

Comparative Efficacy of Existential in the Treatment of Hyperesthesia and Wedge-Shaped Defect of Teeth

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Abstract: *In recent years, the incidence of diseases of hard dental tissues of a non-carious nature has increased significantly, and this is especially true of the second group of diseases that occur after teething. Authors aimed to evaluate the effectiveness of existential in the therapy of hyperesthesia and wedge-shaped defect of teeth. 68 patients with wedge-shaped defect and hyperesthesia of dental tissue were examined, of them 44 (64.9%) women and 24 (35.1%) men aged between 22 and 78 years old (average 52.1 ± 14.7 years). The recommended method of treating hyperesthesia and wedge-shaped defect of teeth reduces teeth hyperesthesia, removes defects in patients with mild to moderate wedge-shaped teeth, strengthens periodontal tissues due to reparative, anti-inflammatory, analgesic and anti-stress action.*

Keywords: hyperesthesia; wedge-shaped defect; teeth; ecdysteroids; periodontal tissue

1. Introduction

In recent years, the incidence of diseases of hard dental tissues of a non-carious nature has increased significantly, and this is especially true of the second group of diseases that occur after teething. In addition, the combined forms of non-carious lesions of the teeth, i.e. erosions and wedge-shaped defects. According to E.M. Kuzmina (2002); A. Bekele et al., (2003); L.A. Litonjua et al., (2005), the cause of wedge-shaped defects is improper dental care, namely, enhanced tooth cleaning, violation of the tooth-brushing technique (horizontal movements), preferential right-handedness, use of hard toothbrushes and abrasive toothpastes. Litonjua LA et al (2004), studying the effect of horizontal movements on the occurrence of cervical defects, obtained various clinical forms of lesions after 80 hours of cleaning in an experimental machine. In 50% of cases, abrasion in the form of a wedge was experimentally obtained, in 28% - mixed lesions, and in 22% - lesions of a round shape. L.A. Litonjua et al. (2004) believe that occlusive injury does not always play a significant role in the occurrence of cervical lesions, and the theory of abrasive lesions remains controversial, since it is impossible to imagine a complex occlusal function on models. W.G. Young, F. Khan (2002) also does not support abfractional theory, as the main cause of cervical non-carious lesions. According to N.K. Loginova (2003) foci of destruction of teeth in the form of wedge-shaped defects often occur on the side where there is no occlusive load. According to N.V. Frontier (2000) various endocrine diseases occur with wedge-shaped defects in 38.4-52.4% of cases. According to the survey, SM. Makhmudkhanova (1968) in 23.5% of patients with wedge-shaped defects revealed pathology of the gastrointestinal tract. Considering all of the above factors contributing to the occurrence of a wedge-shaped defect, preventive measures are determined by the following measures: A. Fedorov et al. (1997): rational hygiene training (eliminate horizontal movements of the toothbrush, use soft brushes and toothpastes without aggressive abrasives); treatment of background disease of internal organs; normalization of occlusion by orthopedic or orthodontic

treatment; carrying out complex remineralizing therapy. From the above data we can see that in the etiology, pathogenesis, prevention and treatment of erosion of the enamel and wedge-shaped defect there are both similarities and differences. Developed wedge-shaped defects require restorative therapy by T. Kuroe et al, (2000). However, the preservation of fillings in the treatment of wedge-shaped defects in the cervical area of the teeth during the year does not exceed 50% A.I. Nikolaev, L.M. Tsepov, (2003). Various tactical approaches are cited above in the treatment of developed wedge-shaped defects and tooth erosions. However, the comparative effectiveness of these methods and the validity of their choice have not been fully studied.

The purpose of this study is to evaluate the effectiveness of existential in the treatment of hyperesthesia and wedge-shaped defect of teeth.

2. Material and Research Methods

68 patients with wedge-shaped defect and hyperesthesia of dental tissue were examined, of them 44 (64.9%) women and 24 (35.1%) men aged between 22 and 78 years old (average 52.1 ± 14.7 years). The comparison group - 14 healthy individuals, age from 22 to 73 years (average 48.2 ± 13.3 years). The survey included anamnesis collection according to the scheme developed by us, a survey, a clinical examination, a Schiff sample, and an assessment of the quality of life. The study of the quality of life was carried out using the OHIP-14 questionnaire (Oral Health Impact Profile). During the initial survey and examination, all patients complained of tooth hyperesthesia and aesthetic dissatisfaction. The analysis of questionnaires and questionnaires revealed the interdependence between the assessment of the quality of life of patients, the disease and age of patients. Depending on the stage of the disease, the assessment of the quality of life differed. The minimum total number of points in the OHIP-14 questionnaire (18.66 ± 2.42) was found in patients with superficial CD of the teeth. In individuals with a wedge-shaped defect, their depth was

Volume 8 Issue 7, July 2019

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taken into account - the lesion is only within the enamel and the lesion within the enamel and dentin.

