**Tri Immunophasic Periodontal Therapy (TIP)**

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**ABSTRACT**

Periodontitis is multifactorial origin inflammatory disease which represents with destruction of periodontium due to upregulation of immune response which causes loss of attachment and bone loss. William Hoisington had developed technique Tri- immunophasic periodontal therapy (TIP) for the treatment of periodontal disease without invasive procedure. As human body has the capacity of healing and repair by itself after any injury same way these technique predicts the same phenomenon in periodontal diseases healing and repair. It works by influencing the disease etiological factors and aiding healing by 3 immune phases. a) vigilant readiness, b) defense phase, c) repair and regeneration. It alters the pathogenesis and disease progression by changing the defensive phase against bacteria and other microorganisms into a regeneration phase to achieve a new attachment. TIP periodontal therapy methods are: Bone One Session Treatment, Controlling occlusal Forces, Oral Hygiene reinforcement with adjuvant modalities, Life Style modification, enhancing nutrition and Exercise.

**Keywords:** Periodontitis, periodontal therapy, BOST.
INTRODUCTION

Advances in periodontal science and practice over the last few years have changed the understanding of periodontal diseases and have opened new, prospects for both non-surgical and surgical therapy of periodontal diseases.. The prime concern in any periodontal treatment is a control over the errant microorganisms and resolution of soft tissue inflammation and restoration of lost alveolar support.

Traditional treatment modalities of periodontal diseases are non-surgical and surgical treatment. Non-surgical includes scaling, root planning, home oral hygiene practices and surgical treatment includes invasive periodontal incision flap. The healing is slow and incomplete, both these methods are invasive and recurrence is high.

US periodontal therapist William Hoisington has commenced a new technique in treating periodontal disease which solves the issue of periodontium in an entirely new way. Tri-Immuno - Phasic periodontal therapy, otherwise known as TIP, allows practitioners to go up to the crest of the alveolar bone and destroy anaerobic bacteria – aggressive pathogens which not only causes degeneration of alveolar bone and gingiva, but also penetrate the body’s circulation and contribute to systemic complications such as coronary heart disease, osteoporosis, pre term low birth weight and infertility.

TIP periodontal therapy methods are:

1. Bone One Session Treatment
2. Controlling occlusal Forces
3. Oral Hygiene reinforcement with adjuvant modalities
4. Life Style modification
5. Enhancing nutrition and Exercise.

The tri-immuno –phasic periodontal therapy, hypothesized that the body is capable of healing the periodontium as similar to that of the other forms of repair. When appropriate conditions are achieved damaged periodontal bone can heal as like other bones in the human body.
IMMUNE SYSTEM PHASES

TIP periodontal therapy influence the local and personal factors which modify periodontal disease progression and improve the condition for healing by aiding the body in all three immune phases. The three immune phases are:

1. Vigilant readiness
2. Defense phase
3. Repair and regeneration.

1) BONE ONE SESSION TREATMENT (BOST)

BONE ONE SESSION TREATMENT (BOST) It is an aerobic treatment that eliminates periodontal disease in the deepest pockets and supporting alveolar bone. A typical BOST treatment of full mouth takes 4 to 5 hours during one day period. Bost minimize damage to the gingiva, bone, and periodontal apparatus during treatment. It uses technique called stretch flap. This stretch flap technique allows access to the deepest areas of the roots and the surface of the bone, without giving incision.

STRETCH FLAP TECHNIQUE

FIRST STEP: In this step universal 4R-4L curette is inserted inside the sulcus, where working end facing towards tooth surface. A slight pressure is applied on tissue to begin stretching while removing superficial plaque and calculus.(Fig 1).

SECOND STEP: The direction changed to a circumferential motion starting at the corner to mobilize the tissue and avoid pulling the papilla free and in essence creating an incisional flap.(Fig 1).

THIRD STEP: Here the curettes are inverted to allow the rounded tip of the curettes to plyasty the surface of the bone and remove any attached granulation tissue or degenerated attachment. The goal is to achieve smooth, regular bone surface and fresh bleeding to flush out bacteria and toxins from the porosities.(Fig 1).
Fig 1 - Stretching of tissue as instrument advances in deeper surface.

