

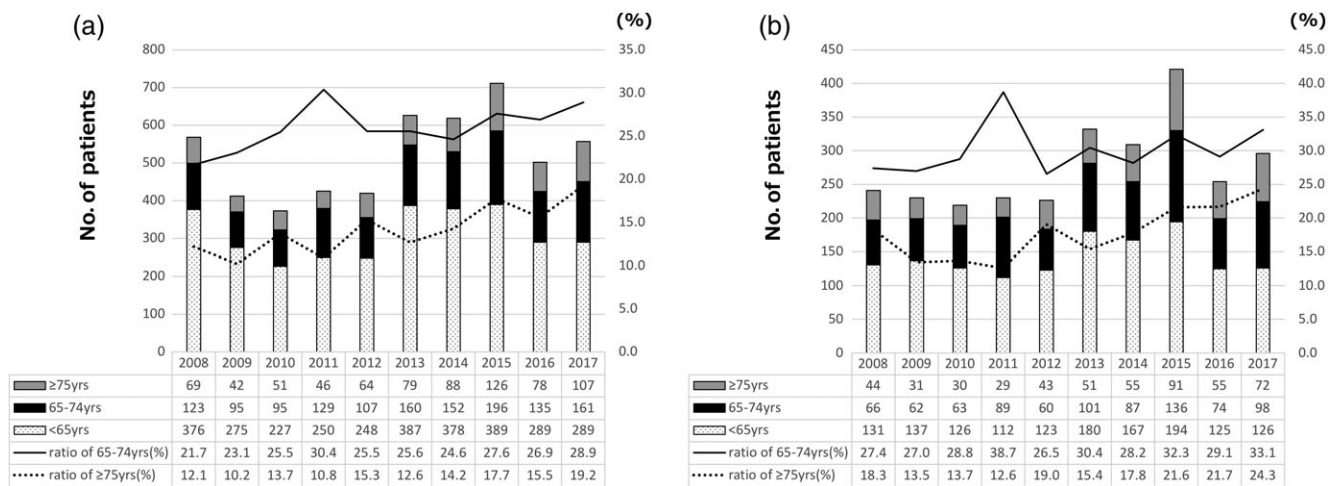
## RESEARCH STUDY

# Burning mouth syndrome: The challenge of an aging population

Dear Editor,

Burning mouth syndrome (BMS) is a chronic oral pain without any evident lesions. BMS negatively affects patient's quality of life and generates a huge amount of medical cost, up to £3000 per year.<sup>1</sup> The prevalence rate of BMS has been estimated from 1% to 3.7% in an adult population.<sup>2</sup> It has been proposed that BMS mainly affects middle-aged women.<sup>3</sup> Nevertheless, the proportion

of older patients has increased gradually in the psychosomatic dental clinic at the Tokyo Medical and Dental University. Our clinic specializes in medically unexplained oral symptoms/syndromes.<sup>4</sup> Medically unexplained oral symptoms/syndromes include BMS, atypical odontalgia, phantom bite syndrome, oral cenesthopathy and others. Figure 1a shows the proportion of older adults (aged 65–74 years, and  $\geq 75$  years) of all first visit patients at our clinic from 2008 to 2017, and Figure 1b shows,



**Figure 1** The proportion of older adults (aged 65–74 years and ≥75 years) among the first visit patients at the psychosomatic dental clinic at the Tokyo Medical and Dental University, Tokyo, Japan, from 2008 to 2017. (a) All patients. (b) Patients diagnosed with burning mouth syndrome.

among those, the proportion of older patients diagnosed with BMS. These data show a continuous increase in aging patients. While the proportion of older adults among all patients significantly increased from 33.8% in 2008 to 48.1% in 2017 ( $P < 0.0001$ ), the proportion of older adults with BMS also significantly increased from 5.6% in 2008 to 57.4% in 2017 ( $P = 0.0065$ ). The demographic transition in our clinic might reflect an increase in the aging population. The world population is aging in the 21st century due to improved healthcare, increased educational levels and economic growth.<sup>5</sup> The number of people aged ≥60 years was 962 million in 2017, twice as large as the number in 1980.<sup>6</sup> In Japan, the number of people aged ≥65 years was 33 465 441, which accounted for 26.6% of the total population in 2015, whereas in 2005 it was 20.1%.<sup>7</sup> A previous study reported that the prevalence of BMS becomes higher with increasing age.<sup>3</sup> Therefore, it is expected that the number of older patients with BMS will continue to increase. To the best of our knowledge, there are few studies of older patients with BMS, especially regarding the treatment of BMS. For older patients, we must be cautious of polypharmacy and decreased metabolism as a result of organic change. In general, amitriptyline is reported to be effective for the treatment of BMS. However, amitriptyline is rated as a drug to be prescribed with special caution for older patients by the Screening Tool for Older Persons' Appropriate Prescriptions for Japanese.<sup>8</sup> Serotonin and norepinephrine reuptake inhibitors, clonazepam, and others are also suggested for the treatment of BMS. However, for serotonin and norepinephrine reuptake inhibitors use, cytochrome P450 mediated drug drug interactions become a problem in older adults with polypharmacy.<sup>9</sup> As a good example, serotonergic drugs, diuretics and other drugs require caution in combination with duloxetine.<sup>9</sup> In contrast, clonazepam is associated with the risk of cognitive impairment, falls and fracture for older patients with their decreased metabolism. Nowadays, low-dose aripiprazole is suggested for new BMS treatment, but its efficacy and safety for older patients is still unclear.<sup>10</sup> Considering the potential risk of using medications, non-pharmacological treatment has become an alternative. Cognitive behavioral therapy and repetitive transcranial magnetic stimulation have been proposed.<sup>2</sup> They are non-invasive, but partially effective with limited evidence. New treatment strategies are required for the coming of a new age.

**Disclosure statement**

The authors declare no conflict of interest.

Takayuki Suga,<sup>1</sup> Takeshi Watanabe,<sup>1</sup> Yuma Aota,<sup>1</sup> Takahiko Nagamine<sup>2</sup> and Akira Toyofuku<sup>1</sup>  
<sup>1</sup>Department of Psychosomatic Dentistry, Graduate School of Medical and Dental Sciences, Tokyo Medical and Dental University, Tokyo, Japan  
<sup>2</sup>Department of Psychiatric Internal Medicine, Sunlight Brain Research Center, Yamaguchi, Japan

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**How to cite this article:** Suga T, Watanabe T, Aota Y, Nagamine T, Toyofuku A. Burning mouth syndrome: The challenge of an aging population. *Geriatr. Gerontol. Int.* 2018;18:1649–1650. <https://doi.org/10.1111/ggi.13548>