

Salivation Quantum – Stomatopyrosis – Autogenic Training

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ABSTRACT

Stomatopyrosis of 'burning mouth' syndrome, in a narrower sense of definition, is a condition characterized by sensation of burning and heating in mouth, despite its normal mucosa. This research has been directed towards treatment of stomatopyrosis, putting emphasis on the implementation of psychopharmacotherapy and psychotherapy. The research was conducted on altogether 120 respondents suffering from stomatopyrosis. The respondents were divided into two equal groups: each one comprising 60 members. All the respondents were treated by means of a standard topical therapy. All the patients were assessed clinically and by means of psychological tests measuring depression and anxiety four times: once before the treatment, after one month, after two months and after four months since the beginning of the treatment. The acquired data were afterwards statistically processed. When grading the symptoms on VAS, i.e. visual analog scale, the subjective assessment of symptoms was marked as 7–8 cm, which shows a high degree of burning sensation. According to our study, the quantity of saliva, which was at the beginning of the research slightly decreased, normalized after the treatment. Apart from the clinical investigation of stomatopyrosis, we applied Depression and Anxiety questionnaires. On the basis of our research, we have concluded the following: the comorbidity of stomatopyrosis with the phenomena of anxiety and depression proves that, among other factors, there is a psychogenic aetiology of this disease. Autogenic training, which is a psychotherapeutic anxiolytic technique, is a therapy of choice for stomatopyrosis, which contributes not only to the elimination of oral complaints, but to the emotional rehabilitation of the patients as well, and to the reduction of dryness in the mouth.

Key words: stomatopyrosis, autogenic training, salivation quantum

Introduction

Mouth is an important part of the human organism. Mouth symbolizes an opening through which spirit, word and food pass, it symbolizes a higher level of awareness, ability for making reasonable judgments. That is why it is important for the mouth, which functions as a mirror, to reflect not only the physical state, but the very psyche (mental life) of a person. It is well known that many illnesses of our bodily system, both physical and psychological, can be manifested within the oral cavity.

Stomatopyrosis is a state characterized by a burning sensation, regardless of the normal mucosa. Symptoms of burning within the oral cavity are caused not only by organic diseases, but also by psychological factors, which are being manifested without any pathological changes in the mouth. Dryness of the mouth cavity is caused by

the activities of sympathetic and parasympathetic nervous system, depending on the psychological profile of the person. Dryness and stomatopyrosis are frequently associated with the emergence of psychogenic disturbances, the most common among them being depressions, anxiety, emotional insecurity and stress (Chevalier et al.¹, Luc et al.²).

Depression is a state of a decreased psychophysical activity marked with sadness, lethargy, apathy, and aggravated and slowed-down thinking. Psychodynamically, depression is an autoaggression. It shows a loss of a beloved object, to which ego reacts with aggression. What happens then is the withdrawal of the libido that suffered the loss to the ego, which is also starting to withdraw, enabling the aggression to conquer it. This is why a depressed person strives for self-destruction (Kulenović et al.¹⁰).

Anxiety is a complex and unpleasant feeling of fear, tension, and insecurity, accompanied with an activation of the autonomous nervous system (Pokupec-Gruden et al.⁷).

Stress is a reaction to a trauma and it helps a person to survive. Inability of a person to adapt to a trauma disturbs the balance and causes numerous psychosomatic diseases (Ingleš et al.¹¹).

It is commonly perceived that various psychological states of stress, neuroses, psychoses etc. affect the whole organism, especially the base of the vegetative nervous system, which leads to the dryness within the mouth, which is conducive to the symptom of burning sensation (Bergdahl et al.³).

