

Clinical Application of Basic Treatment Combined with Periodontal Maintenance in the Treatment of Chronic Periodontitis

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Abstract: To analyze the clinical effect of basic treatment combined with periodontal maintenance treatment on chronic periodontitis patients and its impact on periodontal index. Method: 100 patients with severe and chronic periodontitis who voluntarily participated were collected as participants and divided into a control group (50 cases, receiving basic treatment) and an observation group (50 cases, receiving basic treatment combined with periodontal maintenance). The admission time of patients was within the range of April 2022 to April 2023 to analyze and compare the clinical efficacy of the two groups of patients after treatment, analyze the changes in periodontal index after treatment and compare between groups, and analyze and compare the annual number of missing teeth and the recurrence rate of periodontitis between the two groups of patients after treatment. Result: Compared with 76.00% of the clinical effect in the control group, the observation group had a higher clinical effect of 94.00%; Compared with before treatment, PD, BI, PET, CAL and other indicators all decreased after treatment, and the observed group showed a more significant downward trend; The annual number of missing teeth in the control group was (1.32 ± 0.27) , which was higher than that in the observation group (0.63 ± 0.18) ; The recurrence rate of the control group was 42.11% (16/38), which was higher than the observation group's 17.02% (8/47), and the difference was statistically significant ($P < 0.05$). Conclusion: The combination of basic treatment and periodontal maintenance therapy for patients with chronic periodontitis has good clinical application effects, improve their periodontal indicators, and reduce the recurrence rate of periodontitis and the probability of tooth loss.

1. Introduction

Chronic periodontitis is an oral disease caused by long-term bacterial infection of periodontal tissue, characterized by symptoms such as gum redness, bleeding, and bad breath. If not treated in a timely manner, chronic periodontitis may cause teeth to loosen and fall, and in severe cases, it may also affect chewing and language function, and even affect the overall health of the oral cavity. Basic treatment combined with periodontal maintenance is an effective method for treating chronic periodontitis. Basic treatment includes teeth cleaning, scraping, and polishing to remove plaque and

tartar on the surface of teeth and reduce the occurrence of periodontitis; Periodontal maintenance includes further treatment and protection of periodontal tissue, including methods such as medication and oral hygiene. This comprehensive treatment method can not only effectively alleviate the symptoms of patients, but also help them restore oral health and improve their quality of life. At the same time, regular oral examinations and the implementation of oral hygiene measures also play an important role in preventing and delaying the progression of chronic periodontitis, helping to avoid tooth loosening, falling, and the occurrence of oral diseases. In order to further analyze the clinical effects of basic treatment combined with periodontal maintenance treatment on chronic periodontitis patients and its impact on periodontal index, 100 patients with severe chronic periodontitis who voluntarily participated in the experimental study were collected and summarized as follows.

2. Materials and methods

2.1. General information

100 patients with severe chronic periodontitis who voluntarily participated were collected and divided into a control group (50 cases, male to female ratio of 27:23; age 22-48 years old, average 36.91 ± 5.28 years old) and an observation group (50 cases, male to female ratio of 28:22; age 23-48 years old, average 36.87 ± 5.49 years old). The admission time of the patients was within the range of April 2022 to April 2023. After calculating the general information of the selected patients, the difference was not statistically significant ($P > 0.05$) and was comparable. Researchers inform patients and their families of the significance and safety of the study, obtain their consent, and sign relevant documents; The medical ethics committee within the hospital understands the specific content of the research and agrees to the experimental study. Inclusion criteria: Patients without contraindications related to oral implantation; Patients without bad habits such as alcohol abuse and smoking. Exclusion criteria: participants with severe life-threatening diseases merged; Subjects with cognitive impairment who are unable to cooperate with the study.[1]

2.2. Method

The control group received routine basic treatment. We can use an ultrasound cleaner to clean teeth, and then examine the patient's condition. Based on the examination, we give the patient amoxicillin capsules, vitamin C, etc., and gargle with compound borax. The observation group patients received periodontal maintenance treatment based on the above foundation. The treatment personnel should evaluate the patient's condition, including the health status of periodontitis, whether there are other oral diseases, and conduct bacterial tests on the patient's teeth to determine the risk factors for periodontitis.[2] Develop different periodontal care plans for different patients, such as promoting oral hygiene knowledge, guiding patients to use dental floss correctly, combining vertical rotation and horizontal shaking methods, and paying attention to plaque control; we can regularly conduct oral health assessments and adjust periodontal care plans in a timely manner based on the patient's rehabilitation status.

2.3. Observation indicators

① we can evaluate the actual effect after treatment and compare between groups. After treatment, the clinical symptoms of the patient disappear as significant, the symptoms improve as effective, and the symptoms do not improve as ineffective. Excluding the ineffective rate is the treatment effect and analyze the changes in periodontal index after treatment and compare between groups, using periodontal pocket probing depth (PD), gingival bleeding index (BI), plaque index (PET), and

attachment loss (CAL) as evaluation indicators to analyze and compare the annual number of missing teeth and the recurrence rate of periodontitis between the two groups of patients after treatment.[3]

2.4. Statistical methods

The statistical analysis part of this study was completed by SPSS 22.0 operation, and the periodontal index and annual missing teeth were all statistically analyzed based on t-test, and the data representation was uniformly included in the form of ($\bar{x} \pm s$); For the clinical efficacy and recurrence rate in this study, statistical analysis was conducted based on the chi square test.[4] The data representation was included in the form of percentages, and the definition of statistical significance in the study was determined by whether the P-value of the study was less than 0.05.

