ORAL HYGIENE HABITS IN A GROUP OF 44 ROMANIAN PATIENTS WITH DENTAL IMPLANT PROSTHETICS

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Abstract:
Aims: The present article presents study which has as the main objective the evaluation of 44 romanian patients' habits regarding the maintenance of dental implant prosthetics.
Methods: The study represents a statistical analysis of the answers to a questionnaire applied to a group of 44 patients with dental implant prosthetics. The questionnaire has 29 questions regarding the patients’ perception about dental implants treatment, the maintenance of dental implant prosthetics and the patients’ evaluation of dental implant prosthetics. This article presents the analysis of the 9 questions regarding the patients’ maintenance of dental implant prosthetics.
Results: Most of the patients possess certain knowledge about the maintenance of dental implant prosthetics. However, less than half of the patients (42.8%) are aware that for a correct maintenance it is necessary to combine regular brushing with auxiliary cleaning methods, chemical antiplaque agents and regular consultation in the dental office. Quite a few patients use soft tooth brushes, oral irrigators or gum stimulators.
Conclusions: The knowledge about the maintenance of dental implant prosthetics in the group of patients taken in the study is insufficient as is the application of these knowledge.

Key words: dental implant prosthetics, oral hygiene, questionnaire.

INTRODUCTION
Behavior has a broad and central role in health. Behavioral interventions can be effectively used to prevent disease, improve management of existing disease, increase quality of life, and reduce healthcare costs [1]. The quality of life of a human being is determined among other things by health. Oral health is part of general health. If a person has a poor oral health this may become a handicap [2]. Alongside with aging, a human often gradually loses dental units for various reasons. One of the possibilities to replace the lost dental units is the use of dental implant prosthetics. The use of dental implants brings a number of benefits: the replacement of lost teeth without affecting adjacent teeth, the possibility to make prosthetics on terminal edentulous patients, superior stability for mobile prosthetics etc. [3]. Dental implants and dental implant prosthetics are artificial structures that have an intimate contact with living tissues. This is why the materials we use must have a high biocompatibility [4]. No matter how high this biocompatibility is, the interface implant – living tissue and prosthetics – living tissue is always sensitive to microbial aggression [5]. Therefore the oral hygiene of a patient with dental implant prosthetics must always be extremely efficient [6]. Dental implants have only
recently been used on a larger scale in romanian population because of the costs of the treatement. Therefore we considered that it could be useful to find out how do the romanian patients maintain their implant prosthetics.

AIMS

The present article presents a pilot study which has as the main objective the evaluation of romanian patients’ habits regarding the maintenance of dental implant prosthetics. We tried to find out how much the patients know about the cleaning their dental implant prosthetics and how much do they apply their knowledge. We also wanted to determine how often these patients present to their dental office for dispensarization.

MATERIALS AND METHODS

We made a statistical analisis of a questionnaire applied to a number of 44 patients with dental implant prosthetics. The questionnaire had 29 questions but this study only deals with 9 questions regarding the maintenance of dental implant prosthetics. The selection criteria for the patients were:

1. To have at least one dental implant prosthetic construction.
2. To have a good periodontal status for the remaining teeth:
   a. Periodontal healthy or
   b. Treated and stabilized periodontitis.
4. To smoke no more than 10 cigarettes a day [7], [8].
5. The patients had to agree to take part in the study.

All patients signed the questionnaire after completing it and being informed that they have completed it in order to take part in a scientific study. Since it was a observational (non-interventional) study we took this signature as the informed consent of the patients’ taking part in the study.

The patients were selected from 2 dental offices from Bucharest and from 3 offices from Ramnicu Valcea. The patients are all more than 20 years old. The distribution on different age groups is as it follows: 8 patients in the group 21-30 years, 7 patients in the group 31-40 years, 11 patients in the group 41-50 years, 11 patients in the group 51-60 years and 7 patients in the group over 61 years. The main age was 46. There were 17 males and 27 females subjects, 9 from non-urban areas and 35 from urban ones. 10 patients are high school graduates and 34 have higher education (university). The patients filled the questionnaires alone in a room of a dental office. A person who applied the questionnaire was present in that rom only if the patient specifically requested it. The questionnaire was constructed with the help of specialists in sociology and biostatistics in order to be sure that the questions and answers are statistically relevant [9], [10]. It had 29 questions divided in 3 main sections: the patients’ perception about dental implants treatement, the maintenance of dental implant prosthetics and the patients’ evaluation of dental implant prosthetics. In the present study we analized the 9 questions that refere to dental implant prosthetics maintenance. 4 of these questions allowed the patient to choose
only one answer while the other 5 allowed one or more answers.