Psychotherapeutic procedure of autogenic training is regarded to be efficacious in the treatment of psychical disturbances, and it is a modern method of treating depression and anxiety. Autogenic training is a child of hypnosis, but it is not the only source. Psychoanalysis is based on the 'opening' of the patient and an intensive monitoring of his/her feelings and it is considered to be the queen of psychotherapy. Autogenic training is a procedure the aim of which is relaxation. Its source is in the office of psychotherapist J. H. Schultz, who used this method to treat ill people, but it gradually started to be practised by the healthy, in order to prevent the possible disease(s) (Rudan⁹). The foundation of autogenic training consists of a series of exercises, in which, alongside with physical changes, by means of autosuggestion, the person experiences a psychological relaxation as well. The key word here is: autosuggestion. By means of autosuggestion we deliberately, which means fully aware, and positively choose the thought which is significant for us. We might say that autogenous training is more an autohypnosis than an autosuggestion. People who conduct autogenic training have a feeling they have everything in their hands, they have become both the person being suggested to and the person suggesting. By means of autogenic training, the outer world is being directed towards the inner world, which again enables the focus being directed towards one's own psychical life. Autogenous training is a kind of self-analysis. It helps us to get an insight into our own physical changes and our spiritual life through various associations, which used to be out of our attention, as a consequence of constant outer stimuli.

The technique of autogenic training comprises the following:

- 1) isolation from the surroundings,
- 2) closing one's eyes,
- 3) peace, serene peace (once)
- 4) my right (left) arm is totally comfortably heavy (six times)
- 5) peace, serene peace
- 6) my right (left) arm is totally comfortably warm (six times)
- 7) peace, serene peace (once)
- 8) i am breathing (six times)

9) my heart is beating peacefully and rhythmically (six times)

10) peace, serene peace (once)

11) stomach is filled with pleasant warmth (six times)

12) peace, serene peace (once)

13) my forehead is pleasantly cool (six times)

14) peace, serene peace (once)

Each formula is to be mastered within the period of two weeks, which means that autogenous training altogether lasts for three months.

Its important to identify clearly which of the above statements are the 6 standard exercises of autogenic training as defined by Schultz, and which one is taught each week i.e. (Grushka et al.⁵, Poro¹²).

All six formulae of autogenic training can be uttered in a period shorter than 20 minutes. Then we can either go on and either start acquiring suggestions related to the elimination of the symptoms or simply stick to one and the same exercise, practising it, feeling it, experiencing it in the milieu of the already acquired suggestions (Gruden⁸).

Purpose of the work

It is well known that stomatopyrosis is being associated with the emergence of stressogenous disturbances, which can be said for the decrease in the saliva quantum due to the interconnectedness between vegetative nervous system and psychogenic factors.

It is also well known that numerous psychotropic drugs may cause a decreased saliva flow. The purpose of this research was to determine if it is possible to treat psychogenic factors which contribute to the emergence of stomatopyrosis and the decrease flow of saliva by means of autogenic training.

Materials and Methods

Our research was conducted on patients suffering from stomatopyrosis symptoms and a decreased salivary flow, whose condition was caused by psychogenic factors. There were 60 patients of various age (25–60 y). They were divided into two groups: one group was subjected to autogenic training and the other one was the control group. Regarding their age and gender, the patients suffering from burning sensation located within the oral cavity were elderly people, of both sexes. As far as their profession was concerned, the majority of them were either old age pensioners, followed by clerks and workers. The clinical part of the research was conducted on the Oral medicine institute, while psychological profile of the patients was determined at the Clinic for psychological medicine within University Hospital Zagreb. All the tested patients were under a strict surveillance of a psychotherapist. They were treated by means of autogenic training, and were examined one month after beginning of therapy, after two months and after four months, by means of psychological tests and psychotherapist's ex-

pertise. Clinical diagnostics of the oral cavity was also performed after a month, two months and four months, by means of measuring of salivation quantum, and VAS-scale, which shows the intensity of the burning sensation in the mouth. Psychological tests for anxiety and depression were determined according to previous tests, which revealed that burning mouth sensation and dryness are most commonly found with patients suffering from stress, as well as from depression and anxiety. So these patients were given depression and anxiety tests, which they were asked to fill in on their own. The condition of the patients was checked by means of tests and a check-up by their psychotherapist after one month, after two months and after four months.

Results

In this paper, we will present the outcomes we obtained in our research related to the treating of patients suffering from stomatopyrosis and dryness of their mouth, the cause of which is of a psychogenic nature. The research was conducted within different parameters. We presented objective parameters in relation to the subjective condition of the patients, which we tried to be objective by means of VAS-scale and salivation quantum measurements. In order to monitor psychical state of our patients during the treatment, we used psychological tests and assessment of their psychotherapist.

