

Psychosomatic Disorders Affecting the Oral Cavity: A Review on Etiopathogenesis and Treatment Modalities

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Abstract

Psychosomatic disorders are bodily expression affecting both mental and physical well-being of an individual. These are caused due to emotional feelings that have been suppressed for long periods and thus disturb the normal functioning of organ system. These disorders may not present in the same way in every individual. In oral cavity these may show various clinical presentations ranging from simple ulcers to autoimmune diseases. The occurrence and severity of these oral disorders have a direct correlation with the psychological status of the patient.

Thus, management in such cases requires the amalgamation of both psychotherapy and pharmacotherapy. The aim of this article is to review the psychosomatic disorders that affect the oral cavity and the measures needed for stress management.

Keyword : Autoimmune disease ,Ulcers , psychotherapy.

INTRODUCTION

The basic concept in psychosomatic medicine was first introduced by Freud; who used the term

Conversion Hysteria. This term describes the reaction in which emotional conflicts are converted in to bodily or somatic symptoms.

Conversion Symptom is the preferred term used. About one-third of people around the world reported feeling stressed and worried according to Gallup 2019.(1)

India ranked 14 in stress statistics among 74 countries. While in happiness statistics index India has been ranked 126 out of 146 countries as per world happiness index for 2023.(2,3)

Stressed statistics of India for the year 2022, according to their age criteria as per A. Minhas 2023 is for 16 to 24 years old 25%, for 25 to 34 year old 23%, for 35 to 44 years old 21%, for 45 to 54 years old 22%, for 55 years old and above 24%.(4)

Oral cavity is directly or symbolically related to major human instincts and passions. It represents the organ for expression of certain instinctual cravings and is charged with high psychological potential.(5,6) Thus oral symptoms are common psychosomatic manifestations.(7)

Leading 15 stress situations listed in Social Readjustment Rating Scale:(SRRS)(8)

1. Death of spouse
2. Divorce
3. Marital separation
4. Jail term
5. Death of close family member
6. Personal injury or illness
7. Marriage
8. Fired at work
9. Marital reconciliation
10. Retirement
11. Change in health of family member
12. Pregnancy

13. Sex difficulties

14. Gain of new family member

15. Business readjustment

Most widely recognised diseases due to psychological factors are gastric ulcer and ulcerative

Colitis, other conditions being cardiospasm, migraine and variety of skin diseases. Relatively little study has been carried out on relationship of emotional factors on oral diseases.(9)

