



Managing the care of patients with Sjögren syndrome and dry mouth

Comorbidities, medication use and dental care considerations

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Autoimmune diseases are characterized by the abnormal production of antibodies and T-cell activation directed against various tissues. The misdirection of the immune system in autoimmunity leads to inflammation of the affected tissues and tissue damage. Although Sjögren syndrome (SS) is the second most common autoimmune disorder and has had a variable reported prevalence of 0.06 percent for primary SS¹ and up to 4.8 percent for primary and secondary SS combined,^{2,3} it is perhaps the most concerning autoimmune disorder for oral health care professionals.

SS is characterized by diminished salivary and lacrimal gland function and may be associated with other autoimmune diseases such as arthritis and with skin and mucosal tissue damage.⁴ Microbial shifts in the oral cavity may result in increased cariogenic flora and fungal infection. Dental demineralization and damage can occur owing to limited buffering capacity of saliva, lack of dental remineralization and rampant caries. Mucosal health and wound healing may be affected by loss of mucin and a reduction in mucosal epithelial growth factors and salivary antibodies, resulting in mucosal atrophy, fragility and delayed repair. Quality of life often is diminished as the loss of mucosal wetting and of hydration, diluting and lubrication functions leads not only to poor oral function but also to additional systemic concerns. Changes in taste, chewing, speaking, food bolus formation and swallowing, as well as trauma to oral tissues, often are experienced. Patients with dental prostheses

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ABSTRACT

Background. As North Americans live longer, have more chronic conditions and take more medications, adverse oral events are likely to increase and aggravate the symptoms of Sjögren syndrome (SS).

Methods. A total of 151 adults who self-reported having SS and who had a mean (standard deviation [SD]) age of 65.8 (11.5) years completed a survey that included questions about basic demographic information, current medical conditions, medications used (prescription and over the counter [OTC]) and the use of oral products to manage SS symptoms. Owing to the self-reporting process in our survey, the term "SS" in our study population represented a mixture of people with SS and people with dry mouth symptoms.

Results. The mean (SD) number of daily medications recorded as prescription, OTC and oral care products were 4.9 (3.5), 4.5 (2.8) and 4.6 (1.4), respectively. Participants with four or more comorbid medical conditions ($n = 74$; 49.0 percent) had significant differences ($P < .05$) in oral symptoms compared with those who had fewer than four ($n = 75$; 49.7 percent). Participants who were taking fewer than four prescription and OTC medications daily ($n = 61$; 40.4 percent) has significant differences ($P < .05$) in voice hoarseness compared with those taking four or more prescription and OTC medications daily ($n = 54$; 35.8 percent).

Conclusions. The survey results indicated that medication use and comorbid medical conditions demonstrated significant differences and may have had a substantial impact on the oral symptoms in adults who self-reported having SS.

Clinical Implications. Given the prevalence of SS, obtaining an accurate and complete medical and pharmacological history has implications for dental practitioners because medication use and comorbid medical conditions have a significant impact on oral symptoms in patients with SS.

Key Words. Autoimmune disease; Sjögren syndrome; comorbid conditions; drugs; dental care; interactions; patient safety.

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TABLE 1

Participants' characteristics, comorbid conditions and medication use (N = 151).

VARIABLE	VALUE
Sex (Female), No. (%)	145 (96.0)
Current Smoker, No. (%)	5 (3.3)
Age, in Years, Mean (SD)*	65.8 (11.5)
Number of Comorbidities, Mean (SD)	4.2 (2.9)
Number of Prescription Medications, Mean (SD)	4.9 (3.5)
Number of Over-the-Counter Medications, Mean (SD)	4.5 (2.8)
Number of Oral Products Currently Used, Mean (SD)	4.6 (1.4)

* SD: Standard deviation.

often experience problems with retention and function of prostheses due to or exacerbated by oral dryness.

