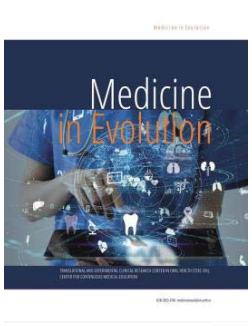
Clinical significance of non-surgical periodontal therapy



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Abstract

The removal of etiological factor such as plaque and tartar is of great importance in order to obtain smooth tooth surfaces free of pathogenic microflora consisting in the removal of all roughness on the tooth surface, especially on cement, which would favour the deposits of bacterial plaque which is the main aetiological factor of the periodontal disease. This paper aims to highlight the importance of scaling and proper oral and dental hygiene for periodontal health. Most patients subject to periodontal treatments require more frequent prophylactic treatments, every three months, instead of the usual six months, because their disease is more likely to reactivate. The working methodology consisted of the analysis of a group of 20 patients with a mean age of 43.7 years, 56% males and 44% females, who were applied a questionnaire consisting of 25 questions, and were then subject to an oral and dental examination, followed by scaling.

Keywords: Prophylaxis, scaling, bacterial plaque

INTRODUCTION

Prophylaxis is the key to the medical profession, it can be performed correctly only by identifying the causes of the disease and then eliminating them. The aetiopathogenetic concept of periodontal disease has oriented periodontal therapy towards methods of diagnosing the disease, treatment possibilities and, more importantly, the need to prevent this chronic condition with irreversible effects over time.

Measures to prevent periodontal disease include daily brushing and flossing to remove plaque from the teeth and gums, regular visits to the dentist for professional prophylaxis, and regular periodontal examination. The dentist should be informed about any history of diabetes and the current condition. Periodontal disease can affect patients with cardiovascular disease due to the harmful bacteria around the teeth. These harmful bacteria and the inflammatory mediators they produce can help clog the blood vessels of the heart and other vital structures. The first stage of treatment for periodontal disease is usually a comprehensive prophylaxis that includes scaling to remove bacterial plaque and tartar deposits formed below the gum line. The roots of the teeth will also be smoothed over the entire exposed surface (planing) to remove bacterial toxins and allow the gum tissue to heal and reconnect to the tooth [1,2].

In addition to prophylactic treatment, scaling is considered the first line of non-surgical periodontal treatment. Scaling also has beneficial effects at an aesthetic level, by removing various extrinsic stains, while providing a feeling of "cleanliness". It is recommended to perform prophylactic scaling at least twice a year (at least 6 months apart). The presence of tartar maintains gum inflammation and aggravates the evolution of periodontal disease.

Beyond the individual predisposition of patients, oral and dental diseases have, for the most part, a microbial aetiology. However, lifestyle plays an important role in the development of caries and pulp diseases, periodontal disease and oral and maxillofacial cancers. It includes the habits of oral and dental hygiene, increasing the resistance of enamel by fluoridation, a diet rich in carbohydrates, alcohol and tobacco consumption and the frequency of visits to the dentist.

The removal of etiological factors such as plaque and tartar is of great importance in order to obtain smooth tooth surfaces free of pathogenic microflora consisting in the removal of all roughness on the tooth surface, especially on cement, which would favour the deposits of bacterial plaque which is the main aetiological factor of the periodontal disease.

Recent research indicates that cement exposed to the action of plaque, tartar and periodontal pockets infiltrates with endotoxins, maintaining a source of continuous gum irritation. Scaling in general or the one with abrasive air reduces the toxic products in the cement and delays the deposition of the soft plaque, implicitly of tartar. Prophylactic and curative treatment of acute and chronic diseases consists in performing scaling that ensures the healing of the marginal periodontium and the oral mucosa (gingivitis, periodontitis, gum stomatitis), which also takes place in order to prepare an operating field that allows performing dental procedures under proper conditions by the antimicrobial effect of destroying bacterial cell walls with a mix of water, air, powder (baking soda, glycine) and pressure (biokinetic energy), thus reducing the amount of endotoxins present in periodontal pockets.

