REVIEW ARTICLE

Development and Evolution of Classification of Periodontal Diseases: An Insight

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Abstract

The subject of classification is considered to be monotonous by most people. Classification systems help to assemble similar disease phenotypes in more homogeneous syndromes. Over the years, various researchers have done extensive work in the development of classification of periodontal diseases. Three dominant paradigms that reflected the understanding of the nature of periodontal diseases were noticed during the evolution of periodontal diseases. The most accepted classification is the American Academy of Periodontology (1999) Classification. It was designed to overcome the drawbacks, problems, inconsistencies and deficiencies of the 1989 classification. Also analysis and rationale was provided for each of the modifications and changes.

Keywords: Classification, periodontal diseases, American Academy of Periodontology (1999) Classification

Introduction

Over the years, discernment of the nature of periodontal diseases was achieved successfully due to extensive research in this field. Regardless of this, foregoing discussion continues about classification systems. Classification of periodontal diseases is a subject of inevitable controversy. When an attempt is made to group the entire agglomeration of periodontal diseases into a precise and universally accepted classification system, one realizes that is extremely difficult and complex to deal with. Despite this no win situation, in the past century, experts have worked towards periodically developing a new classification system for periodontal diseases or to improve an existing one.

Need for a classification system

The concept of classification systems is considered as uninteresting by many, but it provides us with a framework to come to a diagnosis. The intricacy of periodontal diseases can be understood by classifying various diseases. Its goals are[1]:

- To provide a foundation to study the etiology, susceptibility traits, pathogenesis, and treatment of diseases in an organized manner.
- To give clinicians a way to organize the health care needs of their patients.
- Assemble similar disease phenotypes in more homogeneous syndromes.

Dominant paradigms in the evolution of classification systems

Three paradigms that reflected the understanding of the nature of periodontal diseases were noticed during the evolution of periodontal diseases [2].

- (~1870–1920): Clinical characteristics paradigm
  For the period from approximately 1870 to 1920, the researchers had insufficient information about the etiopathogenesis of periodontal diseases. There was dispute about the nature of periodontal diseases; whether they were caused by local or systemic factors. Opinions were divided. Many of the advocates for the etiological role of local factors also acknowledged that in some cases both local and systemic factors are responsible. Various researchers depended on case descriptions and

personal interpretations of clinical cases to classify periodontal diseases.

- (~1920–1970): Classical pathology paradigm
  During this time a new concept developed that periodontal diseases can be of 2 types-inflammatory and non-inflammatory ('degenerative' or 'dystrophic'). This was based on the observation that certain forms of periodontal diseases were due to degenerative changes in the periodontium such as cementopathia. As a result most of the classification systems in this era included disease categories such as 'dystrophic', 'atrophic' or 'degenerative'. Around 1970, a different paradigm had begun to dominate thoughts about the nature of periodontal diseases. Also observation that a patient with hypophosphatasia who had premature loss of anterior deciduous teeth, also harbored Porphyromonasgingivalis in the sub gingival flora[3,4,5,6], suggested that something other than hypoplasia of cementum might have contributed to the periodontal destruction.

- (~1970–present): Infection/ host response paradigm
  After the publication of Robert Koch's postulates (1876), researchers stressed upon the infectious nature of periodontal diseases. W.D. Miller[7], in particular, was an early proponent of the infectious nature of periodontal diseases. He stated three factors which were to be taken into consideration in every case of pyorrhea alveolar is: (1) predisposing circumstances, (2) local irritation, (3) bacteria. Miller also recognized that certain systemic conditions (e.g. diabetes, pregnancy) could modify the course of the disease. The next major discovery in periodontal microbiology was the preliminary demonstration in 1976–1977 of microbial specificity at sites with periodontosis.[8,9] This finding, coupled with the demonstration in 1977–1979 that neutrophils from patients with juvenile periodontitis (periodontosis) had defective chemotactic and phagocytic activities,[10,11] marked the beginning of the dominance of the Infection/Host Response paradigm
  Classification systems in the modern era represent a blend of all three paradigms since there is a certain amount of gravity to some of the earliest thoughts about the nature of periodontal diseases. History reveals that people in the past opposed the modification of these entities. They were adamant to accept a particular classification in spite of it having many flaws. But in the true sense, they should be periodically modified based on modern thinking and concepts.

