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Periodontal Diseases Between Previous and New Concepts

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ABSTRACT

Aim: *The aims and purposes of this review were to clarify the importance of extending our knowledge about risk factors affect oral and periodontal health which may influence the clinical outcomes of periodontal therapy and oral hygiene.*

The view of periodontal diseases has been becoming more clearness and understanding recently, and all efforts spent to put a new periodontal classification which will give us a different concept about same periodontal diseases we faced before.

Conclusion: *The periodontal treatment is given to the patient should be supported by understanding environmental risk factors of disease locally and systemically, and this will help to get the favorable outcomes of oral or periodontal health. It is recommended that oral hygiene and periodontal treatment of patients should be followed by extended recalls of periodontal maintenance care program.*

Keywords

Periodontal Therapy, Maintenance Care Program, Risk Factor, Environment.

Introduction

Risk assessment is evaluating of all circumstances that can affect the outcome of a therapeutic intervention. Risk is the probability that an individual will develop a specific disease in a given period, and vary from individual to individual [8].

Risk assessment should be performed before dental treatment that is designed to avoid high failure rates; during the phase of dental treatment to avoid technical issues that affect the treatment; during the phase of maintenance to minimize failure by healing off problems; or after the treatment has failed with analysis that tries to identify the causes of failure.

Risk factors: may be environmental, behavioral or biologic factors: pathologic bacteria, microbial tooth deposits, tobacco smoking, and diabetes.

Risk determination: background characteristic, which is sometimes substituted for the term risk factor should be reserved for those risk factors that cannot be modified: genetic factors, age, gender, socioeconomic, and stress.

Risk indicator: is probable or putative risk factors that have been identified in cross-sectional studies but not confirmed through longitudinal studies: human immunodeficiency virus (HIV), acquired immunodeficiency syndrome (AIDS), osteoporosis, infrequent clinical or dental visits.

Risk maker: predictors, although associated with increased risk for disease, do not cause the disease; these factors are identified in cross-sectional and longitudinal studies: previous history of disease, bleeding on probing

Behavior risk factors: history of poor compliance, substance use/

abuse, psychiatric & psychological issues, lack of understanding or communication, and patient expectations.

Local dento-oral risk factors: presence of ongoing or incompletely treated oral infections, periodontal infections, bad oral hygiene, deep pockets are habitats or reservoirs of microorganisms, endodontic infections, parafunctional habits (Bruxism, clenching, grinding),dentoalveolar conditions, ridge anatomy (width, height),bone quality (decalcification), quality of existing prosthetic restorations in region, and maxillary sinus location or inflammation.

Systemic risk factors: these involve the following factors like age, smoking, medical history, bisphosphonate therapy, phenytoin, calcium-channel antagonist, cancer chemotherapy, anticoagulants, immunosuppressive agents (corticosteroids), HIV infection, AIDS, history of radiation therapy to the jaws, bone disorders, osteoporosis, connective tissue and autoimmune disorders, and scleroderma...

Gingival/Periodontal Diseases
Overall assessment of the patient healthy/disease circumstances, probable local and systemic risk factors, and environmental behavior at any time of recall visits before, during, and after periodontal treatment and Maintenance care.

Risk factors & Prognosis
Most of previous periodontal classifications have been demented to focus on one risk factor than each other like local dental plaque biofilm, age, anatomic periodontal tissue, systemic disorders. relation.

New Concepts of Classification of Periodontal Diseases
The new classification of periodontal diseases represents all affecting factors:
Probable risks, Progression & response, Predicted prognosis and Periodontal complicated therapy.

Treatment should be considering the variability of complex factors which cause Periodontal Disease, and healthy gingiva as temporary stage may convert into gingivitis or periodontitis under irritant or morbidity circumstances.

Periodontitis results in different stages of tissue destruction (I-II-III-IV) and types of disease possible progression (A,B,C) grades.

Periodontal Treatment Strategy (PTS) is planned to follow all therapeutic phases at any time of recalls (SPT). It is not enough to remove the irritant factor which is started the periodontal disease, however, to stop or to prevent the aggravated environmental contributing factors incidence locally or systemically.

Systemic antimicrobial adjunct therapy and host modulation are used for inaccessible bacteria which invaded tissue with high numbers & virulence and disturb the delicate ecologic equilibrium.

Maintenance care &Sporting Periodontal Treatment (SPT)
Rationale:
- Progression of disease.
- Recurrence of periodontal disease.
- Bacteria penetration into the gingival tissues.
- Bacteria transmitted between family members.
- Healing with a long junctional epithelium or tissue deficiency.

Maintenance program of Periodontal care at recall visit:
An One hour is the time required for a recall visit to check plaque control and treatment by scaling and root planning with oral prophylaxis. That include reexamination or reevaluation, reinstruction, re-instrumentation with reinforcement, and recall.

New Periodontal Classification
Periodontal diseases and cases for many years have been identified and followed modified classifications as response for educational and clinical requirements of researches or studies.

1- 1989 workshop, periodontitis has different ages of onset and rates of progression.
- Prepubertal.
- Juvenile (localized and generalized).
- adult.
- Rapidly progressive.