This group of 9 questions includes 2 categories of questions:

- Demographic questions, asking the respondents about age, gender, occupation, and education. The main purpose of those questions is to get a perspective on the variety of patients that have dental implants and we also want to be able to weight the results. The analysis of the demographical questions permits a classification of the subjects on age and sex groups using summary statistics.
- Specific questions, asking the respondents about the relevant aspects regarding the maintenance of dental implant prosthetics. An analysis based on answers to the 9 questions was performed using the classification of categorical and quantitative data and groups of responses were provided.

The categorical (nominal) data are sorted into categories according to specified characteristics. The information provided by these answers is either counted or expressed as percents. The ordinal data that we use are ordered and ranked according to some relationship to one another. Averages inside each type of answer are also provided. The data were introduced and analyzed in the Pivot table from Excel which is a tool for distilling a complex set of data into meaningful information: PivotTables. These ones were used to create custom summaries and charts of key information of the data.

Here are the 9 questions:

1. Which are the means for a correct maintenance of your dental implant prosthetics? [11]
   (You may choose as many answers as you wish)
   a. They don’t require a hygienisation
   b. 1 brush daily
   c. 2 brushes daily
   d. 3 brushes daily
   e. The use of auxiliary mechanical cleaning methods (dental floss, interdental brushes etc.)
   f. The use of chemical antiplaque agents
   g. Regular consultation and hygienisation in the dental office
   h. I don’t know

2. What kind of dental brush do you use?
   a. Soft
   b. Medium
   c. Hard
   d. Electric
   e. I don’t know

3. Do you use auxiliary mechanical cleaning methods? (You may choose as many answers as you wish)
   a. Dental floss
   b. Super-floss
c. Interdental brushes  
d. Gum stimulators  
e. Oral irrigator  
f. Chewing gum  
g. I don’t use such cleaning methods  

4. Do you use chemical antiplaque agents?  
a. Mouth water  
What chemical agents does it have? _________________________  
b. Gel  
What chemical agents does it have? _________________________  
c. I don’t  

5. Were you taught to use a dental plaque revelator in order to verify your dental hygiene?  
a. Yes  
b. No  
c. I know nothing about this topic  

6. How often do you present for regular consultation and hygienisation in the dental office?  
a. 3 months  
b. 6 months  
c. 1 year  
d. Seldom  
e. Only when I believe that I have dental or implant problems  

7. How often do you do Xrays in order to check your dental implants?  
a. 6 months  
b. 1 year  
c. 2 years  
d. More than 2 years  
e. When the dentist requests Xrays  
f. Never  

8. You received information about the hygienisation of dental implant prosthetics from:  
a. The dentist who inserted your implants  
b. The dentist who made your dental implant prosthetics  
c. I did not receive such information  

9. Which are your information sources that you use for the maintenance of your dental implant prosthetics?  
a. The dentist  
b. Other doctors  
c. Other individuals (not doctors)  
d. Internet  
e. Massmedia  
f. Other sources: ___________________________________________
RESULTS
The analysis of the studied group revealed that the maximum number of patients (11) was for two of the age groups: 41-50 years and 51-60 years, most of them were women (27F compared to 17M), those with higher education (34 compared to those with secondary 10), and coming from urban areas (35 compared to rural 9).

We present in the following figures the answers of the subjects to the questions presented above. The numbers of the figures correspond to the numbers of the questions presented above in the section „Materials and Methods”.

![Diagram](image-url)
2. What kind of dental brush do you use?

3. Do you use auxiliary mechanical cleaning methods?
4. Do you use chemical antiplaque agents?

5. Were you taught to use a dental plaque revealer in order to verify your dental hygiene?
6. How often do you present for regular consultation and hygienisation in the dental office?

7. How often do you do x-rays in order to check your dental implants?
8. You received information about the hygiene of dental implant prosthetics form:

   - 18.26% (a)
   - 27.81% (a, b)
   - 55.81% (b)

9. Which are your information sources that you use for the maintenance of your dental implant prosthetics?
DISCUSSIONS

This is one of the first studies made in Romania on the maintenance habits of patients with dental implant prosthetics. Its purpose was to provide a simple assessment of how a number of Romanian patients with dental implants manage to maintain a good oral hygiene. Therefore a simple methodology was used and other oral diseases such as caries and lesions of oral mucosa were not specifically assessed. It can be criticised for a number of reasons, including the lack of a random sample and rather simplistic criteria for including patients in the study. However, the resulting data have provided an overview of oral hygienization for Romanian patients treated with implants in the capital city and a smaller city in Romania. The results help us construct a brief image regarding the patients’ knowledge and habits. The authors consider that the questions and answers of the questionnaire cover most of the aspects related to the maintenance of dental implant prosthetics.