Classifications of Periodontal diseases by various Researchers

Over the last century, numerous attempts were made by investigators to classify periodontal diseases, each of them fine- tuning the previous ones[12]. They are as follows:

Table 1: Chronology of Classification systems

- Kantorowicz - 1924
- McCall and Box -1925
- Simonton -1927
- Haupl and Lang - 1927
- Gottlieb - 1928
- Becks - 1929
- Jaccard -1930
- Isadore Weinmann -1934
- Roy - 1935
- Robinson - 1935
- Weski - 1937
- Thoma and Goldman – 1937
- Orban - 1942
- Fish – 1944
- Hine and Hine – 1944
- Hulin – 1949
- Pucci - 1950

- Miller – 1950
- Lyons - 1951
- Kerr - 1951
- Goldman -1956
- McCall -1956
- American Academy of Periodontology - 1957
- Robinson -1959
- Carranza -1959
- Glickman - 1964
- Drum -1975
- World Workshop in Clinical Periodontics - 1989
- European Workshop in Periodontology - 1993
- American Academy of Periodontology -1999

World Workshop in Clinical Periodontics (1989) Classification

The 1989 classification was based on the Infection/host response paradigm and depended heavily on the age of the patient and rates of progression.[12]

Table 2: World Workshop in Clinical Periodontics (1989) Classification

I. Early- onset Periodontitis
A. Prepubertal Periodontitis
1. Localized
2. Generalized
B. Juvenile Periodontitis
1. Localized
2. Generalised
II. Adult Periodontitis
III. Necrotising Ulcerative Periodontitis
IV. Refractory Periodontitis
V. Periodontitis associated with Systemic diseases

Drawbacks of the 1989 Classification [2]

- Gingival disease category was absent.
- Non-validated age-dependent criteria in other periodontitis categories.
- Extensive crossover in rates of progression of the different categories of periodontal disease.
- 'Rapidly Progressive Periodontitis', 'Refractory Periodontitis' and 'Prepubertal Periodontitis 'were heterogeneous category.
- Extensive overlap in the clinical characteristics of the different categories of periodontitis.

As a consequence of these drawbacks, the 1889 classification was criticized shortly after it was published and a different system was proposed by others.

European Workshop in Periodontology (1993) Classification

This classification, being simple, was agreed upon by most clinicians and research scientists throughout the world.

Table 3: European Workshop in Periodontology (1993) Classification

• **Adult Periodontitis** - Begins at the 4th decade of life, slow rate of progression of disease.
• **Early onset Periodontitis** - Begins before the 4th decade of life, rapid rate of progression of disease, altered host response is seen.
• **Necrotizing Periodontitis** - Tissue necrosis with clinical attachment and bone loss is seen.

Elaboration of the broad spectrum of periodontal diseases encountered in clinical practice was absent in the 1993 European classification. Thus during the 1996 World Workshop in Periodontics, the need for a revised classification system for periodontal diseases was stressed. In 1997, the American Academy of Periodontology responded to this need and formed a committee to plan and organize an international workshop to revise the classification system for periodontal diseases. The International Workshop for a Classification of Periodontal Diseases and Conditions was held and a new classification was agreed upon in 1999.

American Academy of Periodontology (1999) Classification

This classification was designed to overcome the drawbacks, problems, inconsistencies and deficiencies of the 1989 classification. Also analysis and rationale was provided for each of the modifications and changes. [13]

Table 4: American Academy of Periodontology (1999) Classification

I. Gingival diseases (G)

A. Gingival diseases caused by plaque

1. Gingivitis exclusively caused by plaque

a. With no local modifying factors

b. With local modifying factors

2. Gingival diseases modified with systemic factors

a. associated with endocrine system

1) Gingivitis connected with puberty

2) Gingivitis connected with the menstrual cycle

3) Connected with pregnancy

a) Gingivitis in pregnancy

b) Pyogenic granuloma

4) Gingivitis connected with diabetes mellitus

b. Connected with blood disease

1) Gingivitis connected with leukaemia

2) Other diseases

3. Gingival diseases modified by application of medications

a. Gingival diseases caused by medications

1) Gingival growths caused by medications

2) Gingivitis caused by medications

a) Gingivitis connected with oral contraceptives

b) Other medications

4. Gingival diseases caused by malnutrition

a. Gingivitis due to lack of vitamin C

b. Others

B. Gingival lesions not induced by plaque

1. Gingival diseases of specific bacterial etiology

a. Lesions connected with Neisseria gonorrhoeae

b. Lesions connected with Treponemapallidum

c. Lesions connected with streptococci

d. Others

2. Gingival diseases of viral etiology
a. Infection with the Herpes virus
1) Primary herpetic gingivostomatitis
2) Recurring oral herpes
3) Varicella zoster infection
b. Others

