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Mini-Review

Supportive Periodontal Therapy: A Brief Review

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Abstract:

Periodontal and Gingival diseases in their various forms have affected human dentition. Various treatment modalities had been introduced to treat these diseases since they are the one of the most common cause of tooth loss. Treatment for these diseases follows some steps starting from mechanical debridement through local drug delivery to flap surgeries. Supportive Periodontal therapy has also been an integral part of this treatment as it involves proper maintaining and care given to the patient. These include detailed medical and dental history, radiographic review, and patient maintenance. This article provides a brief review on various aspects on supportive periodontal therapy.

***Keywords:** Periodontal and Gingival diseases, Supportive periodontal therapy, Patient Maintenance.*

Introduction

Periodontitis is an inflammatory disease of supporting tissues of teeth caused by specific microorganisms or groups of microorganisms which result in progressive destruction of the periodontal ligament pocket formation, gingival recession, or both.[1] This is the most common disease affecting dentition which can lead to tooth loss. Bacteria form biofilm which provides them their safest habitat. Biofilm and Bacterial products cause gingival irritation and leads to gingivitis, which if left untreated results in periodontal disease. This is responsible for the loss of attachment and eventually tooth loss.[2] The term Supportive Periodontal Therapy refers to the need for corrective measures to support the patients' own efforts to control its periodontal infections and further to avoid its re-infection. It forms an integral part of periodontal treatment. It is also known as Periodontal Maintenance Therapy.[3,4]

Aims and Objectives of Supportive Periodontal Therapy:

1. To prevent tooth loss by protecting clinical attachment loss
2. Preserve alveolar bone support.
3. To prevent inflammation as plaque will not get accumulated and hence no gingivitis.
4. Maintaining a healthy and functional oral environment
5. To prevent reoccurrence of the previous disease
6. Reduce chances of tooth loss
7. To find and treat any disease within time[5]

Types

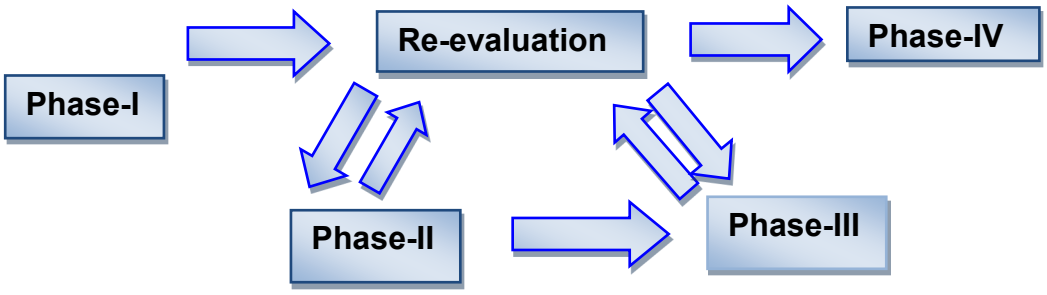
In 1981 Snider and Schallhorn classified Supportive Periodontal Therapy into 4 types[6]

TYPE-I	Preventive Maintenance	Patient with healthy periodontal structures
TYPE-II	Trial Maintenance Therapy	Patient with mild to moderate periodontitis
TYPE-III	Compromised Maintenance Therapy	Patients where active therapy is not possible as in cases with medically compromised
TYPE-IV	Post-treatment Maintenance Therapy	Maintenance to prevent reoccurrence of the disease

Before going in to details of the Supportive Periodontal Therapy, various phases of periodontal treatment have been described in the following section.

Phases of Periodontal Treatment[7]:

Phase –I	Non-Surgical Phase
Phase-II	Surgical Phase
Phase-III	Restorative Phase
Phase-IV	Maintenance Phase



Phase –I (Non-Surgical): It includes plaque control

1. Scaling and root planing
2. Evaluation of carious tooth followed by its restoration.
3. Removal of any prosthetic and restoration that causes irritation
4. Split therapy to correct MPDS
5. Splinting of teeth
6. Minor orthodontic adjustment
7. Provisional Restoration
8. Extraction of any grossly decayed tooth
9. Diet control