Relationship Between Stress and Body Response

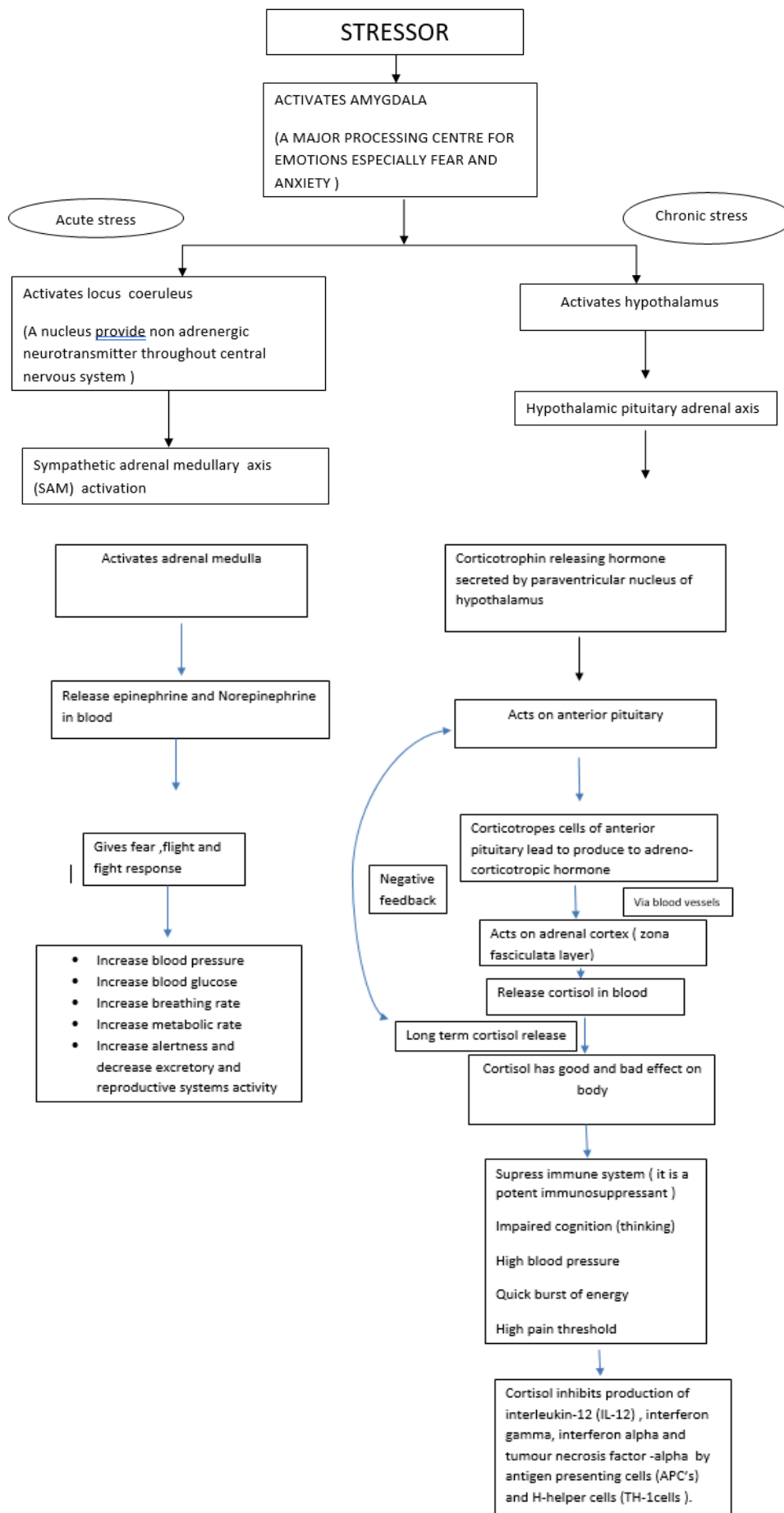
Stress is a physiological and psychological response to challenging or threatening situations, which triggers the body's "flight or fight" mechanisms characterized by heightened alertness and the release of stress hormones. Stressor is a stimulus or situation that causes stress. It occurs in two forms:

1. External stressor include major life change, relationship difficulties toxic environment, injury or illness, financial stress, work pressure.
2. Internal stressor include negative self-talk, rigid thinking, unrealistic expectations, lack of acceptance and control, pessimism, perfectionism.(10)

Types of Stress (11)

Acute stress : It is our own body's brief and immediate response to a new challenge, event or demand. And it triggers flight or fight response.

Chronic Stress : If acute stress isn't resolved and lasts for longer period of time, it becomes chronic stress. This stress is constant and doesn't go away.



Flowchart1(12)