Measures of primary or secondary prophylaxis of periodontal disease, correlated with the methods of oral hygiene education, contribute to the promotion, maintenance and restoration of periodontal health. In conclusion, we must pay great attention to scaling, not postpone or neglect it, because along with brushing techniques and regular visits to the dentist, it is one of the elements absolutely necessary for a proper oral hygiene.

Aim and objectives

This paper aims to highlight the importance of scaling and proper oral and dental hygiene for periodontal health. Most patients subject to periodontal treatments require more frequent prophylactic treatments, every three months, instead of the usual six months, because their disease is more likely to reactivate.

MATERIAL AND METHODS

The working methodology consisted of the analysis of a group of 20 patients with a mean age of 43.7 years, 56% males and 44% females, who were applied a questionnaire consisting of 25 questions, and were then subject to an oral and dental examination, followed by scaling. The instrumentation used consists of: forceps, mirror, dental probe, periodontal probe, ultrasonic scaler, scaling insert with abrasive air for the portion above the gum (Air Flow), insert for the portion below the gum (Perio Flow), set of Gracey curettes.

During the personal research we recorded the data gathered in individual charts, which helped to obtain statistical evaluations meant to provide an overview of the oral health of the adult population that were presented in March at a general Dental Practice in Timisoara.

RESULTS

The study conducted shows that the reasons for presentation were different, 15 of the patients studied went to the dental practice because of the pain, followed at a considerable distance by those with gum bleeding, followed by those with masticatory and physiological disorders. (Fig. 1).

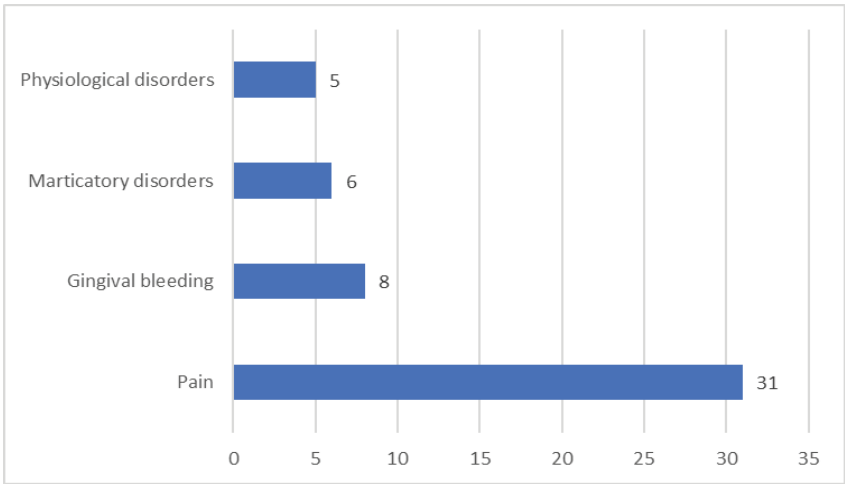

Figure 1. Reasons for going to the dentist

According to the study, among the symptoms existing in the personal history, 11 of the persons participating in the study had as a symptom a discomfort when brushing, followed at a considerable distance by those with food debris between the teeth and then those with gingivitis, followed by those with mobile teeth.