Table 1: The prevalence of wedge-shaped defects of different depths in men and women (in absolute values and percentages)

	Women (n=44)	Men (n=24)
Wedge-shaped defects only within the enamel	28 (63,7%)	14 (58,4%)
Wedge-shaped defects only within the dentin	10 (22,7%)	8 (33,3%)
Combined defects	6 (13,6%)	2 (8,3%)
Total:	44	24

Wedge-shaped defects were found on 120 teeth, of which 70 teeth belonged to the upper jaw (41.54% of all teeth with this pathology), and 50 teeth belonged to the lower jaw (58.46%). Analyzing the data, we can conclude that the most often wedge-shaped defects of the teeth were observed in the area of the first premolars of the upper (22.05% of the total number of affected teeth) and the lower (31.28% of the total number of affected teeth) jaw. The second premolar of the upper and lower jaw (10.25% and 17.43% of all affected teeth, respectively) are in second place in terms of the frequency of occurrence of wedge-shaped defects in hard tissue of teeth. The presence of hyperesthesia was judged on the basis of the patient's complaints of pain when brushing the teeth and of temperature irritants, which were clinically confirmed by detecting pain when probing over the surface of the defect and increased sensitivity to temperature stimuli (air stream, cold water). For an objective assessment of the state of sensitivity of hard tooth tissues, we used the teeth hyperesthesia intensity index (IIHP) (Storina GB, 1986). The presence of endocrine pathology in persons with hyperesthesia and wedge-shaped defect of teeth was noted in 64 patients, which was 94%. Considering this fact, ecdysteroids were included in the complex treatment of hyperesthesia and wedge-shaped defect of teeth: Turkesterone isolated from *AjudaTurkestanica* (Zheyuchka Turkestan) Ecdysterone was used to obtain ecdysten, which was used in medical practice as an adaptogenic, hepatoprotective, anti-inflammatory agent. Ecdysteroids have hormone or vitamin-like actions, but they are not true endogenous hormones. They regulate mineral, carbohydrate, lipid and protein metabolism, interacting with phospholipids, easily incorporated into liposomes and highly dispersed emulsions, have an antioxidant effect, inhibit lipid peroxidation, also have anti-stress, adaptogenic and actoprotective activity. The drug was prepared as follows. To 80.0 g of phospholipid-lecithin was added 20 ml of 5% aqueous solution of potassium fluoride and 0.02% ecdysterone dissolved in 1 ml of ethyl alcohol, after which the mixture was thoroughly homogenized. The drug is a white ointment with a slightly yellowish tint of color, no taste and smell. The preparation is applied to the oral cavity on the surface of the teeth that has been thoroughly cleaned of plaque and for adhesion in the surface of the tooth a mouthguard is used. The duration of the procedure is 20-25 minutes. Procedures are carried out once a day for 10 days, recommending patients to refrain from eating food and water for one hour after removing the tray.

3. Research Results

The treatment of hyperesthesia and wedge-shaped defect with the help of herbal remedies was carried out at the Department of Therapeutic Dentistry of the Faculty of Advanced Training of TSDI. 68 patients were treated with hyperesthesia and wedge-shaped defect of the teeth. Clinical case of this method of treatment for hyperesthesia and wedge-shaped defect of teeth:

Example 1. Patient C is 52 years old. Objectively identified: the cervical area a slight loss of hard tooth tissues, the surface is smooth, dense, sensing painful, the reaction to cold irritation is painful: IGR-U=1.9, therefore, the hygiene index is unsatisfactory, IGID=11%, limited hyperesthesia, IIHG = 1 , 6 points, hyperesthesia II degree, AES O-U=28%, mild tooth sensitivity. Diagnosis: hyperesthesia of teeth of the II degree. The treatment was recommended using the above method. At the follow-up visit after the end of the drug treatment course: no complaints, tooth sensitivity is absent from all types of stimuli, AES O-U=19% are healthy, with natural sensitivity to external stimuli. Efficiency SZ=67.8%, high efficacy of the desensitizing action of the drug. 1 month after treatment: no complaints, tooth sensitivity is absent, OAI satellite=19% - healthy teeth, with natural sensitivity to external stimuli. Efficiency SZ=63.6%, high efficiency of desensitizing action of the drug. 6 months after treatment: no complaints, tooth sensitivity is absent, AES=17% - healthy teeth, with natural sensitivity to external stimuli. Efficiency SZ=63.1%, high efficacy of the desensitizing action of the drug.

Example 2. Patient M - 45 years. In history: the abuse of fruit juices and citrus. Objectively: on the vestibular surface an oval-shaped defect within the enamel, when probing the bottom is hard, smooth: IGR-U = 0.8, therefore, the hygiene index is satisfactory, IRPG=7.4%, limited hyperesthesia, IIHP = 1.2 points, hyperesthesia II degree, AES O-U=31%, mild tooth sensitivity. Diagnosis: erosion, hyperesthesia teeth II degree. The treatment was recommended. On a repeat visit (10 days) after the end of the course of drug treatment: no complaints, tooth sensitivity is absent from all types of stimuli, OAI satellite =11% - healthy teeth, with natural sensitivity to external stimuli. Efficiency SZ=74.3%, high efficiency of tooth sensitivity. 1 month after treatment: no complaints, tooth sensitivity is absent, OAI satellite=11% - healthy teeth, with natural sensitivity to external stimuli. Efficiency SZ=74.1%, high efficiency of tooth sensitivity. 6 months after treatment: no complaints, tooth sensitivity is absent, OAI satellite=11% - healthy teeth, with natural sensitivity to external stimuli. Efficiency SZ=71.4%, high efficiency of tooth sensitivity.

4. Conclusion

Our results allow us to conclude that the recommended method of treating hyperesthesia and wedge-shaped defect of teeth reduces teeth hyperesthesia, removes defects in patients with mild to moderate wedge-shaped teeth, and strengthens periodontal tissues due to reparative, anti-inflammatory, analgesic and anti-stress action.

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