3. Gingival diseases of fungal etiology
a. Infection with candida
1) Generalised gingival candidiasis
b. Linear gingival erythema
c. Histoplasmosis
d. Others

4. Gingival diseases of genetic etiology
a. Inherited fibromatosis of the gingiva
b. Others

5. Systemic diseases which manifest on the gingiva
a. Changed mucous membrane
1) Lichen planus
2) Pemphigoid
3) Pemphigus vulgaris
4) Erythema multiformis
5) Lupus erythematosus
6) caused by medications
7) Others

b. Allergic reactions
1) Material in restorative dentistry
a) Mercury
b) Nickel
c) Acrylic

d) Others
2) Reaction to:
a) Toothpaste
b) Mouthwashes
c) Additives in chewing gum
d) Nutritive substitutes
3) Others

6. Traumatic lesions (iatrogenic, accidents)
a. Chemical
b. Physical
c. Thermal
7. Reaction to foreign bodies
8. Not otherwise defined

II. Chronic periodontitis (CP)
A. Localised
B. Generalised

III. Aggressive periodontitis (AP)
A. Localised
B. Generalised

IV. Periodontitis as a manifestation of systemic diseases (NP)
A. Connected with blood diseases
1. Acquired neutropenia
2. Leukaemia
3. Others

B. Connected with genetic disorders
1. Family or cyclic neutropenia
2. Down's syndrome
3. Leucocyte adhesive deficiency syndrome
4. Papillon-Lefevre syndrome
5. Chediak-Higashi syndrome
6. Histiocytosis or Eosinophilic granuloma syndrome
7. Glycogen storage syndrome
8. Infantile genetic agranulocytosis
9. Cohen's syndrome
10. Ehlers-Danlos syndrome, type IV and VIII AD
11. Hypophosphatasia
12. Others

C. Not otherwise defined

V. Necrotizing periodontal diseases
A. Necrotizing ulcerous gingivitis /NUG)
B. Necrotizing ulcerous periodontitis (NUP)

VI. Periodontal abscesses
A. Gingival abscess
B. Periodontal abscess
C. Pericoronal abscess

VII. Periodontitis with endodontal lesions
A. Combined perio-endo lesion

VIII. Developmental and acquired deformation and conditions
A. Localised dental factors which encourage plaque, caused by gingivitis / periodontitis
1. Anatomy of the teeth
2. Reconstruction of teeth/effect of the device
3. Fractured root
4. Resorption of roots and (cement pearls)

B. Mucogingival deformities and relations in the tooth vicinity
1. Recession
a. Facially and orally
b. Approximally
2. Lack of gingival keratinization
3. Shortened gingival attachment
4. Localisation of the tongue or lip frenum
5. Gingival enlargement
a. Pseudo-pockets
b. Irregular development of the gingival edge
c. Excessive gingival presentation

d. Gingival enlargement
6. Abnormal staining

C. Changed mucous membrane on an edentulous ridge
1. Loss of vertical or horizontal bone dimension
2. Loss of gingiva, i.e. keratinized tissue
3. Gingival growths, i.e. of soft tissue
4. Abnormal localisation of the tongue or lip frenum
5. Reduced vestibule depth

6. Abnormal staining

D. Occlusal trauma
1. Primary occlusal trauma
2. Secondary occlusal trauma

Changes in the 1999 Classification for Periodontal diseases[13]

Addition of a Section on "Gingival diseases"
As the 1989 classification did not include a section on gingival diseases, a detailed classification of gingival diseases and lesions was included in this classification that was either dental plaque-induce or not primarily associated with dental plaque. The dental plaque induced gingival diseases can be modified by systemic factors, medications and malnutrition. Non- plaque induced gingival diseases can be from a specific bacteria, virus, fungus of genetic origin, systemic conditions, traumatic lesion or foreign body reaction.