3. Results

3.1. Clinical effects

The detailed data can be seen in Table 1: Compared with the 76.00% clinical effect of the control group, the observation group had a higher clinical effect of 94.00%, and the difference was statistically significant ($P < 0.05$).

Table 1: Comparison of clinical effects between two groups of patients [cases (%)]

Group	Number of cases	Apparent effect	Effective	Invalid	Total effective
control group	50	22(44.00)	16(32.00)	12(24.00)	38(76.00)
Observation group	50	27(54.00)	20(40.00)	3(6.00)	47(94.00)
χ^2 -value					6.353
P- value					<0.05

3.2. Periodontal index

Detailed data can be seen in Table 2: Compared with before treatment, PD, BI, PET, CAL and other indicators decreased after treatment, and the observation group showed a more significant trend of decrease, with a statistically significant difference ($P < 0.05$).

Table 2: Comparison of periodontal index among different groups

Group	Number of cases	PD(mm)		BI		PET		CAL(mm)	
		Before treatment	After treatment	Before treatment	After treatment	Before treatment	After treatment	Before treatment	After treatment
control group	80	6.13 ± 1.42	4.82 ± 0.94*	3.62 ± 0.43	2.31 ± 0.38*	2.34 ± 0.32	1.64 ± 0.28	5.64 ± 1.07	4.31 ± 0.69*
Observation group	80	6.24 ± 1.51	3.21 ± 0.49*	3.57 ± 0.64	1.39 ± 0.29*	2.37 ± 0.41	0.93 ± 0.17	5.81 ± 0.98	3.28 ± 0.33*
T-value		0.097	8.587	0.209	10.943	0.354	18.287	0.314	7.437

Note: Compared to before treatment* $P < 0.05$

3.3. Years of missing teeth and recurrence rate of periodontitis

The annual number of missing teeth in the control group was (1.32 ± 0.27), which was higher than that in the observation group (0.63 ± 0.18); The recurrence rate of the control group was 42.11% (16/38), which was higher than the observation group's 17.02% (8/47), and the difference was statistically significant ($P < 0.05$).

4. Conclusion

Dental plaque is the main factor causing chronic periodontitis, which is a mucosal substance formed by dirt and bacteria on the surface of teeth. If not cleared in a timely manner, bacteria in dental plaque can release acids and toxins, damaging periodontal tissue. According to research, certain genes can increase a person's risk of developing chronic periodontitis [5]. Some patients with certain diseases, such as diabetes, cardiovascular diseases and immune system disorders, will also have an increased risk, which will lead to the occurrence of chronic periodontitis. Incomplete tooth cleaning, poor oral hygiene, bad habits such as smoking, and medication use can also increase the risk of developing chronic periodontitis [6].

Periodontal maintenance refers to the treatment and protection methods for periodontal diseases such as periodontitis. Its main purpose is to prevent the further development of periodontal disease and maintain oral health. Periodontal maintenance includes multiple measures, such as oral hygiene, regular tooth washing, brushing, flossing, mouthwash, etc.[7] In addition, periodontal disease treatment drugs or the use of antibiotics can also be used to perform deep cleaning of teeth. For patients with periodontal disease, periodontal maintenance can also help alleviate pain, reduce inflammation, stop bleeding, and stabilize teeth. At the same time, regular periodontal maintenance measures can also control the number of bacteria in the oral cavity within a normal range, avoid recurrent periodontal disease, and reduce the risk of tooth loss to ensure oral health. From the research results, it can be found that compared with 76.00% of the clinical effect in the control group, the observation group has a higher clinical effect of 94.00%; The annual number of missing teeth in the control group was (1.32 ± 0.27) , which was higher than that in the observation group (0.63 ± 0.18) ; The recurrence rate of the control group was 42.11% (16/38), higher than the observation group's 17.02% (8/47), indicating that the combination of basic treatment and periodontal maintenance treatment for chronic periodontitis patients has a good clinical application effect, reducing the recurrence rate of periodontitis and the probability of tooth loss.[8]

PD is used to detect the depth of the gingival pocket, which means the probe measures the distance between the gingiva and teeth. Normal oral shallowness should be between 1-3 millimeters, exceeding 3 millimeters is considered mild periodontitis, and a depth exceeding 5 millimeters requires vigilance against the progression of periodontal disease; BI is used to evaluate the degree of gingivitis and periodontal health. By observing the bleeding status of gingiva, indicators such as the bleeding site, area, and proportion of gingival margin are evaluated; PET reflects the amount of plaque formed by bacteria on the surface of teeth [9]. Under normal circumstances, the bacterial community in the oral cavity is relatively balanced, but without proper oral hygiene habits or effective oral hygiene methods, plaque in the oral cavity can form, leading to the occurrence of oral diseases; In addition to evaluating the depth of gingival pocket, CAL also needs to detect the reconstruction of periodontal ligament, especially for assessing the progression and treatment effectiveness of existing periodontal disease [10]. In the long-term treatment of periodontitis, periodontal maintenance is the main means, and overall consideration, the effect is better than using basic therapy alone, which can better strengthen the therapeutic effect of basic therapy and maintain long-term clinical efficacy. From the research results, it can be found that compared with before treatment, indicators such as PD, BI, PET, CAL, etc. all decreased after treatment, and the observation group showed a more significant trend of decrease. Patients with chronic periodontitis can improve their periodontal indicators by using basic treatment combined with periodontal maintenance treatment.

In summary, the combination of basic treatment and periodontal maintenance treatment for patients with chronic periodontitis has a good clinical application effect, so as to improve the patient's periodontal indicators, reduce the recurrence rate of periodontitis, the probability of tooth loss, and promote tooth health recovery. The combination of basic treatment and periodontal maintenance

treatment can be promoted and applied in clinical practice.

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