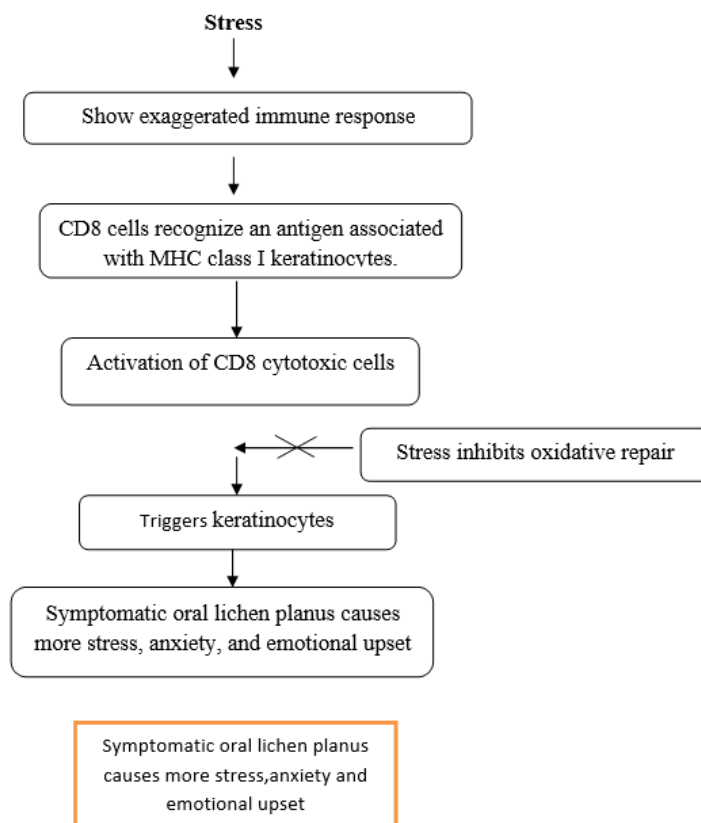
Stress triggers a cascade of response in the body and disturbs the homeostatic mechanism . It causes both hormonal and hemodynamic disturbances .(13,14)

Chronic stress is likely to contribute to the progressive long term development of oral disease through two pathways:

1. Stress motivates individuals to cope in unhealthy way that fosters oral diseases (e.g.: alcohol and tobacco , substance use).
2. Chronic stress contributes to high allostatic load that leads to dysfunction of physiological systems critical to homeostasis and affects underlying mechanism of disease progression.

Common Oral Disease Affected by Stress Oral Lichen Planus

World Health Organization defines oral lichen planus as a potentially precancerous condition . It is a immune mediated mucocutaneous , chronic inflammatory disease characterized by bilaterally white striations or plaque on buccal mucosa , tongue or gingiva, it is found commonly in adults (50-55 years of age) and predominately affects women usually by a 1.4: 1 ratio over men , thought to affect 0.5 to 1.0% of world population(15,16) . Among Indians prevalence is 1.5%. stress and anxiety exacerbates oral lichen planus psychologically skin is an erogenous zone and channel for emotional discharge so that troubled skin could be manifestation of unexpressed anger or an inner conflict due to internal stress.(17,18).



Flowchart 2

Pourshahidiet al.(2011) Simarpreet v. sandhu et.al (2014) and Michalina szymczakpaluchet al. (2023)explain the relationship between incidence of oral lichen planus with stress and depression and also proved that various mental stress control methods can have additional positive effect in successive treatment of oral lichen planus. (19,20,21)

The above mentioned studies concluded that patients do perceive a relationship between stressful life event and onset of oral lichen planus. Also, the use of mental stress control methods as an additional therapy had a positive effect on treatment of oral lichen planus, then using standard pharmacological therapy alone. So, stress management and behaviourcounselling should be a part of management protocol of oral lichen planus.

Recurrent Aphthous Stomatitis (RAS)

RAS is a small, shallow, painful, well circumscribed round shaped ulcers of oral mucosa. It is due to stress , nutritional deficiency and immune response of oral epithelium . It affects approximately 20% of the general population, With a range of 5% to 66%.Highest prevalence of 66% was found by ship et al . on dental and medical students due to stress. (22,23,24)

Lakshmi Kavitha Nadendla et al (2015)conducted a study on 60 patients with RAS , and finds a positive association between salivary cortisol levels , stress and anxiety in RAS patients during inactive stage , Gallo Cde et al(2009), Albanidou – farmaki et al (2008), MC Cartan et.al(1996), revealed that the stress plays an important role in the onset and manifestation of RAS , Liftialayyinatussyifa et al. in 2023, reveals that several cases of RAS are caused by psychological stress and eliminating the stress causing variables is one of the key therapies for these disease . Some patients needcounselling with experts in stress management in addition to system treatment.(25,26,27,28)

The above mentioned studies conclude that there is a strong relation between stress and cortisol level which ultimately leads to more incidence of RAS. Thus beside traditional pharmacological treatment, above findings suggest that counselling and stress management is also needed.