Most of the patients proved that they possess a certain level of knowledge regarding the maintenance of dental implant prosthetics. However less than half of the patients are aware that for a correct maintenance it is necessary to combine regular brushing with auxiliary cleaning methods, chemical antiplaque agents and regular consultation in the dental office.

Regarding dental brushing, only 8 patients (18.18%) use a soft toothbrush and only 2 use an electric toothbrush. The rest of the subjects use medium toothbrushes which made us consider either a wrong brushing technique with high risk for acute or chronic gingival trauma or a lack of proper education of the patients by medical personnel. A personal observation of the first author of this article is that many patients (not necessarily from the presented group) complain that they can’t always find soft toothbrushes on the Romanian market.

Most of the patients (86.36%) use at least one auxiliary mechanical cleaning method for the hygiene of dental implant prosthetics. Dental floss is the most used (27 patients). Only 3 of the questioned subjects use an oral irrigator, none uses a gum stimulator and only 4 patients use super-floss.

30 patients (68.18%) say that they use to rinse with a mouthwash but only 8 of them can specify the active ingredients in their mouthwash and 4 more can name the commercial brand of theirs. 31.81% don’t use to rinse with any mouthwash and 40.09% say that they do, but can’t name the active ingredients or the commercial brand of the mouthwash. In this case there is a correlation of the subjects’ habits with their answers at the first question but there is an obvious lack of interest regarding a chemical agent which regularly comes in contact with the patient’s living tissue. It is most unfortunate that the patients aren’t educated and motivated to use antimicrobial gels.

The regular testing of plaque level is quite important for anyone with dental implant prosthetics. Only 4 patients (9.3%) say that they were advised to use plaque disclosing agents. The authors consider that this is an error of Romanian dentists
who, for various reasons, don’t recommend such procedures at home.

Regarding the professional routine visit at the dental office 63.63% of the subjects say that they visit their dentist at least once a year. The rest come to the office scarcely and only when they consider that they have a dental problem, proving a lack of interest about oral prevention and the maintenance of their dental implant prosthetics.

76.74% confirm that they undergo an X-ray examination only if their dentist requires an X-ray, which we consider a positive fact because this exam must not be done unless a specialist believes that it is necessary.

All of the patients say that the medical personnel gave them information about the maintenance of dental implant prosthetics. This is a good thing because the dentists and the oral hygienists should be the main information sources for the patient. The authors consider that the medical personnel should be aware that they have the main responsibility for the information and education of the patient for a healthy lifestyle because medics are seen by most of the people as the most reliable information source.

43 patients answered at the 9th question that they use to ask the medical personnel for information regarding oral health. The second main source of information is the internet (11 patients). The other information sources are scarcely used by patients. In this case we consider that the patient should be warned by the dentist that it is best to ask a specialist before using products or techniques learned from the internet.

We believe that in order to improve the data interpretation it could be useful to assign a score to each answer and to calculate a total score for every patient. We also believe that we should construct a scale of values based on which we should interpret the total score for each patient in order to evaluate as efficiently as possible the maintenance of dental implant prosthetics.

Our results show that patients require a better information and education by the medical personnel because their knowledge and habits are not sufficient for a good long-term maintenance of dental implants.

The limited number of subjects and the collected data are not sufficient to have a comprehensive image for the Romanian patients with dental implants and it could be useful to modify the data interpretation and enlarge the subjects number. However, the resulting data have provided an overview of oral hygiene for patients treated with implants in the capital city and a smaller city in Romania.

CONCLUSIONS

The group of patients taken in the study cannot be considered representative for all Romanian patients with dental implants. However, it covered all adult age groups, the main implant prosthesis techniques, both genders, and two different locations in Romania. Therefore, the results should be taken into consideration.

The knowledge about the maintenance of dental implant prosthetics in the group of Romanian patients is insufficient. The same conclusion can be
drawn regarding the application of these knowlege.

The romanian dentists should be encouraged to provide regularly dental examinations and oral hygiene advice for all patients who present dental implant prosthetics. There is an obvious necessity to develop programmes aimed at improving oral hygiene and implant maintenance for the patients with implant prosthetics.

REFERENCES