Subject: Periodontal disease

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POLICY

Benefit is allocated in line with benefit management program guidelines and Scheme rules. Preventative and maintenance treatment for high risk patients is a funding priority. The member must be registered on the Periodontal Programme to qualify for treatment.

DEFINITION

Periodontal disease is a disease of the periodontal tissues that results in attachment loss and destruction of alveolar bone. The natural progression of this disease leads to eventual tooth loss.

GUIDELINE

Benefit for the prevention, treatment and post-treatment maintenance of patients with periodontal disease must be allocated from the applicable categories to the limit.

No benefit for general anaesthetic or conscious sedation for treatment of any periodontal condition in hospital.

Conscious sedation is often used during long sessions of treatment in practitioner’s rooms, but must be regarded as a convenience and should not be funded.

GENERAL INFORMATION

Periodontal disease has been known and treated for at least 5 000 years. Writings found in Egypt and China mention treatments for this disease. It was thought, despite Van Leeuwenhoek already discovering bacteria around teeth in the 17th Century, that this was a systemic disease. It was only in the late 19th Century that a bacterial aetiology was accepted.

The presence of a biofilm, which is in essence plaque, leads to disease such as dental caries and periodontal disease. A biofilm is a community of bacteria, attached to an environmental surface. It is usually protected and enclosed in a polysaccharide or slime matrix, and forms where there is sufficient moisture and nutrients. The inside of water and waste pipes, indwelling catheters and medical implants are examples of other surfaces often covered with a biofilm.

It is important to note that these biofilms are protected by the slime around it against the host’s immune response and also against antibiotics and antiseptics. The aim of periodontal disease prevention and treatment is therefore to disrupt the biofilm to such an extent that colonisation by perio-pathogenic bacteria can be prevented. This process starts with personal oral hygiene which entails brushing, inter-dental cleaning and rinsing with chlorhexidine. This is obviously a daily activity and two minutes of brushing twice daily is still regarded as the golden standard.
Periodontal instrumentation is done with hand, sonic or ultra-sonic instruments and the intervals are dependent upon the patients risk status. It was shown in early studies that cleaning the mouth in sessions could lead to recolonisation of previously cleaned sites by bacteria from untreated sites. This lead to the concept of full mouth disinfection (FMD) and also gave rise to the numerous requests for treatment under general anaesthetic in the 1990’s, due to the length of the procedures and intra-operative discomfort.

It was however shown subsequently, in a number of studies that cleaning the mouth over several visits in quadrants or sextants, seemed as equally effective as full mouth disinfection (FMD).

In 1999 the American Academy of Periodontists classified periodontal disease, during a workshop for the classification of Periodontal Diseases and Conditions. It is described by some observers as “encyclopaedic.”

A summarised classification is given below:

I. Gingival diseases
   a. Plaque induced
   b. Non-plaque induced

II. Chronic periodontitis
   a. Localized
   b. Generalized

III. Aggressive periodontitis
   a. Localized
   b. Generalized

IV. Periodontitis as a manifestation of systemic disease

V. Necrotizing periodontal diseases

VI. Abscesses of the periodontium

VII. Periodontitis associated with endodontic lesions

VIII. Developmental or acquired deformities and conditions

The role of radiographs in the diagnosis and treatment of periodontal disease was highlighted in a recent article, published in Australia. It is accepted internationally that radiographs should be current, based on the diagnostic needs of the patient, expose the patient to the minimum possible radiation and provide information for the proper evaluation and interpretation of the patient’s condition.

For years students have been taught that a set of full mouth radiographs (18 intraoral radiographs) is essential for periodontal diagnosis and treatment planning. Whilst it is accepted that panoramic radiography may be less accurate in reflecting bony defects, it has little effect in practice, as the treatment planning is dictated by clinical factors as well.