Phase-II (Surgical Phase): It includes

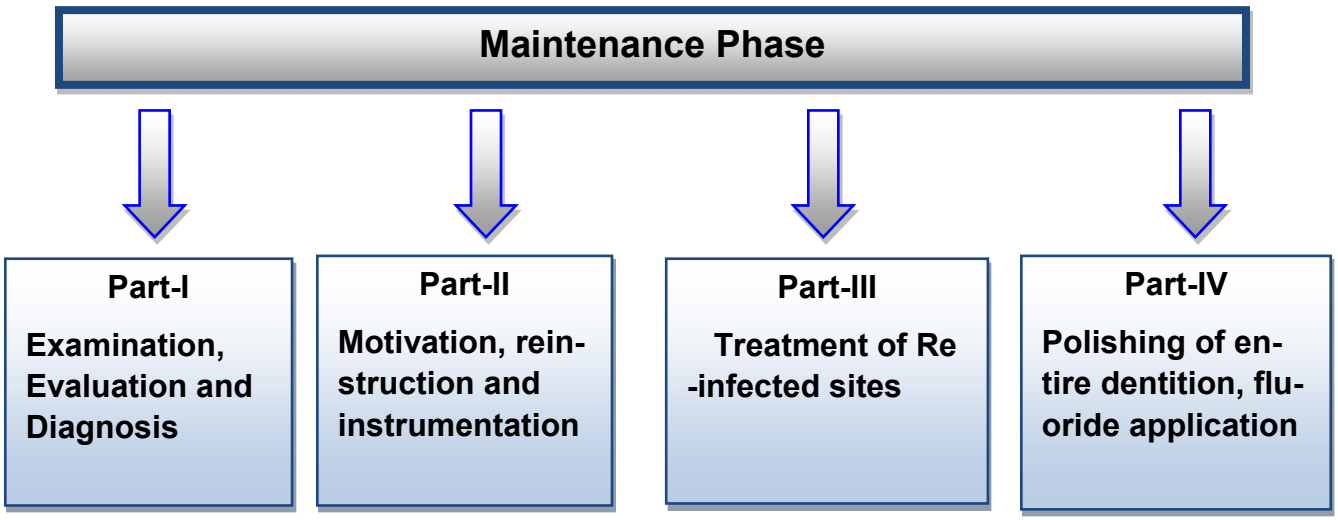
1. Periodontal Flap surgeries
2. Implant placement
3. Endodontic surgeries

Phase-III (Restorative Phase): It includes

1. Removable or fixed prosthetic appliances
2. Final restorations
3. Periodontal examinations

Phase-IV (Maintenance Phase): It includes periodic recalls visits to have long term success of the treatment. The interval between treatments is initially 3 months which can be varied according to the requirement of the patients.[8]

Supportive Periodontal Therapy: Flow Chart



Supportive Periodontal Therapy can be divided in to four parts. These are as follows:

Part-I

It involves multi-risk assessment i.e. site risk assessment, tooth risk assessment, periodontal risk assessment.

1. General examination
2. Detailed dental or medical history
3. Intra-oral examination
4. Hard tissue examination[9]-

    - Examination for caries
    - Examination for any tooth fracture
    - Tooth mobility
    - Implant evaluation
    - Restoration evaluation
    - Occlusal changes

5. Soft tissue examination-

    - pocket depth
    - Gingival changes

6. Examination of any prosthesis, if present
7. Check for any other sign or symptoms by the patient

Part-II

1. Motivates patient to maintain oral hygiene
2. Only though sites should be re-instrumented this shows signs of inflammation or active disease progression.[9]
3. Informing the patient about the benefits to maintain hygiene.

Part-III

1. It starts with mechanical debridement i.e. scaling and root planing.
2. Generalized re-infection is usually the result of inadequate Supportive periodontal therapy.[9]
3. Localized re-infection can be either due to inadequate plaque control or the formation of the bacterial nidus.
4. Usually, furcation sites or sites with difficult access are re-infected.