Replacement of "Adult Periodontitis" with "Chronic Periodontitis"
The term "Adult Periodontitis" created a diagnostic dilemma for clinicians as the form of periodontitis commonly found in adults can also be seen in adolescents. Thus adolescents with this type of periodontitis would be called having "adult periodontitis". Clearly, the age-dependent nature of the adult periodontitis designation created problems. Therefore, the term Chronic Periodontitis was given by the workshop participants to characterize this constellation of destructive periodontal diseases. But this was criticized by many as the term 'Chronic' might be interpreted as 'incurable'. Many suggested substitute terminologies such as "Periodontitis—Common Form" and "Type II Periodontitis" but were eventually rejected by the majority of the group. Eventually the term "Chronic Periodontitis" was accepted. Traditionally this form of periodontitis has been characterized as a slowly progressive disease, but data also suggests that some patients may experience short periods of rapid progression. Therefore, workshop participants concluded that rates of progression should not be used to exclude people from receiving the diagnosis of Chronic Periodontitis. Chronic periodontitis has been further classified as localized (< 30%) or generalized (> 30 %) sites are involved. Severity is based on the amount of clinical attachment loss (CAL) and is designated as- mild(1-2 mm CAL), moderate (3-4 mm CAL) or severe (>5mm CAL).

Replacement of "Early-Onset Periodontitis" With "Aggressive Periodontitis"
The term "Early-onset periodontitis" (EOP) was used in the 1989 American Academy of Periodontology and 1993 European classifications as a collective designation for a group of dissimilar destructive periodontal diseases that affected young patients (i.e. prepubertal, juvenile, and rapidly progressive periodontitis) because these diseases all had an early onset affecting young people.A21-year-old patient with the classical incisor-first molar pattern of Localized Juvenile Periodontitis (LJP) cannot be labeled as a juvenile. So it adds to the confusion as to whether the age of the patient be ignored and the disease classified as LJPanyway. Because of these problems, workshop participants decided that it was wise to discard classification terminologies that were age-dependent or required knowledge of rates of progression. Accordingly, "Early-Onset Periodontitis" were renamed using the term "Aggressive Periodontitis." In general, patients who meet the clinical criteria for LJP or GJP (Generalized Juvenile Periodontitis) are now said to have "Localized Aggressive Periodontitis" or "Generalized Aggressive Periodontitis," respectively. The Rapidly Progressive Periodontitis (RPP) designation has been discarded. Patients who were formerly classified as having RPP will, depending on a variety of other clinical criteria, be assigned to either the "Generalized Aggressive Periodontitis" or "Chronic Periodontitis" categories. It should be emphasized that patients with rapidly progressive forms of periodontitis exist. They do not, however, represent a homogenous group.

Elimination of a Separate Disease Category for "Refractory Periodontitis"
In the 1989 classification, Refractory periodontitis was considered as a separate disease category. This heterogeneous group of periodontal diseases refers to instances in which there is a continuing progression of periodontitis in spite of excellent patient compliance and the provision of periodontal therapy that succeeds in most patients. But periodontal therapy sometimes fails to arrest the progression of different categories of periodontitis. Therefore the group concluded that, rather than a single disease category, the "refractory" designation could be applied to all forms of periodontitis in the new classification system (e.g. refractory chronic periodontitis, refractory aggressive periodontitis etc.).

Clarification of the Designation "Periodontitis as a Manifestation of Systemic Diseases"

In the 1989 classification, one of the disease categories was "Periodontitis associated with systemic disease". It has been retained in the new classification since it is clear that destructive periodontal disease can be a manifestation of certain systemic diseases. An interesting fact to note is that diabetes mellitus is not on the list of systemic diseases in which periodontitis is a frequent manifestation. This is because the presence of uncontrolled diabetes mellitus can alter the clinical course and expression of chronic and aggressive forms of periodontitis. Similarly, the new classification does not contain a separate disease category for the effects of cigarette smoking on periodontitis as it is a significant modifier of multiple forms of periodontitis.

In the "Dental Plaque-Induced Gingival Diseases" portion of the classification, 'diabetes mellitus-associated gingivitis' is included. The reason for this decision was that plaque-induced gingivitis was considered a single entity by the work-shop participants. This is not the case for periodontitis, where there are clearly different clinical forms.

Replacement of "Necrotizing Ulcerative Periodontitis" With "Necrotizing Periodontal diseases"

Workshop participants believed that necrotizing ulcerative gingivitis (NUG) and necrotizing ulcerative periodontitis (NUP) are clinically identifiable conditions. However, the group was less certain whether these conditions are a part of a single disease process or are they truly separate diseases. Hence the group decided to place both clinical conditions under the single category of "Necrotizing Periodontal Diseases." Also both NUG and NUP might be manifestations of underlying systemic problems such as HI infection. In such a situation, these conditions were not placed under the manifestation of systemic diseases as there are many factors other than systemic diseases that appear to predispose to the development of NUG or NUP such as emotional stress and cigarette smoking.

