluation, both as a result of reduced salivary flow [6, 7]. Earlier studies have suggested that dry mouth does not always coincide with hypo salivation [8].

Assessment of Xerostomia is a bit difficult one when compared to the measurement of hypo salivation, as it is a subjective one. It usually involves a patient history, a dry mouth questionnaire that inquires about the symptoms and medications and possible use of a visual analogue scale to quantify the patient's perception of degree and severity of oral dryness [9].

Hypo salivation can be measured objectively by sialometry which involves the measurement of glandular function i.e., whole or glandular saliva flow rate. Saliva can be stimulated or unstimulated in nature, but the unstimulated saliva is the predominant one, which persists for the major duration, is responsible for most functions of saliva. Thus, the measurement of unstimulated salivary flow rate is the ideal one to assess the hypo salivation. Unstimulated salivary flow rate was most frequently used in salivary research such as draining or spitting methods. But these are

seldom used in clinical practice because of the cumbersome nature of these techniques, time-consuming, require special equipment, trained personnel and their lack of sensitivity [7, 10].

In search of an alternative method which is user and patient friendly and feasibility in clinical settings, a newer alternative method Modified Schirmer Test (MST) found to be a good and reliable one. This method uses the commercially available Schirmer tear strips which were routinely used by the Ophthalmologists for the measurement of tear gland function. They will be placed in the oral cavity to measure the salivary flow rate [10].

Smoking is an addictive habit and one-third of adult population are smokers [11]. Cigarette smoke contains 300 carcinogens, 4000 bioactive chemical compounds that cause structural and functional changes in saliva [12]. Saliva is the first to interact with the smoke that is spread to all parts of the oral cavity [13]. Previous studies showed that chronic or long-term smoking presumably causes a decrease in sensitivity to taste receptors and depressed salivary reflex. Thus, Smoking is thought to be as one of the risk factors, which reduces salivary flow and causes xerostomia in patients [14].

Thus, the aim of the present study is.

- Assessment of Xerostomia and Hypo salivation by MST & Spitting method among smokers and their comparison with the non-smokers of Saudi population.
- To determine the correlation between MST and Spitting methods.
- To know the association between xerostomia and hypo salivation.