Supplementary Table I. Summary of search strategy

Date of Search	18/01/2022
Databases and other sources searched	Scopus, Pubmed and Cochrane databases
Search terms used	“Burning mouth syndrome”, “stomatodynia”, “stomatopyrosis”, “glossopyrosis”, “glossodynia”, “oral dysesthesia”, “glossalgia”, “etiology”, “aetiology”, “pathogenesis”, “aetiopathogenesis”, “pathophysiology”.
Timeframe	From 1985 to December 2021
Inclusion and exclusion criteria	Inclusion criteria: -Focus on the etiology of primary burning mouth syndrome. -English-language papers. -Peer-reviewed, published literature, including narrative review papers. Exclusion criteria: -Main topic not related to primary burning mouth syndrome. -Studies involving animals. -Editorials, letters to the editor, and abstracts. -Non-English-language articles.
Selection process	Two authors searched the database independently. A third reviewer mediated any disagreements between the two researchers.

Supplementary Table II. Original articles included in the narrative review

Study	Year	Number of BMS patients	Main Aim	Main results/conclusions
Lauria et al. [25]	2005	12	Quantifying the density of epithelial nerve fibers by tongue biopsies	BMS patients showed a significantly lower ($p=0.0004$) density of ENF than controls.
Penza et al. [26]	2010	56	Quantifying the density of epithelial nerve fibers by tongue biopsies	ENF density was significantly reduced in 38 BMS patients ($p<0.0001$)
Jääskeläinen et al. [30]	1997	11	Studying neuropathic mechanisms of BMS using BR and needle-EMG	BMS patients showed more frequently pain-related R3 components with non-noxious stimulation than controls
Grémeau-Richard et al. [31]	2010	20	Investigating the effects of lingual nerve block on pain in BMS patients	For BMS patients mean VAS value was 5.6 ± 2.8 cm before lidocaine injection and 2.9 ± 2.6 cm after injection ($p=0.003$)
Svensson et al. [32]	1993	23	Using argon laser stimulation to evaluate sensory and pain thresholds	Sensory thresholds significantly higher and pain/sensory ratios thresholds significantly lower in BMS
Forssell et al. [33]	2002	52	Using QST and BR recordings to study the neural mechanisms of BMS pain	Sensory thresholds indicate thin fiber dysfunction in 76% of BMS patients
Kishore et al. [37]	2021	128	Evaluating serum neuron-specific enolase levels in primary and secondary BMS patients	Statistically significant increase in NSE e in primary BMS compared to the secondary BMS and healthy groups ($p = 0.001$)
Just et al. [39]	2010	13	Using capsaicin threshold test and regional taste tests to evaluate pain thresholds and gustatory sensitivity in BMS patients	Decreased gustatory and somatosensory perception in BMS compared with healthy controls
Eliav et al. [40]	2007	22	Evaluating chorda tympani dysfunction in BMS patients	82% of BMS patients had chorda tympani dysfunction
Aframian et al. [49]	2010	29	Evaluating oral mucosa pH in BMS patients	Higher, but non-significant ($p>0.05$), pH level in BMS compared to controls
Becker et al. [50]	2011	22	Evaluate presence of LPR in patients with oral burning sensations	LPR episodes in 11 patients without temporal correspondence with intraoral burning sensations
Lechien et al. [51]	2021	81	Investigating the prevalence of LPR in BMS patients	93.8% of BMS patients reported >1 episodes of LPR
Jääskeläinen et al. [56]	2001	10	Studying the dopaminergic function of the striatum of BMS patients with PET	Dopaminergic function was significantly decreased in the right putamen (20%, $p=0.04$) of the BMS patients compared to controls
Kim et al. [59]	2012	28	Investigating salivary markers related with BMS	BMS patients showed significantly ($p<0.05$) higher levels of cortisol in UWS and of 17β-estradiol in SWS compared with controls
Sikora et al. [61]	2018	43	Evaluating anxiety and depression among BMS patients	Anxiety starts after the BMS symptoms first occur and last for a long period of time
Castillo-Felipe et al. [62]	2021	11	Analyzing the proteomic profile of the resting WS of BMS patients	Changes in saliva at the level of important pathways such as stress, immune system, and inflammation
Krief et al. [63]	2019	20	Evaluating neuropathic mechanisms using proteomic profiling of WS	Neurotrophin signaling pathway is involved in the pathophysiology of BMS by amplifying P75NTR activity, which increases neural apoptosis
Rodrigues et al. [64]	2019	14	Evaluate possible changes in saliva composition in BMS using FTIR spectroscopy	Bands corresponding to nucleic acids and thiocyanate showed greater intensity in BMS patients compared to controls.
Adler et al. [65]	2005	46	Evaluating the effect of H. pylori on the mouth	The detection of H. pylori in the oral cavity was confirmed in 87% of patients with burning, halitosis, and lingual hyperplasia

Gall-Troselj et al. [66]	2001	144	Evaluating the oral presence of H.pylori in BMS	H.pylori was significantly more present in BMS than in other groups (p=0.025)
Brailo et al. [67]	2006	76	Evaluating prevalence of gastritis in primary BMS	Gastritis in 51.3% of BMS patients VS 27.5% of controls (p<0,005); burning symptoms resolved in 79% of cases after H. pylori eradication therapy
Samaranayake et al. [68]	1989	130	Evaluating the oral carriage of Candida species and coliforms in BMS patients	The intra-oral prevalence of Candida species and coliforms was higher in the BMS group compared with the controls
Cavalcanti et al. [69]	2007	31	Analyzing the ralationship between the prevalence of Candida species and BMS	No association was found between BMS and the prevalence of Candida species.
Sardella et al. [70]	2006	61	Evaluating UWS and SWS flow rates measurements, laboratory tests, isolation of Candida species, assessment of parafunctional activities, detection of anxiety and depression in BMS patients	No statistically significant differences were found with regard to the tested variables except for anxiety and depression in BMS patients
Farah et al. [71]	2018	79	Evaluating oral carriage of Candida in BMS patients	No association between BMS and the presence or load of oral Candida.

BMS: burning mouth syndrome; BR: blink reflex; EMG: electromyography; ENF: epithelial nerve fibers; FTIR: fourier transform infrared spectroscopy; LPR: laryngopharyngeal reflux; NSE: neuron-specific enolase; PET: positive emission tomography; QST: quantitative sensory tests; SWS: stimulated whole saliva samples; UWS: unstimulated whole saliva samples; WS: whole saliva samples.