According to the 2010 U.S. Census, 40.3 million people 65 years or older have retained more of their original teeth than earlier generations.⁵ Because North Americans are living longer, have more chronic conditions, take more prescription and over-the-counter (OTC) medications and retain their dentition, adverse oral events are likely to increase in association with an increase in salivary dysfunction due to autoimmune disorders and medications taken to manage chronic conditions.

We conducted an exploratory study to describe people's self-reports of current medication use, chronic illnesses and dry mouth symptoms and to determine between-group differences, stratified by medication and comorbidity, for dry mouth symptoms.

METHODS

We conducted our survey in conjunction with the Sjögren's Syndrome Foundation (SSF) (Bethesda, Md.) and MedActive Oral Pharmaceuticals (Odessa, Fla.), which sponsored the study in association with SSF and contributed to the protocol development and data collection. We analyzed the data independently. A notice about our survey was first published in SSF's quarterly newsletter, *Moisture Seekers*, and MedActive Oral Pharmaceuticals staff members sent an introductory letter announcing the survey to 3,000 randomly selected members of SSF from SSF's mailing lists for New York, Virginia, Ohio, New Jersey, Connecticut and Pennsylvania. Members of the SSF self-identified as having SS, but diagnostic confirmation was not available for our study. In the letter, we invited the recipients to contact the designated MedActive Oral Pharmaceuticals staff member to learn more about the survey and to volunteer to participate. Three hundred one SFF members responded, and we sent them a survey as part of a clinical product trial conducted by MedActive Oral Pharmaceuticals to assess the effect of its oral relief products on oral symptoms such as dry mouth.

Of the 301 respondents, 151 provided written informed consent and completed a survey of symptoms and provided a medical history including prescription and OTC medications they used.

Survey. In the survey, we asked participants to report their basic demographic information (age, sex, tobacco use), comorbid medical conditions, medications used (prescription and OTC) and oral products used to manage their SS symptoms. Participants also completed a survey based on the Vanderbilt Head and Neck Symptom Survey Version 2.0 (VHNSS 2.0),⁶ which originally was developed to assess dry mouth symptoms and oral function in a population of patients with head and neck cancer. In VHNSS 2.0, participants rate symptoms and functions on an 11-point scale in which 0 indicated the lowest level of the symptom experienced and 10 indicated the highest level of the symptom experienced. Although this survey was validated in a head and neck cancer population, its primary aim is to assess the symptoms of dry mouth and oral function, which are the same as those for SS; therefore, on the basis of the clinical and research expertise of the authors of this tool and because the population we studied was patients with symptoms of dry mouth and oral function, we did not conduct any further validation testing. The survey results are comparable to those obtained in a clinical setting in which a health history that includes medical diagnoses and medication use is acquired by means of patient self-report.

Data analysis. We reported participant characteristics, comorbid medical conditions and medication use from the survey responses as means (standard deviation [SD]) for continuous variables and as percentages for dichotomous variables. For our exploratory analysis of symptom severity for participants who required more medical management than did the other participants, we grouped participants by reported number of comorbidities and number of prescription and OTC medications. We analyzed between-group symptom comparisons for dry mouth, pain, dietary problems, taste or diet changes and oral complaints by using independent samples *t* tests. We performed analyses by using statistical software (SPSS 18, SPSS, Chicago), and we set statistical significance at $P < .05$.

RESULTS

Participant characteristics and oral care product use for SS symptoms. A total of 96 percent of the sample was female, and 1.3 percent of the participants did not identify their sex (Table 1). The mean (SD) age was 65.8 (11.5) years. Five (3.3 percent) of the participants reported being smokers with a mean (SD) pack per day use of 0.75 (0.4). The mean (SD) number of oral care products—

ABBREVIATION KEY. OTC: Over the counter. SS: Sjögren syndrome. SSF: Sjögren's Syndrome Foundation. VHNSS 2.0: Vanderbilt Head and Neck Symptom Survey Version 2.0.

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