ACUTE PHASE OF HEALING - LASER ASSISTED POCKET DEBRIDEMENT VERSUS CONVENTION HAND INSTRUMENTATION

Prof. dr. Ana Minovska

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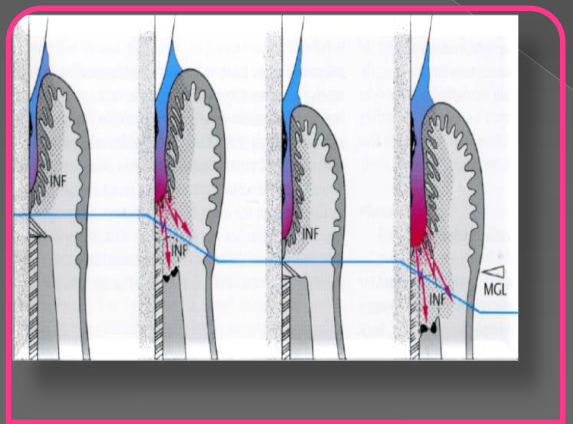
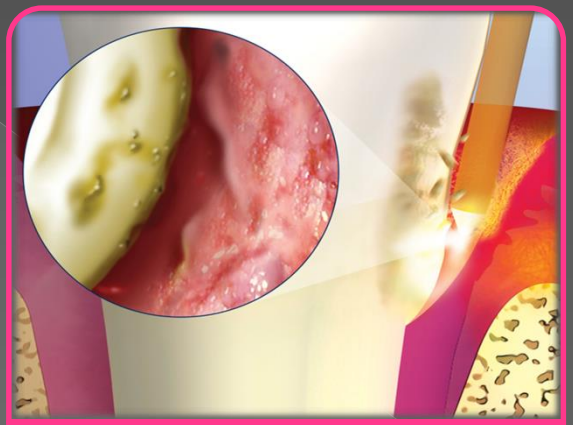
1



