ORAL HEALTH RELATED QUALITY OF LIFE BEFORE AND AFTER CONSERVATIVE PERIODONTAL THERAPY

Gabriela Beresescu, Assist. Prof., PhD, Adriana Monea, Assist. Prof., PhD, Monica Monea, Assist. Prof., PhD, Ciprian Dalai, PhD Student – University of Medicine and Pharmacy, Tîrgu Mureș, Cioban Tiberiu, PhD Student –"Babeș-Bolyai" University of Cluj-Napoca

Abstract: The World Health Organization (WHO, 1993) defines the quality of life as „an individual's perception of their position in life in the context of the culture and value systems in which they live and in relation to their goals, expectations, standards and concerns". Periodontitis is an infectious disease which, left untreated, results in progressive attachment and bone loss and ultimately leads to dental loss. It seriously affects various aspects of the quality of life in many individuals.

The purpose of this study is to assess the oral health related quality of life before and after conservative periodontal therapy. The periodontal status was recorded at baseline and after scaling and root planning. Clinical examination for periodontal status and personal interviews for oral health related to the quality of life were conducted. The results showed poor scores for oral health related to the quality of life in the control group compared with the test group. Females perceived the quality of life related to oral health in a higher degree as compared to males. There was no significant difference between the gender for functional limitations and social well-being. In conclusion, conservative periodontal therapy may lead to substantially higher gains in periodontal status, and it also greatly improves the quality of the life in patients.

Keywords: periodontitis, oral health related to the quality of life, conservative therapy, scaling and root planning

Introduction

Periodontal diseases represent de most frequent conditions of the human body, affecting it irrespective of sex, age or geographical area. Periodontal diseases are induced by determinant factors such as microbes associated with local factors (scale, caries, edentations, dental-maxillary abnormalities, parafunctions, smoking, iatrogenics, etc) and general factors (diabetis, cardiovascular, haematological and hepatical conditions, immune dysfunctions, nutrition deficiencies, endocrine dysfunctions, nervous system related diseases).

Periodontitis is an infectious disease which, left untreated, results in progressive attachment and bone loss and ultimately leads to dental loss. Periodontitis seriously affects various aspects of the quality of life in many individuals. The conservative periodontal therapy can lead to predictable pocket reduction and stop further disease progression. However, the therapy is usually associated with an increase in soft tissue recession and bone loss. Conventional periodontal treatments such as scaling and root planning are generally followed by periodontal repair, thus implying healing without restoration of the tooth attachment apparatus, and are often associated with the formation of a long junctional epithelium.

The World Health Organization (WHO, 1993) defines the quality of life as „an individual's perception of their position in life in the context of the culture and value systems in which they live and in relation to their goals, expectations, standards and concerns". The patient's perception regarding the quality of life in relation to oral health is an important

aspect for the success of the treatment. So, that periodontal therapy was suggested to have a positive impact on the quality of life(QoL). Up to this moment data regarding the effect of periodontal therapy on QoL are limited.

The purpose of this study is to assess the oral health related quality of life (OHRQL) before and after conservative periodontal therapy.

Materials and Methods

This prospective study enrolled patients who visited the Department of Odontology and Periodontology of the Faculty of Dentistry in Targu Mures. The study was conducted over 8-months, from January 2014 to August 2014.

Subjects

180 patients, 112 females and 68 males, aged between 25-60 were randomly distributed in two groups (test group and control group) according to the following inclusion criteria: diagnosed with moderate periodontitis, a minimum of four sites with probing depth $\geq$ 4 mm (PD), presence of $\geq$ 16 gradable teeth, no systematic periodontitis treatment within the last 12 months, smoking $\leq$ 10 cigarettes/day, good general condition. Subjects were excluded from both groups (test and control) on the following criteria: need for periodontal surgery during the study, intake of medication known to affect periodontal status, pregnancy, and other chronical diseases.

Clinical examinations

Informed consent was obtained from all subjects. Clinical examinations for periodontal status and personal interviews for perception of the oral health related quality of life were conducted at baseline and four weeks after therapy. The periodontal status was recorded of the Ramfjord teeth, which include the maxillary right first molar, the maxillary left central incisor, the maxillary left first premolar, the mandibular left first molar, the mandibular right central incisor, and the mandibular right first premolar. The following parameters were assessed: bleeding on probing by using a probe, probing depths (PD), and clinical attachment level (CAL). The presence or absence of plaque was evaluated with plaque index (O'Leary et al.1972). Gingival inflammation was assessed by the gingival index (Loe and Silness, 1963).

The test group received a conservative periodontal therapy consisting of oral hygiene instructions, scaling and root planning by using hand and ultrasonic instruments. The control group received no treatment. After four weeks, a reevaluation was carried-on, and the patients from both groups responded to the second survey.

Instruments

The questionnaire is a descriptive instrument specifically designed to evaluate the psychosocial impact of oral conditions and diseases. Using the OHRQL instrument the following factors were assessed: functional limitation, physical pain, psychological discomfort, psychical disability, psychological disability, social disability and handicap. The OHRQL model was used. Responses were recorded by using a five-point scale: 0,never; 1,hardly ever; 2, occasionally; 3,fairly often; 4,very often.

Statistical analysis

The Statistical Package for Social Sciences (SPSS) was used for data processing and statistical analysis. The Mann-Whitney U test was used to analyze the difference between groups. The Wilcoxon test was used to analyze the differences between baseline and after 8 months for periodontal status and OHRQL scores.

