THE EFFECTS OF SOME SYSTEMIC MEDICATIONS IN BURNING MOUTH SYNDROME OCCURRENCE (A CLINICAL STUDY AMONG AN IRAQI SAMPLE)

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ABSTRACT

Background
Despite the numbers of studies upon burning symptoms in patients with clinically healthy appearance of the oral mucosa, as well as burning mouth syndrom if itself , they both remain still challenging subject. The aim of this study was to determine the effects of antihypertensive and antidepressant medications in the occurrence of BMS in relation to other etiological factors that may share in causing this disease.

Patient and Methods
Fifty patients (25 female and 22 males) were selected as a study group, all of them suffered from BMS, clinical and laboratory examinations in addition to previous diagnosis for the patients on the referral forma w ere depending in the identifying the underlining etiological causes for the BMS.

Results
This study revealed that antihypertensive and antidepressant medications were more affected among this studied Iraqi sample with BMS than other etiological factors

KEYWORDS: Burning Mouth Syndrome (BMS), Systemic Medication, Menopausal Conditions, Etiological Factors

INTRODUCTION

Burning mouth syndrome (BMS) may be described as a burning sensation that in often qualitatively compared to a toothache. Burning symptoms might occur when oral mucosa has clinically healthy appearance(1)

BMS is a chronic pain without any visible alteration of the oral tissues(2)

It is very important for clinicians to be able to distinguish BMS and other diseases associated with this syndrome, so BMS is considered to be a pain or burning sensation affecting clinically normal oral mucosal tissues for which local and systemic causes were excluded. The term syndrome is including , feeling of dryness ,altered taste and the sensation affects the most oral tissues but the tongue is the most site affected(3)

Burning mouth syndrome usually begins with no known triggering factors , but some studies suggest that certain factors may increase the risk of developing BMS, these risk factors may include , being so called "super taster " or some people with a high density of small tongue bumps called papillae which contain taste buds, also upper respiratory tract infection, previous dental procedures, allergic reaction to food, medications and stress considered to be a risk factor when the cause of BMS is not known, the condition is called primary or idiopathic BMS, while secondary BMS is caused by an underlying medical condition, such as dry mouth (xerostoia), oral candidiasis, geographic tongue , anxiety and depression, other cause may play a role in BMS such as vitamins deficiencies, prosthodontic appliance, damage to the nerve that
control taste and pain in the tongue, allergic reaction to some food, reflex of stomach acids, gastrointestinal infection, hormonal disturbances, some habitual habits such as teeth grinding, lip sucking and some medications for some systemic diseases such as diabetes, hypertension and depression. \(^{(4)}\)

This clinical study was arranged to evaluate the effects of hypertensive medications (angiotensine drugs) and antidepressant medication (anxiolytic drugs) in BMS occurrence during clinical study through an Iraqi sample of patients in Baghdad.

**PATIENTS AND METHOD**

**Patients**

Out of eighty patients, fifty patients were selected as a study group with twenty two males and twenty eight females patient, the ages for both male and female patients ranged between 30-60 years, all of them suffered from burning mouth syndrome (BMS). This study lasted more than eight months. The studied patients were collected from Al-Emam Ali general Hospital, different medical and dental centers and several special dental clinics in different areas of Baghdad. All patients in this study group developed BMS according to medical or dental reports from medical or dental centers and private special clinics.

**Method**

Medical and dental history was obtained from patients with symptoms suggestive of BMS. The patient's health and medication were reviewed which revealed large number of medications which can cause a dry mouth and subsequently oral mucosal soreness and sensation. Investigations were employed to confirm that the affected patients did not have one of the conditions which may give rise to symptoms similar to these of BMS. They should only be undertaken if the detailed history and examination indicated that they were appropriate currently be considered in a patient with symptoms of a burning mouth, these investigations and assessments which were done include:

- Full blood count to exclude anaemia.
- Assessment Iron deficiency during complete blood picture
- Fasting blood glucose levels to exclude diabetes mellitus
- Measurement of salivary flow (simple spitting method) to exclude dry mouth
- Assessment of denture fit and function also consider any porosity or roughness in addition to the design and adjustment
- Psychological assessment by depending on the referral forma and the diagnosis of the psychiatric physician
- Simple scribing test to differentiate oral candidiasis from others white oral lesions, that candidiasis can be easily scribed off leaving ulcerative painful surface area, then the candida albicans species can be identified by biochemical test, also culturing to the lesion in agar media for 48 hrs at 37c can prove the presence of candida
- Thyroid stimulating hormone (TSH) can be done by making SH3, T3 and T4 tests to assess the level of thyroxine in the blood
- Antihypertensive drugs like captopril and other diuretics medications.
- Antidepressant medications like diazepam drugs and barbiturate derivatives medications.
- Hormones changes in women during menopausal period when the ovaries began to make less quantity of estrogen after the 45 years age.

- Diabetic patients under oral medication such as daoniel and glucoghage drugs.