Addition of a Category for "Periodontal Abscess" and "Periodontic-Endodontic Lesions"

The 1989 classification did not include a section on the connection between periodontitis and endodontic lesions. Thus this section was included in this classification system as combined endodontic and periodontic lesions may develop independently or as a secondary lesion.

Addition of a Category on "Developmental or Acquired Deformities and Conditions"

Although the deformities and conditions listed in this section of the classification are not separate diseases, they are important modifiers of the susceptibility to periodontal diseases or can dramatically influence outcomes of treatment. This category includes local factors associated with teeth and restorations, mucogingival deformities around teeth and on edentulous ridges as well as occlusal trauma.

Essentialistic or Nominalistic disease classification

A common obstacle is observed in classifying periodontal disease is that clinical attachment loss which is a vital component of periodontitisis expressed in all patients in the same way. For example: 2 mm loss of attachment mesial of all first molars in an 8-yearchild is a severe problem suggestive that the individual is highly susceptible to periodontal disease, whereas the same condition in a60 years old subject may suggest that the individual is rather resistant to periodontal disease. The essentialisticidea implies the real existence of a disease caused bya class of agents[1]. Since periodontal disease has a multifactorial etiology, classifications based on essentialistic approach will be intricate. Armitage et al[14] in 2004 discussed periodontal diagnosis and classification. He suggested that a diagnosis can be phrased in many different ways depending on how accurate one wants to be. It can be debated that all forms of periodontitis are chronic in nature (Exception: Acute necrotizing periodontitis and a periodontal abscess), which means that there would be no room for the diagnosis aggressive periodontitis. Thus all cases of periodontitis will have the diagnosis chronic periodontitis, a situation which is not practical in clinical practice as phenotypes will not be taken into consideration.

At present, the best option is to classify the periodontitis in an exhaustive but also exclusive way and use a terminology for the various classes of the disease which makes it easy to understand the case. This is the nominalistic concept of classification [1].

Van der Velden[15] in 2000suggested a classification based on four dimensions, i.e. extent, severity, age, and clinical characteristics. The following is a presentation of the original classification with a few additions[1]:

- Defining when periodontitis is considered to be present. It is suggested to define periodontitis as the presence of inflamed pathological pockets ≥ 4 mm deep in conjunction with attachment loss. If present, then the next steps can be taken.

- Classification based on extent of the disease, i.e. number of affected teeth

Table 5: Classification based on the extent of the disease. If teeth are missing, the class description should still reflect the clinical image of the patient. Therefore it was decided for cases with£14 teeth to omit the class semi-generalized and to change the number of teeth for the generalized class to 8–14[1]

Extent of the disease	Permanent / mixed dentition No. of teeth present		Primary dentition
	n ≥14	n ≤ 14	
Incidental	1 tooth	1 tooth	1 tooth
Localized	2-7 teeth	2-7 teeth	2-4 teeth
Semi- generalized	8-13 teeth	-	5-9teeth
Generalized	≥14 teeth	8- 14 teeth	≥ 10 teeth

- Classification based on severity of disease per tooth. The fact that either attachment lossor bone loss can be used for the classification of severity implies that although it may be important to know the actual root length in a given patient radiographs are not a prerequisite for the classification of severity.

Table 6: Classification based on the severity of disease per tooth. The mean estimated root length based on the literature is approximately 12 mm (21); in the case of incidental disease, the severity category at that particular tooth is mentioned[1]

Minor	Bone loss ≤ 1⁄3 of the root length or attachment loss ≤ 3mm
Moderate	Bone loss > 1⁄3 and ≤ 1⁄2 of the root length or attachment loss 4–5 mm
Severe	Bone loss > 1⁄2 of the root length or attachment loss ≥ 6mm

- Classification based on age.

Table 7: Classification based on age. If in patients classified as adult periodontitis it can be demonstrated on the basis of documentation that they already had moderate or severe periodontitis before the age of 36 years, the disease is classified as early onset periodontitis[1]

Early onset periodontitis	
Prepubertal periodontitis	≤ 12 years
Juvenile periodontitis	13- 20 years
Post-adolescent periodontitis	21-35 years
Adult periodontitis	≥ 36 years

- Classification based on clinical characteristics

Table 8: Classification based on clinical characteristics. Periodontitis associated with systemic diseases, i.e. periodontitis in subjects suffering from general diseases, or periodontitis in subjects using medication, which enhance the rate and severity of periodontal breakdown is not identified as a specific class of periodontitis. However, the association with such a condition should be added to the diagnosis[1]

