



شبكة المعلومات الجامعية
التوثيق الإلكتروني والميكروفيلم

بسم الله الرحمن الرحيم



HANAA ALY



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شبكة المعلومات الجامعية التوثيق الإلكتروني والميكروفيلم



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جامعة عين شمس

التوثيق الإلكتروني والميكروفيلم

قسم

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HANAA ALY

Efficiency of Diode Laser in Control of Post-endodontic Pain and Healing of Periapical tissues

(A Randomized Clinical Trial)

Thesis submitted to the Faculty of Dentistry, Ain Shams University for partial fulfilment of the requirement of the Doctorate degree in Endodontics.

By

Hend Mohammed Hamdy Ismail

B.D.S 2008, M.Sc. 2015 Ain Shams University

Supervisors

Prof Dr. Ehab Hassanien

Professor of Endodontics Ain shams university Faculty of
Dentistry

Ain shams university

Ass. Prof Maram Obeid

Associate Professor of Endodontics Faculty of Dentistry
AinShams University

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بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

﴿قَالُوا سُبْحَانَكَ لَا عِلْمَ لَنَا
إِلَّا مَا عَلَّمْتَنَا إِنَّكَ أَنْتَ الْعَلِيمُ
الْحَكِيمُ﴾

(سورة البقرة: الآية 32)

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From the bottom of my heart Thank you for everything

Dedication

*I would like to dedicate this thesis to
My Late Father ...I miss you every single day*

*My Mother ...Thank you for being my support
systemI wouldn't be here without you*

*My husband Thank you for always being my
backbone and my best-friend*

*To Jana and Talia ...You are the reason I smile
everyday ..I love you*

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List of Abbreviations

LASER	<i>Light Amplification by Stimulated Emission Of Radiation</i>
NSAID	<i>Non Steroidal anti-inflammatory drugs</i>
LLLT	<i>Low Level Laser Therapy</i>
LAI	<i>Laser activated irrigation</i>
CBCT	<i>Cone Beam computed tomography</i>
CO₂	<i>Carbon Dioxide</i>
MPDS	<i>Myofascial Pain disfunction syndrome</i>
VAS	<i>Visual analogue scale</i>
TMD	<i>Temporomandibular disorder</i>
CGRP	<i>calcitonin gene-related peptide</i>
GCF	<i>Gingival crevicular fluid</i>
PUI	<i>passive ultrasonic irrigation</i>
EDTA	<i>Ethylene Diamine Tetra-acetic acid</i>
MPDS	<i>Myofacial pain disfunction syndrome</i>
DL	<i>Diode Laser</i>
PSD	<i>Pseudo-laser disinfection</i>
SEM	<i>Scanning electron microscope</i>
DICOM	<i>Digital imaging and communication in medicine</i>
PIPS	<i>Photoinitiated photoacoustic streaming</i>
NaOCL	<i>Sodium hypochlorite</i>
EA	<i>Endoactivator</i>
RCT	<i>Randomized controlled Trial</i>
CONSORT	<i>Consolidated Standards of Reporting Trials</i>
PA	<i>Periapical</i>
SD	<i>Standard deviation</i>
MPQ	<i>McGill pain questionnaire</i>
SF-MPQ	<i>Short form McGill Questionnaire</i>
BPQ	<i>Wisconsin brief pain questionnaire</i>
VRS	<i>Verbal rating scale</i>
WBS	<i>Wong-Baker Faces Pain Rating Scale</i>
ATP	<i>Adenosine triphosphate</i>

Introduction

Introduction

Endodontic treatment in modern dentistry has increasingly become important. Patients ask dentists to save their teeth and expect the results would be permanently accepted, with no further complications nor side effects.

Postoperative pain is one of the most common complications of endodontic treatment. It can lead to emergency dental visits. The postoperative pain caused by RCT and is related to an inflammatory response in the periapical tissue. This response triggers nociceptors through inflammatory mediators, such as prostaglandins, leukotrienes, bradykinin, and serotonin, which results in pain after treatment. ⁽¹⁾

Several treatment strategies have been suggested for the management of post-endodontic pain, most of them are pharmaceutical treatments, prescribed as prophylactic medications and postoperative analgesics. Unfortunately, the administration of analgesics due to too much pain could lead to serious complications ⁽²⁾ for example Aspirin leads to heartburn, stomach ulcers or vomiting gastrointestinal bleeding, as well allergic reactions that have been documented. The medical condition of some patients as well the drug interaction could also act as an obstacle against prescribing medications.

The medical condition of some patients as well the drug interaction could also act as an obstacle against prescribing medications. NSAIDs