RESULTS

The studied patients were fifty, with twenty two male and twenty eight female patients, all of them suffered from BMS. The patients with BMS were divided according to the etiological factors which were present in their medical reports as in the following table:

<table>
<thead>
<tr>
<th>Number of Cases</th>
<th>Etiological Factors</th>
<th>Male</th>
<th>Female</th>
<th>Total % Out of 50</th>
<th>Male %</th>
<th>Female %</th>
</tr>
</thead>
<tbody>
<tr>
<td>13</td>
<td>Antihypertensive drugs</td>
<td>8</td>
<td>5</td>
<td>26</td>
<td>16</td>
<td>10</td>
</tr>
<tr>
<td>11</td>
<td>Antidepressant drugs</td>
<td>5</td>
<td>6</td>
<td>22</td>
<td>10</td>
<td>12</td>
</tr>
<tr>
<td>6</td>
<td>Menopausal factors</td>
<td>Zero</td>
<td>6</td>
<td>12</td>
<td>----</td>
<td>12</td>
</tr>
<tr>
<td>9</td>
<td>Diabetic patients under medication</td>
<td>5</td>
<td>4</td>
<td>18</td>
<td>10</td>
<td>8</td>
</tr>
<tr>
<td>5</td>
<td>Complete and partial denture wearer</td>
<td>3</td>
<td>2</td>
<td>10</td>
<td>6</td>
<td>4</td>
</tr>
<tr>
<td>3</td>
<td>History of tongue disease</td>
<td>1</td>
<td>2</td>
<td>6</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>3</td>
<td>Oral candidiasis</td>
<td>Zero</td>
<td>3</td>
<td>6</td>
<td>Zero</td>
<td>6</td>
</tr>
</tbody>
</table>

The patients with antihypertensive drugs (8 males and 5 females) with duration ranged between 2-7 years for the drugs intake also their age were 50 years and over except one female her age was 35 years. The main site affected in the oral cavity for those patients were the tongue and palate. While patients under antidepressant drugs (anxiolytic drugs), they had received this drug for more than 3 years ago, their ages ranged between 30-50 years, mostly the buccal mucosa of cheek and tongue were affected. One of the findings in this study, there were 3 females patients with candidiases, in different age groups, in addition to 6 female patients over 45 years age, the most common sites affected were lower gingiva, tongue and the floor of mouth, in addition to that, another etiological factor effect both male and female patients in different age groups and the tongue, floor of mouth and palate were also mostly affected. So the patients under antihypertensive medication and patients under antidepressant medications recorded significant rate in BMS occurrence according to this recent study (p<0.05), while other etiological factors recorded non significant rate in BMS (p 0.05). Some cases reflected multi factorial causes share in BMS, but according to this current study the drugs of antihypertensive and antidepressant played a big role in the occurrence of BMS among the studied sample of an Iraqi sample.

DISCUSSIONS

Burning mouth syndrome effects widely many groups of the Iraqi people but the studies about this disease are rare, so this current study arranged to evaluate the effects of systemic medications in BMS occurrence because large groups of Iraqi people are affected with systemic disease and they were under medication intake. Fifty patients, male and females, all of them suffered from BMS, their ages ranged between 30-65 years and the current study lasted for more than eight months, the patients were classified according to the etiological factors as reported in the related medical case sheets.
and clinical reexamination of the participants patients. This study revealed that the patients under antihypertensive drugs and antidepressant drugs recorded significant effects in BMS occurrence even many etiological factors share in causing this syndrome, also old ages and tongue were mostly involved by this syndrome. This recent study revealed that systemic medications specially antihypertensive and antidepressant drugs were significant in causing BMS.

BMS causes complications associated with pain, depression, anxiety, and psychological conditions (5).

In the current study these complications also were present. BMS is associated with burning of the tongue, lip, and other mucosal surfaces and post menopausal symptoms were highly recorded among BMS female patients (6), that was agreed with the findings of the current study, but menopausal conditions may be associated or hidden with other etiological factors in causing BMS and the current study revealed that the tongue was mostly affected with this syndrome may be the sensation was exaggerated because of presence of the taste buds. According to Rojo et al study1989 (7) which appeared the hormonal changes associated with menopause, psychological factors including anxiety, depression, stress, and personality disorder share in BMS formation, this recent study was in agreement with those findings. Bergdhl et al study1999 (8) appeared that the use of systemic drugs was observed in 86% of patients especially with antihypertensive, antidepressant drugs and other similar chronic use of drugs as a significant factors in BMS, the recent findings of this current study were completely in agreement with Bergdhl et al study.

CONCLUSIONS

- Patients with angiotensin and anxiolytic medications recorded significant rate of BMS occurrence.
- Tongue represented the most common site affected by BMS.
- Other etiological factors such as diabetes, candidiasis, hormonal changes and others may share in causing BMS.
- Older age groups were involved more than other ages.

REFERENCES