Necrotizing periodontitis	Interdental gingival necrosis, bleeding and pain
Rapidly progressive periodontitis	Documented rapid breakdown (at any age), i.e. rapidly progressive periodontitis patients showing a progression of ≥ 1 mm interproximal attachment⁄bone loss per year at affected sites
Refractory periodontitis	Documented, no or minimal pocket depth reduction at single rooted teeth after proper initial therapy and⁄or further attachment loss despite the proper execution of various treatment modalities

The classification is ascertained in the following way:

- First, the severity category is determined for each tooth;
- Next, the extent category is determined by counting the number of teeth with the most severe condition;
- Diagnosis on the basis of clinical characteristics is added if applicable;

- Diagnosis on the basis of age.

In the nomenclature, the parameters for the classification are set in the following order: extent, severity, clinical characteristics and age. Thus examples for diagnoses are: localized minor prepubertalperiodontitis, localized severe juvenile periodontitis, semi-generalized minor juvenile periodontitis, generalized severe refractory post-adolescent periodontitis, localised severe adult periodontitis. One could make the diagnosis even more detailed by including two levels of extent and severity when appropriate, e.g. localized severe, semi-generalized moderate adult periodontitis.
Analysis of the patients will be better with the classification based on the nominalistic principle. This mayhelp research into the etiology of periodontitis by including the 'same' type of patients in the study protocols.

Future challenges in the Classification of Periodontal Diseases

Now that we have entered the postgenomic era, classification systems based on the microbiological features of periodontal diseases or on the genetic factors would seem logical as these factors dominate the expression of the disease. Sub-classifications of diseases are problematic as these infections are polymicrobial and polygenic [2]. Also environmental and host-modifying conditions (e.g. oral hygiene, smoking, emotional stress, diabetes) reshape the clinical expression of these diseases.
With sophisticated multivariate analyses, 'Chronic Periodontitis' may be sub classified into multiple forms of into discrete microorganism/host genetic polymorphism groups such as [2]:

- Group A – Set # 1 of microorganisms ± Set # 1ofgenetic polymorphisms.
- Group B – Set # 2 of microorganisms ± Set # 2ofgenetic polymorphisms.
- Group C – Set #3 of microorganisms ± Set # 3of genetic polymorphisms.
- Group D – Set # 4 of microorganisms ± Set # 4ofgenetic polymorphisms.

But the dilemma is 'when do host - modifying factors such as smoking, diabetes become a necessary classification characteristic of the disease'. Clinicians and investigators have an inclination to use etiology or pathogenesis-based classifications too early. For example, it is challenging to prove that the presence of a known periodontal pathogen in the sub gingival flora is actually the cause of the periodontal disease in that group of individuals. This is because it has been observed that Actinobacillusactinomycetemcomitanscan be found in the supra and sub gingival flora of patients with and without periodontitis. Therefore, until there is enough evidence, classifications based on etiology or pathogenesis should be avoided.

Conclusion

Classification systems for periodontal diseases have evolved based on the understanding of the nature of these diseases at the time the classifications were proposed. Revisions to existing systems have been largely influenced by three dominant paradigms that reflect thinking at the time the classifications were proposed: the Clinical Characteristics paradigm (~1870–1920), the Classical Pathology paradigm (~1920–70), and the Infection/Host Response paradigm (~1970–present). Although classification systems for periodontal diseases currently in use are firmly based on and dominated by the Infection/ Host Response paradigm, some features of the older paradigms are still valid and have been retained. Since it is probable that essentially all dentists and periodontists in the world are convinced that most periodontal diseases are infections, it is unlikely that the Infection/Host Response paradigm will be replaced in the near future. It is highly likely that current disease designations, such as 'Chronic Periodontitis', are constellations of polymicrobial and polygenic infections whose clinical expression is profoundly altered by important environmental and host-modifying conditions. Before a classification firmly based on the etiological and pathogenic characteristics of periodontal infections can be devised, numerous fundamental breakthroughs will have to occur in our understanding of host–microbial interactions and the environmental factors that affect them. New classification systems appear complex and too comprehensive at a glance. However, some of the former classifications which looked much straightforward were frequently unsuitable and confusing to use. The new classification of periodontal diseases has made application in practice possible. Neither is this classification ideal. However, it is the first time that a group of internationally acknowledged experts have produced a generally accepted and scientifically founded classification of periodontal diseases.

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