Bruxism

Bruxism is a repetitive muscular activity of the jaw characterized by grinding or clenching the teeth either during sleep or as an unconscious habits during waking hours, associated with rigidity, bracing or thrusting of the mandible.Its aetiology is multifactorial , but stress is one of the main factor associated with bruxism (29) .

Diana Vladutu et al in 2022, determine the prevalence of possible bruxism in 328 students of craiova and its association with stress and other manifestations of the TMJ disorders and he found than sleep bruxism present in 16.28 % , awake bruxism present in 68.99% and 14.73% of participants presented a combined form . so, he revealed that bruxism especially awake bruxism , has increased in prevalence among young students and it has been associated with increased level of stress (30).

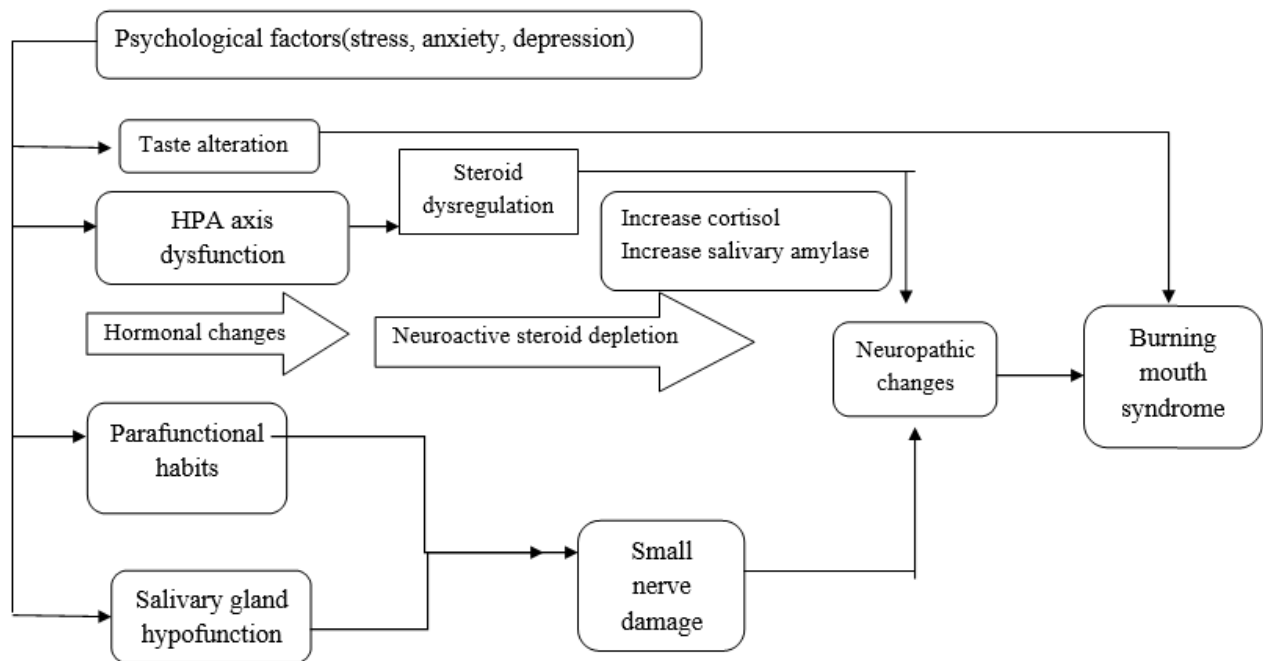
Victoria dos santoschemelo et al (2020) and Daniele manfredini et al (2009) showed that 97% of people present with bruxism have higher stress level , therefore stress and bruxism are positively related (29,31) .

In 2022, Sona .J .Lal et al said , awake bruxism has been related to stress . Psychotherapeutic approaches can be implemented to foster calmness, patient counselling leads to a decrease in tension and also create awareness of the habit. This will increase voluntary control and thus reduce parafunctional movements (32).

Number of studies regarding psychological stress has been published but none of them proved the exact nature (33).