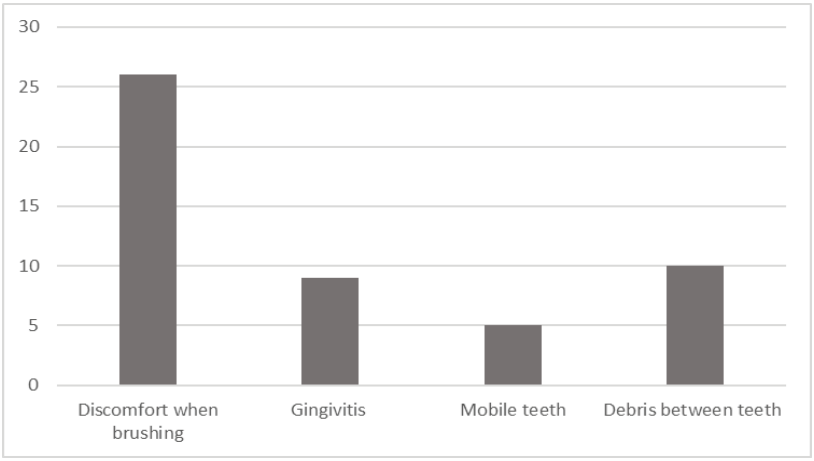

Figure 2. Symptoms in personal history

We notice in Figure 3 above that the most frequent vicious habits are the use of toothpicks followed by the habit of interposing objects between the teeth and, at a considerable distance, teeth grinding and clenching.

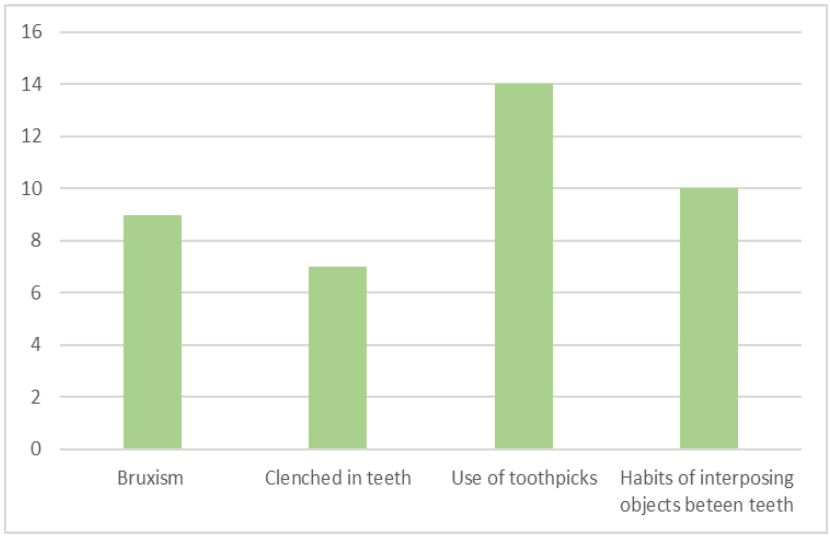

Figure 3. Vicious habits present in the people included in the study

The frequency of brushing teeth is not one that indicates a proper oral hygiene, most people usually wash only once a day, followed by those who wash twice a day. The number of people who do not use to brush their teeth at least once a day is worryingly high. Of those who brush only once a day, most brush their teeth after waking up, followed by those who brush their teeth after lunch.