2- 1993 European Workshop, periodontitis as
- adult.
- early onset periodontitis.

3- 1996-1999, major changes (for the last 19 years) Periodontitis include [2].
- Chronic.
- Aggressive (localized and generalized),
- As a manifestation of systemic disease.
- Necrotizing.

4- 1999-2017 workshop, develop a new classification for periodontitis after Population studies, Basic science investigations and Prospective studies evaluating environmental and systemic risk factors [1].

Periodontal Health, Gingivitis, and Gingival Conditions [3]:
The AAP 2017 workshop was Identifying the difference between:
- Gingival inflammation at one or more sites.
- A gingivitis case.
- Periodontal health.
- Gingival inflammation in a reduced periodontium.

Specific definitions agreed the following:
Gingival health or inflammation are differentiated when we have bleeding on probing or depth of the residual sulcus/ pocket, however, periodontitis needs supportive care to prevent recurrence of disease.

The workshop reorganized the following: (based on primary

etiology).
a-Gingivitis-dental biofilm induced [4,6].
(Biofilm alone, Systemic mediated & Drug enlargement)
b-Gingival diseases-non-dental biofilm induced [5].
(Genetic disorder, Specific infection, Inflame-immune conditions, Reaction processes, Neoplasms, Endocrine-Nutrational, Taumatic lesion & Gingival pigmentation).

Classification of Pathophysiology of Periodontitis include the following:
- Necrotizing periodontitis.
- Periodontitis (previously recognized as chronic or aggressive).
- Periodontitis as a manifestation of systemic disease.

Staging of periodontitis dependent upon:
- the severity of disease at presentation
- the complexity of disease management.

Staging involves four categories (stages 1 through 4) that is determined by:
- Clinical attachment loss., and percentage of bone loss.
- Probing depth, angular bony defects,
- Furcation involvement, tooth mobility, and tooth loss.

Grading provides biological features of disease, and history analysis of:
- The rate of disease progression or risk for further progression.
- Poor outcome of treatment or risk negatively affect patient.

Grading includes three levels:
(A- low risk, B- moderate risk, C- high risk for progression)

In addition to aspects related to periodontitis progression:
- General health & other exposures (smoking or level control in diabetes).
- Individual patient factors into the diagnosis, and therapy.

Systemic diseases and conditions
That affect the periodontal supporting tissues.
May classified based on the primary systemic disease.

1- Periodontitis as a Manifestation of Systemic Disease.
(Papillon Lefèvre Syndrome)
2- Systemic Diseases or Conditions Affecting the Periodontal Supporting Tissues.
(Neoplastic diseases).
3- Common systemic diseases with variable effects that modify the course of periodontitis.
(Uncontrolled diabetes mellitus) multifactorial nature of complex diseases.

Other periodontal conditions
Periodontal abscesses
Endodontic periodontal lesions

Periodontal developmental and acquired deformities and conditions
Mucogingival conditions
treatment of gingival recession based on:
- Interproximal loss of clinical attachment and
- Exposed root and cemento-enamel junction.
- The new classification of gingival recession that combines:
- Clinical gingival phenotype
Exposed root surface.
The term periodontal biotype was replaced by periodontal phenotype.

Occlusal trauma and traumatic occlusal forces
Traumatic occlusal force, replacing the term excessive occlusal force, resulted in:
- Occlusal trauma (the lesion).
- Excessive wear or fracture of the teeth.
Occlusal trauma in the progression of attachment loss in periodontitis?

Prosthesis- and tooth-related factors
The term biologic width was replaced by supracrestal attached tissues.
Indirect restorations procedures may cause
- Recession and loss of clinical attachment.
- Individual case management.

Peri-implant diseases and conditions [7]
Peri-implant mucositis
Is characterized by bleeding on probing and visual signs of inflammation.
a-While is caused by plaque biofilm (or non-plaque biofilm induced periimplant mucositis).
b-Peri-implant mucositis can be reversed.

Peri-implantitis
A plaque-associated pathologic condition occurring in the tissue around dental implants.
- Inflammation in the peri-implant mucosa & subsequent progressive loss of supporting bone.
- May occur early following implant placement as indicated by radiographic data.
- Peri-implantitis, in the absence of treatment, may progress in accelerating pattern.

Hard and soft tissue implant site deficiencies
Larger ridge deficiencies can occur at sites associated with:
Extraction trauma, Severe loss of periodontal support, Endodontic infections, Root fractures,
Thin buccal bone plates, Poor tooth position, Injury and Pneumatization of the maxillary sinuses.
Other factors affect systemic diseases reducing the amount of naturally formed bone, tooth agenesis, and Pressure from prostheses.

Conclusion
The Population studies are resulted in more explanation for

pathophysiology and progression of periodontal disease, for that the periodontal treatment becomes more complicated because of many risk factors that are responsible locally and systemically. This review has tried to clarify the new concepts about periodontal diseases and therapy that should consider all environmental variable causes to improve the oral hygiene. And prevent recurrence.

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