Results

All the patients completed de OHRQL questionnaire before and after the conservative periodontal therapy. Table 1 shown the mean scores on the OHRQL domains at baseline. Females experienced better oral health quality of life than males. There were statistically significant differences in patient scores between each domain (p<0.0001). OHRQL scores for pain, eating and chewing function were relatively high. There was no significant difference between the gender for functional limitations and social well-being. No significant corelation was observed with the baseline periodontal parameter.

Table 1. OHRQL scores at baseline

OHRQL Domains	Test group (n=95)	Controlgroup (n=85)	p
Pain	1.15	0.40	0.0049
Dry mounth	0.61	0.39	0.0289
Eating and chewing function	1.68	0.27	<0.0001
Speech function	0.67	0.15	0.0010
Social function	0.68	0.10	<0.0001
Psychologic function	1.28	0.35	<0.0001
Health status	1.09	0.72	0.0007

Table 2. OHQRL OHRQL scores at baseline and after 8 months

QHRQL domanins	Baseline	After 8 months	Significantly different* (p)
Pain	1.15	0.68	0.0009*
Dry mounth	0.61	0.49	0.0039*
Eating and chewing function	1.68	1.32	<0.0001*
Speech function	0.67	0.67	>0.9999
Social function	0.68	0.43	0.0214*
Psychologic function	1.28	0.95	0.0012*
Health status	1.09	0.88	0.2899

The periodontal therapy resulted in a significant improvement in all periodontal parameneters measured (Table3). The greatest improvement was observed in pain, followed by eating and chewing. The psychologic domain showed at least a moderate improvement. Compared with baseline, a significantly higher proportion of patients reported rarely or never having problems with pain, eating and chewing after treatment.

Table 3. Periodontal Parameters at baseline and after 8 months

Periodontal Parameters	Baseline	After 8-months	Significantly different (p)

PD (mm)	3.11	2.65	<0.0001*
CAL (mm)	3.57	2.98	<0.0001*
PD ≥ 4mm (%)	28.33	14.02	<0.0001*
FMBS (%)	25.88	15.03	<0.0001*

The patients had a poor initial outlook on their oral health, with 58% rating their overell oral health as poor compared to others of the same age (Figure 1). Only 9% of the patients perceived their oral health as good. 12% of patients indicated that general health was not a major concern.

Discussion

This is the first study which analyses the patient's perception regarding the oral health related quality of life before and after conservative periodontal therapy ever to take place in Romania. The results are in accordance with international studies that show that periodontal diseases have a negative impact on the quality of life.
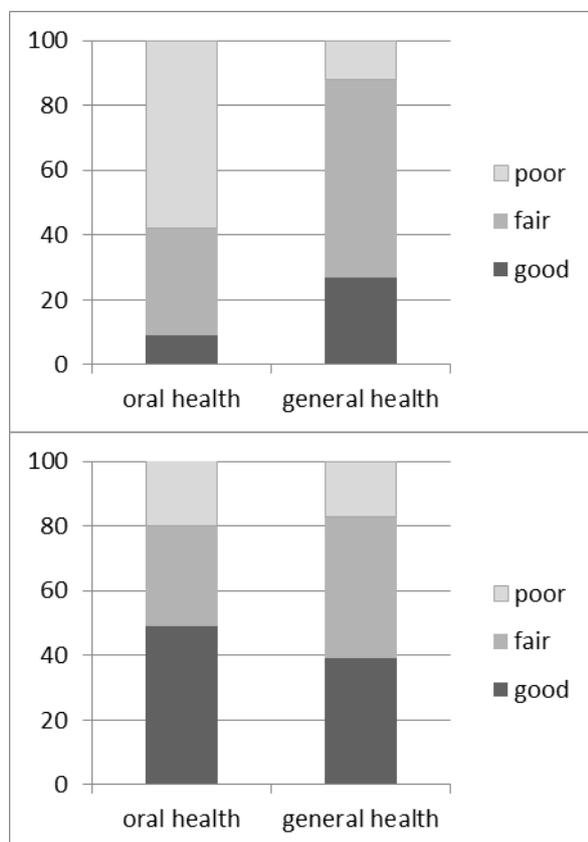

Figure 1. Perceived oral and general health (%) of patients at baseline and after 8-months

In previous studies by Sato et al. and Kikuchi et al., the significance of introducing the OHRQL model in dental hygiene education was shown. Jowett et al., Ng and Leung, and Drumond-Santana et al. used the OHIP-14 to assess the impact of periodontal disease on QoL.

Ng and Leung showed that the periodontal disease had a negative impact on QoL. They reported a perceived impact on the domains, mainly physical pain and psychological disability.

It is known that the self-ratings of oral heath, perceived needs, and the impact of oral health on QoL are not always closely correlated with clinical findings. It was reported that

patients did not report any significant impact on their QoL even when biomedical data were indicated of severe disease.

The conservative periodontal therapy performed in the present study is considered to be effective in terms of improvement in periodontal parameters. The results of our study showed significant improvment in the periodontal status and oral health after conservative periodontal therapy in accordance with the common knowledge that the status of oral hygiene has a high impact on the OoL.

Conclusions

With all the limitations regarding the number of patients, our study showed that the conservative periodontal therapy leads to substantially higher gains in periodontal status, and it also greatly improve their quality of life.

In conclusion, a preventive strategy, including oral hygiene instructions, and proper management of the periodontal disease is needed in order to improve patient's general health and social life.

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