HEALING AFTER BOST

After the bone one session treatment the clot that is firmly attached to the clean bone serves as a scaffold (Fig 2). The stem cells can move along it and up the root surfaces at the rate of 0.5mm per day for eight days and thicken the layer on the clot. To permit this activity it is also important to keep the epithelial attachment away from the roots. This is done with the oral hygiene technique that keeps the pocket open and also inhibits the reformation of the sticky layer (yellow cone at the top). As healing time increases, the pockets gradually fill in from the bottom with very dense, partially mineralized connective tissue in about four to six weeks, and finally will become acellular (Fig 3). The final healed result with the bone crest cortical layer reformed and the disappearance takes about nine months. This healing is visible on X-rays.²,³,⁴

Once this initial healing at four to six weeks has happened, whatever further treatment is required, whether selective surgery, implants, orthodontics, restorative or prosthetic dentistry is carried out.²,³,⁴

Fig 2 - Clot serves as a scaffold.
ADVANTAGES OF AEROBIC PERIODONTAL TREATMENT:

1. No incisions or sutures mean less discomfort.
2. Hygiene restarts the next day.
3. With incisional flaps, circulation is cut off to the bone surface and it is exposed to the air, so surface bone cells die and a millimeter more of bone is lost. When the tissue is just stretched, the bone surface stays covered with fluid, is protected and retains its circulation. No further bone is lost and another source of discomfort is eliminated.
4. The gingival tissue tends to stay near its original height, thus preserving aesthetics and minimizing sensitivity.
5. No wound from cutting and bone surface death means the immune reaction is fast regeneration healing, rather than slow wound healing with scarring and bacterial colonization of dead tissue (by spirochetes). With regeneration healing, inflammation quickly leaves. Swelling, pressure and discomfort decrease rapidly. Teeth tighten.
6. Any minor retreatment later on is easy by stretching open again.
7. Teeth with severe bone loss, considered hopeless or too late for flap surgery, often are saved because they tighten up after BOST as actual gain in bone height and density (with reappearance of the dense cortical bone layer) occurs.
8. Stretching tissue is faster and not traumatic, the whole mouth treatment is over in one appointment and reinfection is reduced.

9. If any aesthetic, crown and bridge work or implants need to be carried out, they can commence sooner since the healing is quicker and a healthy base is established.

10. Since the procedure is not traumatic, just long, no disagreeable pain medications are needed, usually only a pain killer the night of the procedure. No work need be lost. Sensitivity is much reduced also, so it is easy to keep a positive attitude toward the process, aiding the healing.

11. There is less need for follow-up frequent cleaning.

12. The healed results may be more durable due to a more reliable attachment. Complete healing with tight teeth, a solid bite, no bleeding, and healthy, dense, springy, tissue, with no pockets, relieves psychological stress (worrying if the disease is getting worse or if pathological bacteria are getting into the bloodstream). The elimination of inflammation also seems to greatly reduce clenching and grinding of teeth that is like an ‘itching’ or effort to force out excess stagnant blood. Often niteguards can be eliminated.²

2) CONTROLLING THE OCCLUSAL FORCES

Objective: Controlling the occlusal forces, prevention of tooth mobility and further tissue damage.

With weakened periodontium normal occlusal forces become traumatic and lead to shift of bite. Treatment includes enameloplasty, coronoplasty, and occlusal splint which will redistribute the forces among all the teeth.¹

3) NEW ORAL HYGIENE ROUTINE

Aerobic oral hygiene kit (Perio-aid) that is created specifically to clean the area under gingiva and eliminate the disease causing anaerobic bacteria in deep pockets and into root concavities where brush and floss cannot reach should be advised.¹

4) LIFE STYLE, NUTRITION AND EXERCISE

Vitamin C and zinc are most important. Smoking is avoided as smoking reduces circulation and depresses certain immune cells. Exercise should be advised because it increases circulation to bring in building blocks and oxygen to the tissues as well as the vitamins and minerals that permit proper uptake.¹
CONCLUSION

TIP periodontal therapy sets up all the conditions where the body can get out of the defensive phase against bacteria and other microorganisms and into a regeneration phase to heal back a new attachment.

REFERENCES

1) Dr. Kumar Y P, Dr. Kalaivani V, Dr. Rajapandian K , Dr. Malakar M, tri-immuno phasic periodontal therapy, WJPR, 2016; 5(9): 356-60.