Part-IV

1. Polishing of entire dentition to remove any remaining soft deposits, followed by fluoride application.[10]
2. Fluoride application to decrease chances of caries
3. Refer for prosthetic, orthodontic, or restorative treatment
4. Schedule for recall interval
5. Oral hygiene update

On the basis of severity of gingival or periodontal disease, oral hygiene maintenance by the patient and compliance. Merin in 1996 proposed classification for recall interval for different types of patients as shown in the following table.[11]

Classification	Recall interval	Characteristics
First-year	3 months	Routine scaling and root planing and uninterrupted healing
First-year	1-2 months	It is usually indicated in cases with: • Poor crown root ratio • Furcation involvement • Tooth with questionable prognosis
Class A	6 months to 1 year	It is in patients with excellent result, well maintained for 1 year or more • No gingival pockets • No occlusal problem • Minimal calculus • Good oral hygiene
Class B	3-4 months	Good result maintained for 1 year or more • Presence of gingival pockets • Occlusal problems • Presence of moderate calculus • Bleeding on probing • Some teeth with less than 50 % bone support • Poor oral hygiene • Recurrent dental caries • Smoking
Class C	1-3 months	Poor results • Presence of gingival pockets • Occlusal problems • Presence of heavy calculus • Bleeding on probing • Poor oral hygiene • Recurrent dental caries • More teeth with less than 50 % bone support • Periodontal surgeries required • Severe occlusal problems

Role of the patient in Supportive Periodontal therapy

Although motivation plays a key role to carry supportive periodontal therapy other factors should also be considered such as the method should be simple to carry, easy to understand, accommodates the patient's needs. It includes:

1. Toothbrush: either electric or manual along with interproximal cleaning with interdental brushing, dental floss, and tongue cleaner.
2. Fluoride gels: either on toothpaste or in custom fabricated trays.
3. Oral irrigators: includes anti-microbial solutions or mouthwashes.[12]

Supportive Periodontal Therapy in Orthodontic Patient[13]

	Oral Hygiene	Trauma from Occlusion	Periodontal diseases
Before treatment	The instruction is given to the patient regarding the maintenance of oral hygiene	Eliminated, if any present	If any sign of inflammation, start with scaling or root planning or any flap treatment, if required
During treatment	Constant motivation to the patient to follow proper oral hygiene, band to be placed away from gingival sulcus to have an effective cleaning	Fremitus removed	The patient is seen for oral prophylaxis
After treatment		Tooth mobility monitored 6 months after tooth mobility	The patient kept on maintenance and re-evaluated 6 months after tooth movements

Supportive Periodontal Therapy in Patient with Gingivitis or Periodontitis[14]

Instruction to the patient to maintain oral hygiene

⇩

Removal of supra or sub-gingival calculus

⇩

Use of mouthwashes to add on the benefits of mechanical debridement

⇩

Removal of any plaque retentive factors such as overhanging crowns, ill-fitting dentures, narrow embrasures

⇩

Once active therapy is completed, periodic follow up

Supportive Periodontal Therapy for Patient with Implants[15]

It is also known as Cumulative Interceptive Supportive Therapy (CIST). It involves three basic guidelines that need to follow:

1. Radiographic examination
2. Clinical examination
3. Supportive therapy for infection control

All these factors help to evaluate and intercept the progression of Peri-Implant diseases. The therapy includes 4 steps:

Step 1: Antiseptic Therapy with protocol A
Step 2: Antibiotic therapy with protocol A + B
Step 3: Antibiotic therapy with protocol A + B +C
Step 4: Antibiotic therapy with protocol A + B +C+ D

Protocol	Periodontal Probing depth	Bleeding on probing	Bone loss	Treatment
A	<3mm	Negative	Negative	Mechanical debridement
	>3mm	Positive	Negative	Mechanical debridement + Polishing
B	4-5mm	Positive	Negative	Antibiotic Cleaning 0.1 % Chlorohexidine + Gel twice a day for 3-4 weeks
C	>5mm	Positive	Notable cratering (< 2mm)	Systemic Antibiotics
D	>5mm	Positive	Bone loss >2mm	Regenerative Surgery

In 2007, a study was conducted by Kasaj et.al states that chlorohexidine chip can be an adjunctive therapy to scaling and root planing. And sever as a beneficial effect on moderate to severe chronic periodontitis.[16]

Conclusion

Periodontal maintenance therapy both patient and dentist work hand-in-hand, making it easier to control the circumstances that leads to inflammatory diseases. But still, sometimes complications can be seen such as dental caries, root sensitivity, endodontic lesions, and periodontal abscess.[17] The key to success is a constant reminder to the patient regarding the importance and advantage of long term maintenance in preventing periodontal and peri-implant disease progression.

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