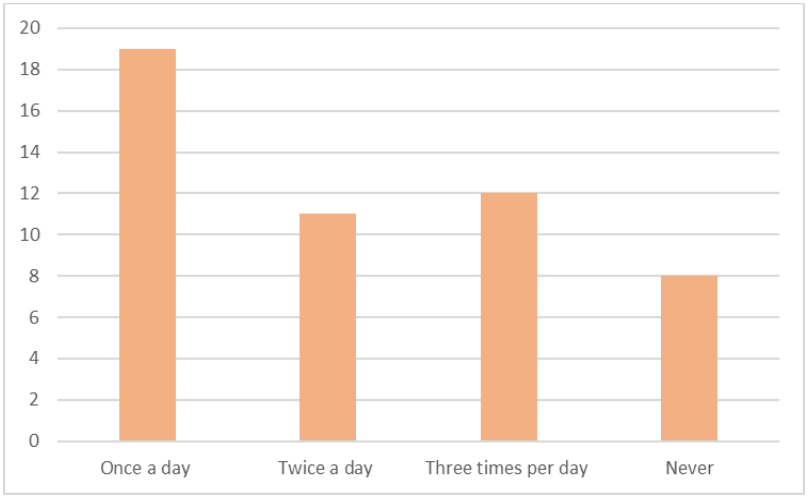

Figure 4. Frequency of tooth brushing

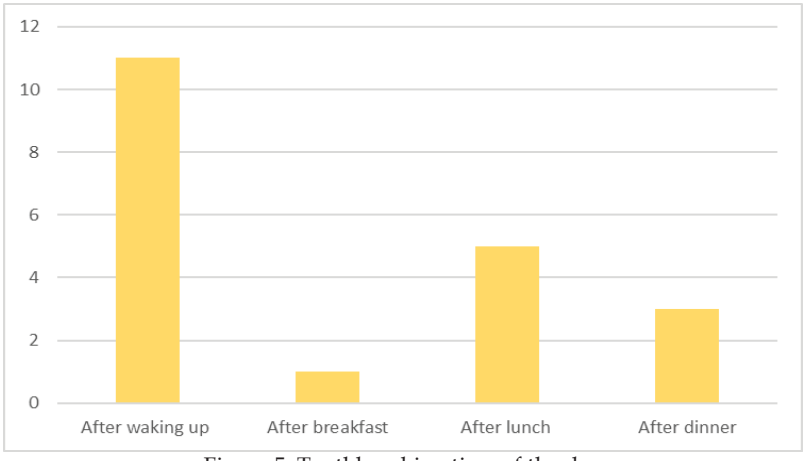

Figure 5. Toothbrushing time of the day

The average time spent brushing is 1.10, with most of them spending one minute to do this, and only 5 people say they spend 3 minutes for each brushing. 64% of the adults studied use the horizontal brushing direction, followed by those who wash correctly, using the vertical technique: 22%, and 14% wash their teeth with circular moves.

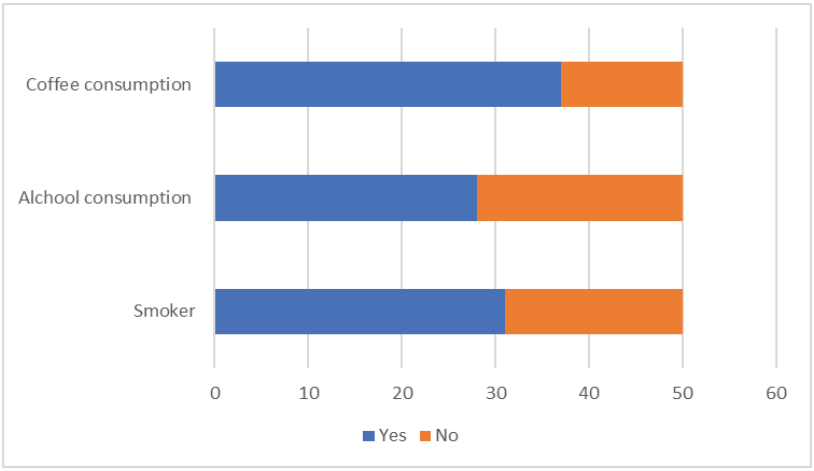

Figure 6. Coffe/alcohol/ cigarettes consumption of the study group

Coffee consumption is the most common addiction in the study group, followed by smokers and then alcohol consumption. Very often there is a combination of the three addictions, or between coffee consumers and smokers.

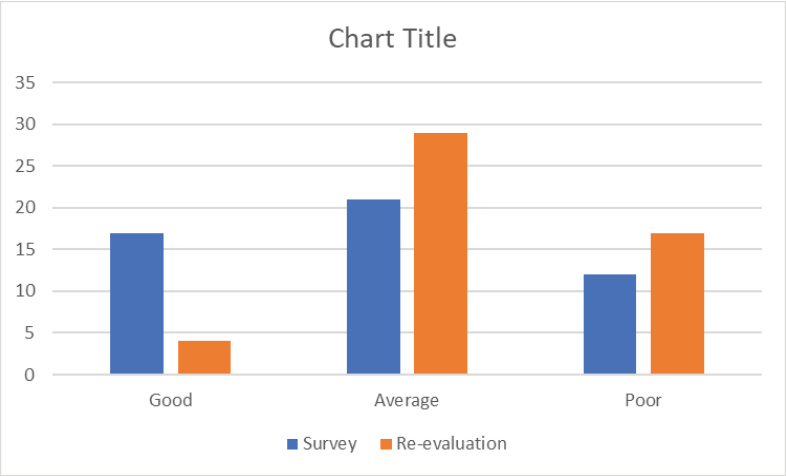

Figure 7. State of oral and dental health of interviewees compared to the results of the oral and dental assessment performed