Digital panoramic radiography offers the advantage that the image can be manipulated and enhanced on computer. It would appear that in practice a panoramic radiograph, especially a digital one, can be accepted as adequate for treatment planning in periodontal cases. It will definitely reduce the radiation a patient would be exposed to. It will also reduce the time spent and difficulties associated with full mouth intraoral sets of radiographs, as well as the costs. The intraoral digital radiography sensors vary in size and are rigid and uncomfortable, often leading to inadequate coverage of wider areas and patient discomfort.

The difference in clarity and quality of the different approaches may have little impact on treatment planning, and therefore be mainly of academic interest.

Smoking is a significant risk factor in the development of periodontal disease. It is suggested that as much as 40% of chronic periodontitis may be caused by smoking. Smokers also have a higher prevalence of acute necrotising ulcerative gingivitis. The good news is that when smoking stops, the effect on the periodontium is reversible to the extent that former smokers and non-smokers have a similar healing response.
After initial treatment of periodontal disease, maintenance therapy must be instituted. The objective is to detect and intercept new and recurrent disease at selected intervals. It has been shown that two to three appointments per year are adequate to maintain periodontal health. It would appear that three appointments per year in the first period of maintenance (approx. 5 years), and two appointments thereafter, is sufficient. This is also cost-effective and the results are comparable to those obtained in institutional clinical trials. This confirms that current GEMS clinical guidelines are correct, limiting benefit to four-monthly maintenance visits in high risk and compromised patients. This again highlights the importance of the clinical risk profile supplied by the dental provider to GEMS when consulting a patient for the first time.

The use of antibiotic therapy in periodontal disease remains controversial. A cornerstone for the success of antibiotic therapy is the disruption of the biofilm by mechanical means (scaling), and the use of multi-drug therapy.

It would appear that the current consensus is that the routine use of antibiotics is not recommended, as the therapeutic benefits are much less than the potential side-effects and risks.

A very important aspect of periodontal disease, often highlighted by periodontists, is the relationship between the disease and systemic conditions and diseases.

It is a fact that general good health cannot be sustained in a body with poor oral health.

Several epidemiological studies have linked poor oral health with cardiovascular disease, erratic or poor glycaemic control in diabetes, low birth weight preterm babies and other conditions. It must be noted that a number of biologically plausible mechanisms have been postulated to explain the association and evidence is growing. It is however too early to establish causality.

In the case of both type 1 and type 2 diabetes, evidence suggests that the relationship with periodontal disease is at least bi-directional. Periodontal disease is now widely regarded as the sixth complication of diabetes. It is also an established fact that periodontal disease leads to poor metabolic control in diabetic patients, placing them at risk for complications. A recent meta-analysis of existing literature up to May 2012 found that further studies are necessary to prove the effectiveness of scaling and root planing in the control of metabolic factors. Some positive results were however noted in the glycaemic control of chronic type 2 diabetic patients.

The treatment of preterm, low birth weight infants remains amongst the highest cost cases in medicine. It is therefore prudent to note the studies and investigations pointing to an association between periodontal disease and adverse pregnancy outcomes. More recent studies are suggesting a definite relationship in this regard.

Although there is a need for large and rigorous studies to assess the risk and the effect of treatment and prevention, it could do no harm to promote and improve periodontal health in pregnant patients. A pro-active approach, as part of the education and wellness programs for pregnant patients, should be instituted.

In conclusion, the focus of periodontal treatment has shifted from mechanical documentation of clinical features, to an understanding of the aetiology and pathogenesis of the disease. Patients at risk must be identified and treatment aimed at destroying and intercepting the pathogens causing the disease.

Maintenance (scaling and polishing) by dentists and auxiliaries in dental practice is essential in restoring the health of patients with periodontal disease. The promotion of oral health will have a beneficial effect on the patient’s general health.

Periodontal health is increasingly being linked to playing a larger role in systemic health, according to extensive and recent research. A significant body of research has associated periodontal disease with an increased risk of cardiovascular disease, diabetes, and adverse pregnancy complications. Additionally, periodontal disease has been linked to other diseases, including respiratory disease, chronic kidney disease, rheumatoid arthritis, metabolic syndrome, erectile dysfunction, and cancer.
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