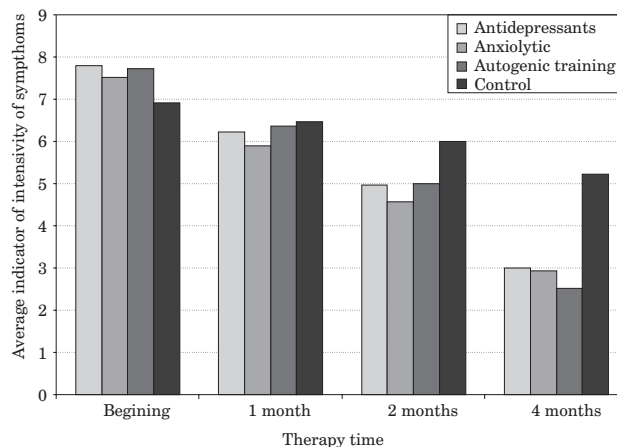


Fig. 1. Average value of estimated symptoms of stomatopyrosis (VAS) according to the research groups through different time periods (N=120).

Visual analogous scale is a scale which helps us to be objective with the the subjective intensity of the symptom. The scale consists of numbers ranging from 0 to 10, representing the intensity of the symptoms, in gradation from the smallest to the biggest. Measurement is presented in centimetres. Figure 1 shows the average grades according to the VAS-scale, as objectivity of the subjective assessment of the symptoms in relation to the vari-

TABLE 1
CHANGE OF VALUES OF SALIVA QUANTUM THROUGH THE PERIODS OF TIME FOR THE RESEARCH GROUPS (N=120), RESPONSIBLE RESULT OF THE ANALYSIS OF VARIANT

Research periods	Group	N	Average	SD	SE	F	df	p
Beginning	Antidepressants	30	7.80	0.85	0.15	5.884	3.116	0.001
	Anxiolytic	30	7.53	1.01	0.18			
	Autogenic training	30	7.73	0.83	0.15			
	Control	30	6.93	0.87	0.16			
	Total	120	7.50	0.94	0.09			
1 month	Antidepressants	30	6.23	0.97	0.18	1.470	3.116	0.227
	Anxiolytic	30	5.90	1.21	0.22			
	Autogenic training	30	6.37	1.03	0.19			
	Control	30	6.47	1.22	0.22			
	Total	120	6.24	1.12	0.10			
2 months	Antidepressants	30	4.97	1.69	0.31	3.356	3.116	0.021
	Anxiolytic	30	4.57	2.05	0.37			
	Autogenic training	30	5.00	1.70	0.31			
	Control	30	6.00	1.84	0.34			
	Total	120	5.13	1.88	0.17			
4 months	Antidepressants	30	3.00	2.82	0.51	5.593	3.116	0.001
	Anxiolytic	30	2.93	2.80	0.51			
	Autogenic training	30	2.53	2.79	0.51			
	Control	30	5.23	2.92	0.53			
	Total	120	3.43	2.99	0.27			

ous time-related intervals of the treatment for each of the groups. The scale has shown that the group subjected to autogenic training in the period of 4 months experienced a significant decrease in the intensity of the symptoms, which means that the intensity of the symptoms was at the beginning of the therapy rather high (7.5 cm), and during the treatment and at the end of the treatment the intensity dropped to 2.5 cm. The control group showed a certain decrease in the symptom intensity, but this decrease was not as substantial as it was the case with the group which underwent autogenic training. At the beginning of the trial it was 6.9 cm, and after 4 months it dropped to 5.3 cm, which shows that the fall here was less dramatic. The tendency of the decrease in symptom intensity during the treatment was statistically significant ($p < 0.001$).