Most of the interviewees stated that they had an average state of health, followed by those who stated that they had a good state of health, but the examination revealed an average state of oral and dental health, followed by those with poor health and fewer in good health. 64% of those studied never had a professional scaling or brushing in their personal history. The examination revealed that 40% of those examined had periodontal disease.

The use of the abrasive air scaler in the treatment of periodontal disease has provoked many contradictory discussions. The abrasive air scaling treatment is intended to be independent, although at present it is considered only complementary to the conventional scaling and root planning. Studies show very good results in removing plaque from the pockets with a decrease in depth of up to 1.22 mm in 4-6 weeks, although at the microbiological level it is inferior to conventional SRP.

In patients subject to scaling with abrasive air, seven of them had plaque gingivitis, at the re-evaluation (after 2 weeks) five of them had good oral hygiene, normal gum colouration, disappearance of gum oedema, firm consistency of the gums and the absence of tartar, and the other two had failed to apply a proper brushing technique, so their gum inflammation persisted.

We also had satisfactory results in patients who already had periodontal disease when they came to our clinic and who, after three weeks, the ten of them no longer had gum oedema, had moderate periodontal pockets, no bleeding during the examination and satisfactory oral hygiene. Of course, there were also patients who needed corrective therapy and I referred them to a specialist.

Periodontal disease prophylaxis with abrasive air scaling can be achieved very easily, with very good results. It removes plaque completely below and under the gums, delays its deposition due to its moderate abrasive effect, and removes roughness from the tooth surface.

It removes extrinsic staining very easily; in a short time, the aesthetic effect is clearly superior to that given by ultrasonic scaling, and patients are very satisfied with this aspect, but also with how smooth the teeth are and the freshness they feel after scaling.

CONCLUSIONS

Scaling with abrasive air in patients with periodontal disease has many clear advantages over conventional methods, reducing the degree of periodontitis and even

leading to the healing of early periodontal disease if combined with toothpaste and mouthwash specially created for it. Here are some of the many advantages that scaling brings in dental and periodontal health: special aesthetic effect, reduces or eliminates tartar and bacterial plaque, leaving the place clean; allows access to the proximal areas, depressions, grooves, cracks, periodontal pockets much easier, is very useful in identifying cavities; it is not an unpleasant procedure for patients, baking soda is biocompatible; the device is portable and very easy to use. Scaling is ideal for the prevention of periodontal disease, but in its treatment, it has been proven that at a microbiological level conventional SRP is the treatment of choice, and scaling is complementary.

Our study showed that most of the persons involved had a poor dental hygiene, brushed once a day (9 people), there were also 11 people who brushed their teeth twice a day and twelve who brushed three times a day. The vast majority brushed their teeth after waking up, and only for after lunch. The presence at the doctor is not for aesthetic reasons, most patients with periodontal disease are smokers and/or have an alcohol addiction and do not care of their physical appearance, so that 15 of the people studied came to our dental clinic due to the pain, followed at a considerable distance by those with gum bleeding, which were 5. The disease risk, i.e. the probability of it happening at a given moment in time, must be taken into account, so that these lesions in the tooth and periodontium would not occur. Periodontal prophylaxis and oral health in general play a particularly important role in preventing caries and periodontal disease, while the periodic dental exam and scaling are particularly useful.