Burning Mouth Syndrome

Also termed as glossodynia or glossopyrosis, is a chronic orofacial pain disorder that is characterized by generalized or localized burning sensation without the presence of any specific mucosal lesions. Women are at 7 time's higher risk of burning mouth syndrome thanmen. Factors contributing to aetiology are hormonal, allergic disorders, salivary gland hypofunction , chronic low grade trauma andpsychiatric abnormalities . Stress and Anxiety exacerbate the condition by increasing the level of cortisol , leading to hormonal imbalance (34,35).



Flowchart 3

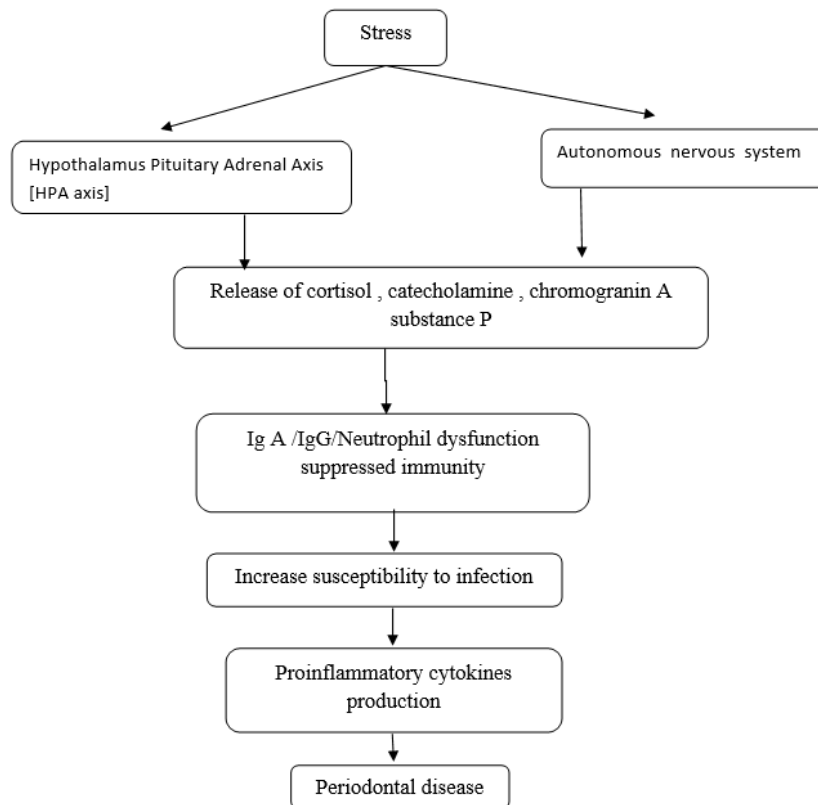
A Greater number of cases of BMS are undoubtedly based on psychogenic factors, the most common being is emotional conflicts, sexual maladjustment, cherophobia.

Fahimeh Rezazadehf et al (2021) and Andreluis Porporatti et al(Nov 2023)found that stress was significantly increased in burning mouth syndrome group presented 25.73% higher cortisol levelsand 40.62% higher alpha – amylase levels than controls, Ewa Ferensztajn et.al (Nov ,2013),R. Arvindhan et al (2014),Andre luis Porporatti et al(Nov 2023) , observed that the psychiatric aspect of burning mouth syndrome is significant , the most frequent comorbidities are stress and anxiety disorders and number of psychotropic drugs play an essential role in its treatment . Variety of drugs has been used including, antidepressants, anticonvulsants and antipsychotic drugs, among them olanzapine brought about a rapid and

significant reduction of symptoms. The causes of BMS are multifactorial and remains poorly understood still it is considered to be a neuropathic condition with central and peripheral components.(37,38,39,40)

Chronic Periodontitis

It is an infectious disease in inflammation within the supporting tissues of the teeth , progressive attachment loss and bone loss (Carranza 11th edition).It is formerly known as “adult periodontitis” or “chronic adult periodontitis ”.It is a multifactorial disease caused by hormonal changes,endocrinal influences, immunodeficiency disorders , stress and psychosomatic disorders, genetic disorders and other systemic conditions . It is more prevalent in adults mostly among males. Psychological stress represents a risk indicator for periodontal disease and should be addressed before and during the treatment.(41,42)