Salivation quantum measurement is a kind of investigation which measures the quantity of saliva within the oral cavity, which is being given in mL/min. It is divided into four categories: hypersalivation (0.6 mL/min and more), normal salivation (0.4–0.6 mL/min.), oligosialia (0.2–0.4 mL/min) and xerostomia (0.0–0.2 mL/min). Figure 2 shows the mean values of salivation quantum for respective groups and respective time intervals. The patients who were subjected to autogenic training experienced a rise in salivation quantum during their treatment – at the beginning of their treatment their salivation quantum was 0.35 mL/min., and after the four-month treatment it was 0.39 mL/min. Control group didn't experience any significant change: at the beginning of the treatment their salivation quantum was 0.38 mL/min,

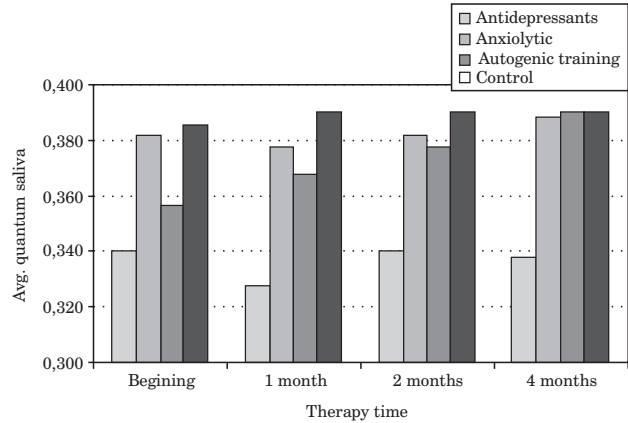


Fig. 2. Average values of saliva quantum among the research groups through various time periods. (N=120).

and after four months 0.39 mL/min. The results obtained in these two groups show a significant statistical difference at all time intervals. Figure 3 shows the change in the salivation quantum measured in different intervals for each of the groups. What was noticed is that the members of the group subjected to autogenic training displayed a mild increase in the salivation quantum, but these changes cannot be taken as statistically significant changes. Changes in the salivation quantum are shown in Figure 4, which presents salivation quantum according to groups, duration of the therapy and the age of the patients. Both groups displayed a mild increase in salivation quantum.

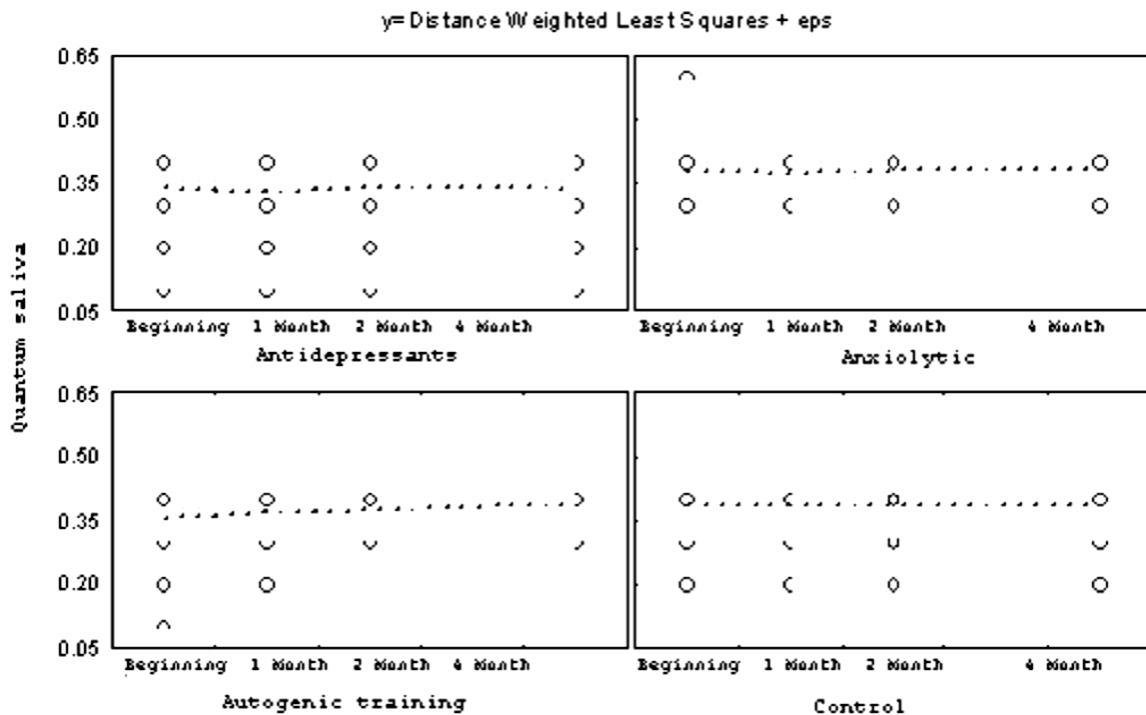


Fig. 3. Change of values of saliva quantum through the periods of time for the research groups (N=120).