REFERENCES

1. Bică Adelaida, Igiena orală pe înţelesul copiilor, Editura Scriptum, Bucureşti, 2017
2. Cara M., Ching M.: Elemente clinice de stomatologie, Editura All Educaţional, Bucureşti, 2001
3. David A. Mitchell, Laura Mitchell „Ghid clinic de stomatologie" Editura Bic All, Bucuresti, 1999
4. Doina Onisei, Angela Codruţa Podariu, Dan Onisei, Daniela Jumanca, Atena Găluşcan, Parodontologie (vol. II - Curs pentru colegiul de profilaxie), Editura Lito UMFT, Timişoara, 2000
5. Dumitrache Mihaela Adina, Sfeatcu Ionela Ruxandra, Buzea Corina Mona, Dumitraşcu Loredana Cristina, Lambescu Dan Gabriel, Concepte şi tendinţe în sănătatea orală, Editura Carol Davila, Bucureşti, 2009
6. Dumitriu Horia Traian, Tratat de parodontologie, Editura Viaţa Medicală Românească, Bucureşti, 2015
7. Jumanca D., Podariu A. C., Găluşcan A., Oancea R., Popovici R. A., Roşianu R. S., Roşu A.: Prevenţia oro-dentară, Editura Marineasa, Timişoara, 2010
8. Jumanca D., Podariu A. C., Găluşcan A., Văcaru R., Muntean R. A.: Prevenţie oro - dentară, manual de lucrări practice, Lito U.M.F.T., 2003
9. Jumanca D., Podariu A. C., Muntean R. A., Găluşcan A., Oancea R., Roşu A., Roşianu R. S.: Medicină dentară comunitară (Curs pentru studenţii facultăţii de medicină dentară), Editura Marineasa, Timişoara, 2010
10. Locker D., lokovic A.: Threeyear changes in self-perceived Oral Health Status in an Older Canadian Population. J. Dent Res, 1997
11. Magnusson I.: Examination of pattiens with periodontal diseases. Current concepts in Wilson, Kornman, Newman: Advances in Periodontics, Quintess Books, Chicago 1995
12. Onisei D., Onisei D., Stratul St.: Aspecte ale terapiei inițiale în gingivita de placă, Cercetari experimentale medico – chirurgicale, nr. 3/1997
13. Palmer R.M., Floyd P.D.: A clinical guide to periodontology, BDJ Books 1996
14. Pătru F., Apostolescu S.: Asistenţa şi învăţământul de medicină dentară din trecut până în prezent, Editura Junimea, Iaşi, 2006
15. Podariu A. C., Jumanca D., Găluşcan A., Văcaru R., Muntean R. A.: Tratat de prevenţie oro-dentară, Editura Waldpress, Timişoara, 2003

16. Podariu A. C., Jumanca D., Găluşcan A., Văcaru R., Muntean R.: „ Stomatologie comunitară" Editura Waldpress, Timisoara, 2002
17. Podariu A. C., Onisei D., Jumanca D., Găluşcan. A, Onisei D.: Curs pentru colegiul de profilaxie: Stomatologie Preventivă, Vol.I, Lito U.M.F.T., 2000
18. Popovici R. A., Podariu A. C., Ciobanu V.: Sănătate publică orală, Editura Mirton, Timişoara, 2014
19. Popovici R. A.: Conexiunea Educaţie- Comunicare în managementul activităţilor de promovare a sănătăţii orale, Editura Nagard, Lugoj, 2009
20. Popovici R.A., Podariu A. C., Jumanca D., Găluşcan A., Oancea R., Roşianu R.S.: Educaţia pentru sănătate oro-dentară. Managementul proiectelor educaţionale, Editura Mirton, Timişoara, 2007
21. Radulian Gabriela, Nutriţie şi sănătate dentară, Editura Carol Davila, Bucureşti, 2019
22. Smaranda Rodica Goţia, Sistemul oro-facial – Noţiuni de fiziologie, Ediţia a III-a, Editura Mirton, Timişoara, 2004
23. Theodore H., Tulchinsky E. A., Varavikova: Noua Sănătate Publică. Introducere în secolul XXI, Editura Ulysse, Chişinău, 2003