Flowchart 4 (43)

In 2020, Julita Maria F Coetho et.al. Conducted a study on 621 individuals and he observed that the frequency of these outcomes among those exposed to stress was 15 -36 % higher than those without the condition of stress and he reaffirmed the need to prevent and control stress. Sathesh Mannem et.al (2012) ,Sachin Goyal et.al. (2013),Joanna Hudson et.al (2021)and Federica Romano et.al (2023) also observed that chronic periodontitis showed a significant co-relation with hypercortisolaemia and stress. Mohammad Tariq et.al (2012) Archika Sudhanshu et.al(2017) said that host modulation therapy and yoga accelerates the treatment outcomes by combating the stress which is a major factor affecting the treatment of periodontitis.(44,45,46,47,48,49,50)

A Typical Facial Pain

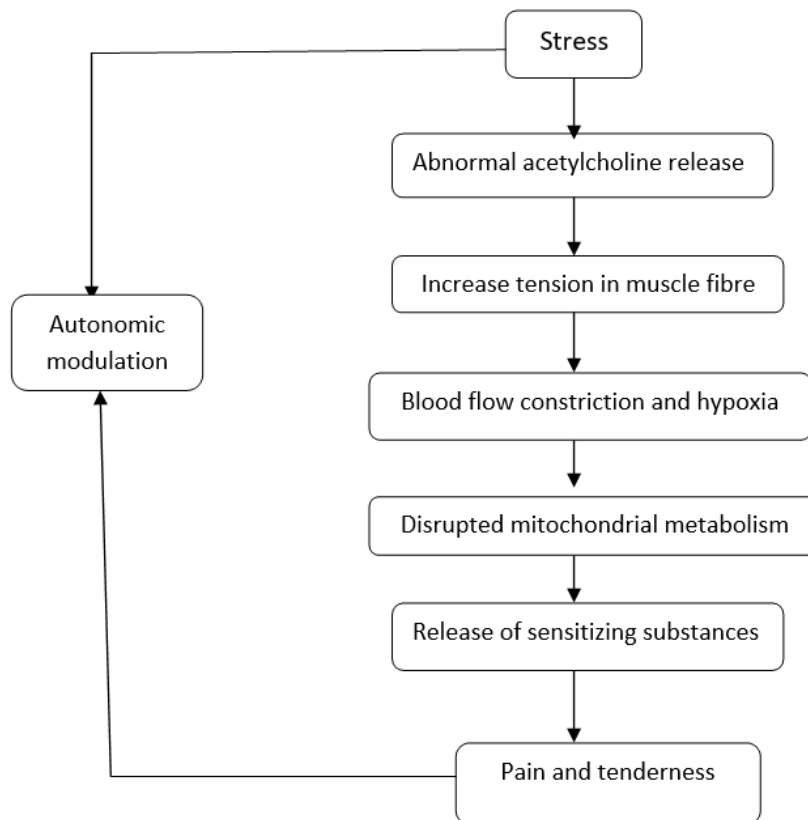
It is characterized by chronic or constant pain present from last 4-5 months without any underlying abnormality. Clinically seen as continuous or daily pain with varying intensity (dull and aching) confined to a particular facial area .Burning sensation may be present . Female are more prone to symptoms than male. The condition is believed to be psychogenic in origin with stress

and anxiety playing a leading role in the aetiology. People suffering from myofascial pain demonstrate depressive symptoms, decrease performance in activities and reduced quality of life (51,52).