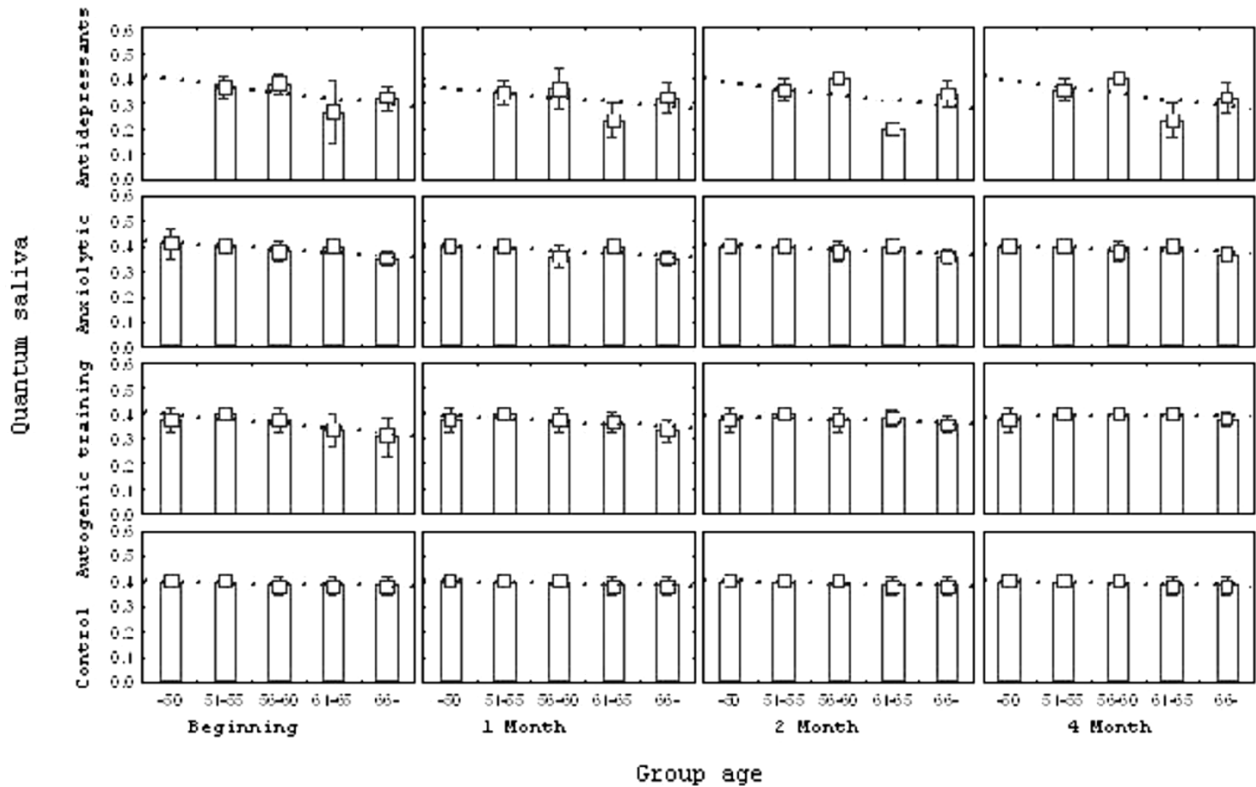


Fig. 4. Change of the average values of saliva quantum according the age factor through the research groups in different time periods (N=120).