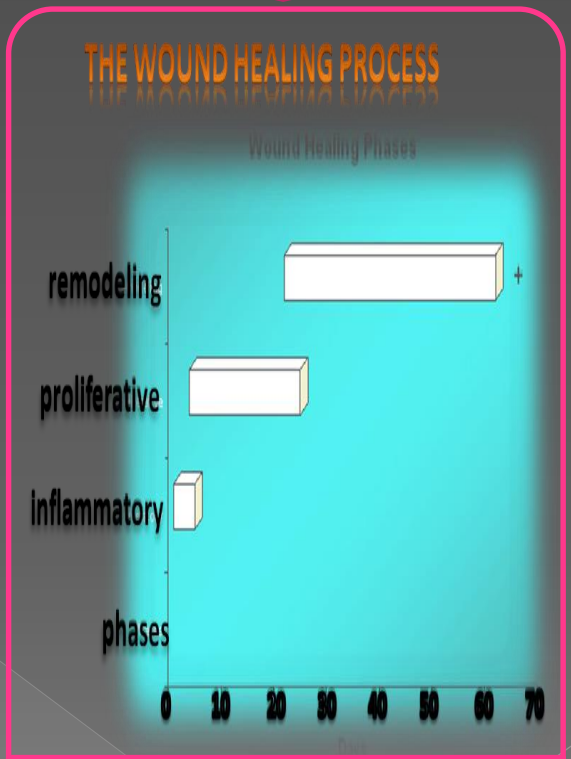
Periodontal pocket

2

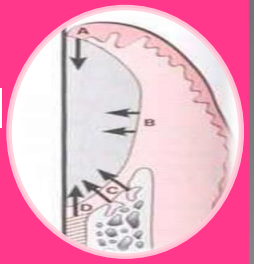


ER:YAG laser in periodontal treatment

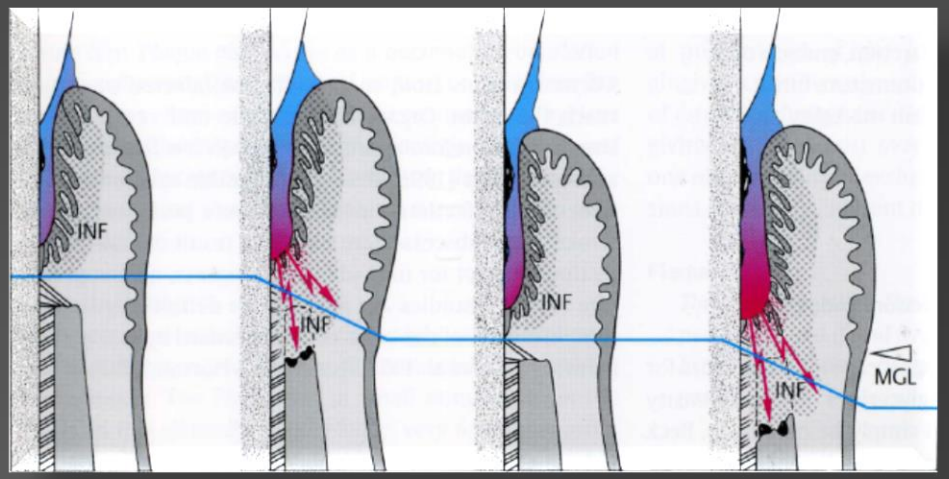
3



Periodontal healing



1. Periodontal pocket



1 **PLAQUE**
Pathogenic microorganisms

Antigens
LPS
Virulencef actors

PMN
Antibodies

2 Inflammatory Immune response

Cytokines

Prostanoids

MMPs

3 Connective tissue and bone metabolism

Clinical Symptoms of disease

4 Non-genetic risk factor

5 Genetic factors

Modified from R. Page, K Kornman, 1997

2. ER:YAG laser in periodontal treatment

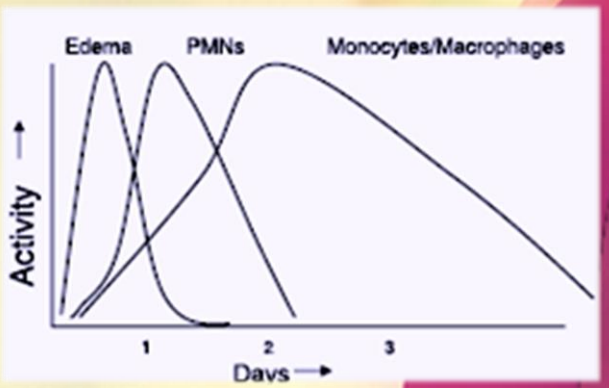
THERE ARE MABY **HUNDREDS PUBLICATION** ABOUT EFFECTS OF **ER:YAG LASER COMPARED TO CONVENTIONAL PERIODONTAL** TREATMENT, BUT

COMPARISON BETWEEN VARIOUS CLINICAL STUDIES OR BETWEEN LASER AND CONVENTIONAL THERAPY IS DIFFICULT AT BEST AND LIKELY IMPOSSIBLE AT THE PRESENT:

- DIFFERENT LASER WAVELENGTHS;
- WIDE VARIATIONS IN LASER PARAMETERS;
- DIFFERENCES IN EXPERIMENTAL DESIGN;
- LACK OF PROPER CONTROLS;
- DIFFERENCES IN SEVERITY OF DISEASE AND TREATMENT PROTOCOL;
- AND MEASUREMENT OF DIFFERENT CLINICAL ENDPOINTS.
- INSUFFICIENT REPORTING OF PARAMETERS THAT, IN TURN,
  DOES NOT ALLOW CALCULATION OF ENERGY DENSITY;

3. Periodontal healing

RESOLUTION OF ACUTE INFLAMMATION



Since no studies have reported the effects of **low intensity level Er:YAG** irradiation on acute phase of healing, after pocket therapy, **the aim of the present study** was to provide **Immunohistochemical and histomorphometric analysis** of acute phase of wound healing following laser assisted pocked debridement compared to conventional hand instrumentation

Material and Method

For the purpose of the study a **split-mouth design** was performed. A total of 15 pairs of contralateral single- and multirooted teeth were included. Each tooth of each contra lateral pair had to exhibit

e aspect of the tooth.

Determination of : Myeloperoxidaza, CD68 , CD3 ,CD20 ,Vimentin, CD34.

The tissue biopsy was taken from the soft tissue wall of the periodontal pocket 24 and 72 hour after preformed periodontal treatment.

CONCLUSIONS

HIGHER CD34 EXPRESSION (ENDOTHELIAL PROLIFERATION) IN THE LASER TREATED GROUP AFTER 72H DESPITE LESS EXPRESSED INFLAMMATORY RESPONSE IN THE LASER TREATED TISSUES.
CAN BE ADDRESS TO LASERS TRANSFER OF ENERGY TO SURROUNDING TISSUES IN T

FURTHER RESEARCH IS STILL REQUIRED FOR THE INTERACTION OF THESE IMMUNE CELLS, THEIR SECRETORY PRODUCTS, AND OTHER WOUND ELEMENTS BEFORE OUR UNDERSTANDING OF THE MECHANISM OF WOUND HEALING, AFTER LOW –LEVEL ER:YAG IRRADIATION, IS COMPLETE.

Fig. 1 (Magnification x40) Inner periodontal pocket area treated with curette.

IN THE PRESENT STUDY WE DEMONSTRATED THAT THE H
GINGIVAL CONNECTIVE TISSUE AFTER LOW-LEVEL ER:Y
CHARACTERIZED BY LESS MARKED INFLAMMATION.
AS RESULT OF A VERY NARROW ZONE OF THERMAL MI
WITH MINIMAL COLLATERAL THERMAL MECHANICAL D

Fig. 1a Inner periodontal