One of the important atypical facial pains is MPDS (Myofascial Pain and Dysfunction Syndrome)

Myofascial Pain and Dysfunction Syndrome (MPDS)

Myofascial pain and dysfunction syndrome (MPDS) also termed as temporomandibular or masticatory arthralgia . It is a condition in which there is spasm of masticatory muscles rather than temporomandibular joint (TMJ). Pain clinically diagnosed on the basis of laskin's four cardinal sign i.e., unilateral pain, muscle tenderness , clicking noise in Temporomandibular joint and limitation in jaw function. It has a multifactorial aetiology and contributory factors include mild occlusaldisturbance, hypermobility of joint, emotional upset, and stress. Stress either from social or domestic sources increases the muscular fatigue which further leads to muscle spasm .In 2009, Luciana pinenta e silva machadoetal conclude that women is affecting more than men.(53,54,55)



Flowchart5(56)

Jones et al (1997) , Korszun et.al (2002), GM Vedolin et.al (2009) , Lakshmi Kavithanadendla et al (2013), Yoshihara et.al (2005) , Muhammad Kashif et.al (2021) , and many more noticed higher salivary cortisol level in response to stress and anxiety in MPDS patients and observed that external stressors have potential impact on masticatory muscle tenderness.(57,58,59,60,61,62) According to LG Mercuri et.al (1979) when exposed to stress, patients respond with increased masticatory muscle activity , rather than general increase in body muscle tone . Such activity whether centrally generated or peripherally manifested as parafunctional habits , or both can result in muscular fatigue and spasm , leading to myofascial pain dysfunctional syndrome. Andrew Lalchheanawma et.al (2019), reveals that depression is said to be associated with chronic myofascial pain due to its dual neuronal connection , both believed to be influenced by serotonin and norepinephrine, therefore conclude that treatment goals should be based on the emotional symptoms along with physical symptoms(63,64).

Uma Shankel Pal et.al (2014), Abdul Ahad Khan et.al (2018) and Chris Penlington ,et.al (2022) shows that psychological therapies help in management of myofascial dysfunction syndrome which leads to reduce pain , disability and distress. Nowadays, special role is attributed to psychological therapies including stress management, biofeedback, cognitive behavioural therapy, Raj – yoga meditation, pranayama , antidepressants, and TENS (transcutaneous electric nerve stimulation) in combination with conventional therapies, non-invasive treatment modalities showed promising results in myofascial dysfunctional syndrome (65,66,67).

Management of Stress

Psychosomatic disorders directly affect the quality of life interfering with normal functions .Since these disorders relate the mind and body, treatment involve both psychological and pharmacological therapies.

PSYCHOLOGICAL THERAPIES (68,69)

1. Cognitive Behavior Therapy (CBT)

It is the best treatment for patients suffering with stress, anxiety and depression and also helpful in other mental and physical problems. It helps patients to change their thoughts and behaviour which are putting negative effect on their life and helps in boosting happiness.

2. Mindfulness Training

In the form of yoga and meditation, mindfulness training can lead to stress reduction and help the patient to focus attention to present moment and away from what may have happened in past.

3. Psychodynamic Psychotherapy

It is a method of verbal communication in which with the help and guidance of a therapist the patient is able to express the feelings and handle difficulties in more adaptive manner.

4. Hypnosis

It is a technique by which the conscious control of mind is suppressed and the subconscious mind is controlled by the hypnotist, which helps in achieving a state of relaxation. In this relaxed state patient's feelings and emotions are discussed.

5. Acupuncture and Progressive Muscle Relaxation

It also helps in relieving stress, anxiety and depression.

6. Pharmacotherapy (70)

Four major classes of medications are commonly used in treatment anxiety disorders.

1. Selective Serotonin Re-Uptake Inhibitor

It relieves anxiety symptoms by blocking the re-absorption or re-uptake of serotonin by certain nerve cells in brain, leaving behind more serotonin available to improve mood.

2. Serotonin Neuroepinephrine Re-Uptake Inhibitors

They increase the level of neurotransmitters serotonin and norepinephrine in the brain through their re-absorption into brain cells.

3. Benzodiazepines

It is used for short term management of anxiety and stress effectively causing muscle relaxation.

4. Tricyclic Antidepressants

The purpose of tricyclic antidepressants is same as benzodiazepines but less risky in long term use.

CONCLUSION

In today's world stress is showing significant detrimental effect on oral health. Management of such disease is strenuous job for clinicians. These diseases are either manifested or predisposed due to emotional stress apart from the known etiological factor, once diagnosed that there is an underlying emotional cause a positive psychological approach should be implied along with regular treatment modalities along with long follow up studies are required to formulate effective management of these diseases.

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