Discussion

The aim of this research was to determine the most efficient therapy in the treatment of stomatopyrosis and decreased salivary flow, as it is undoubtedly concluded that etiology of the disease contains a psychogenic disturbance as one of the substantial emotional factors. Visual analogous scale shows the assessment on the side of the very subject, who marks the intensity of the burning sensation as he/she perceives it on the scale ranging from 0–10 cm. The obtained results have shown that subjective assessment of the symptoms is 6.9–7.8, which suggests a rather high intensity of burning sensation. Other authors to use the same methods, like Anneroth and Bergdahl³ for instance, obtained the same mean values in their research.

Gruden¹³ established a high percentage of the symptoms intensity (8 cm). While the patients suffering from stomatopyrosis were treated by means of autogenic training, the intensity of their symptoms dropped; however, the same thing happened to control subjects, which may be interpreted as a placebo effect.

The results of salivary quantum measurement, as an objective state of the quantity of saliva in the oral cavity, shows that at the beginning there was a slight decrease in the quantity of saliva; after the treatment of the causes of the problem, there was a small rise in the salivary flow, even with the control group.

Grushka^{4,6} have established that psychotherapy contributed to the rise in the salivation quantum. Our research clearly showed an improvement in the salivary flow with patients subjected to an autogenic training.

The results obtained by means of univariant methods can be synthesized by means of multivariant methods. Data analysis refers to the research of the structure of the patients monitored (autogenic training and control group) and the investigation of the structure of the vary space of these variables. Variables describing the effects of autogenic training on stomatopyrosis, which were realized on the stated groups of patients, with multiple mutual possibilities of relations make a unique structure, for a researcher latent structure, and all the possible structural differences are to be tested by means of discrimination analysis.

Conclusion

Comorbidity of the incidence of burning sensation in the mouth and a decrease in the salivary flow with the incidence of depressive and anxiety-related conditions has undoubtedly proven, besides other factors, that there is psychogenic etiology of this disease.

Autogenic training – a psychotherapeutic anxiolytic technique is a therapy of choice for burning mouth sensation and decreased salivary flow in the oral cavity,

aiming at the elimination of disturbances within the oral cavity and achieving emotional rehabilitation of the patient.

Decrease in the salivary flow and in the intensity of burning sensation may be taken as a therapeutic breakthrough.

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KVANTUM SALIVACIJE – SOMATOPIROZA – AUTOGENI TRENING

SAŽETAK

Stomatopiroza ili sindrom »gorećih usta«, u užem smislu definicije, je stanje koje karakterizira osjećaj žarenja i pečenja u ustima unatoč normalnoj sluznici. Ovo istraživanje usmjereno je na liječenje stomatopiroze s naglaskom na primjenu psihofarmaka i psihoterapije. Ispitivanje smo provodili na ukupno 120 ispitanika sa simptomima stomatopiroze. Ispitanici su bili podijeljeni u dvije podjednake skupine od po 30 osoba. Svi su ispitanici liječeni lokalnom standardnom terapijom. Svi su bolesnici ispitani klinički i uz pomoć psiholoških testova za depresiju i anksioznost prije početka liječenja a isto ispitivanje se dalje provodilo nakon mjesec dana, dva mjeseca i četvrtog mjeseca liječenja. Podaci su, zatim, statistički obrađeni. Na vizualnoj analognoj skali (VAS skala) subjektivna procjena simptoma iznosi 7–8 cm, što je visoka razinu pečenja. Kvantum salivacije pokazuje, u našem istraživanju, lagano smanjenje količine sline, a nakon liječenja dolazi do normalizacije. Osim kliničkog ispitivanja stomatopiroze primijenjeni su: Upitnik depresije te Upitnik anksioznosti. Na osnovu našega istraživanja zaključujemo: komorbiditet stomatopiroze s anksioznim i depresivnim pojavama dokazuje, uz ostale faktore, i psihogenu etiologiju te bolesti. Daljnja bi istraživanja trebala dati odgovor na pitanje je li kod stomatopiroze riječ o psihosomatskom ili konverzivnom poremećaju. Autogeni trening – psihoterapijska anksiolitička tehnika – jest terapija izbora za stomatopirozu kako u otklanjanju smetnji u ustima tako i u emocionalnoj rehabilitaciji bolesnika te smanjivanje prisutnost suhoće u ustima.