



**EVALUATION STUDY OF EFFICACY & SIDE EFFECTS
OF INTENSE PULSED LIGHT “IPL” AND ALEXANDRITE
“ALEX” LASER IN FACIAL HAIR REMOVAL OF
EGYPTIAN PATIENTS (SKIN TYPES III, IV & V)**

Thesis

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دراسة تقييمية لفعالية والأعراض الجانبية لإزالة الشعر في الوجه
باستخدام الوميض الضوئي المكثف والليزر اللاكسندريتي في
المرضى المصريين من ذوى الجلد من نوعية فيتزباتريك ٣ ، ٤ ، ٥

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SUMMARY

Lasers and Intense Pulsed Light “IPL” sources have become the epilating tools of choice, although there is still controversy over which is the best photoepilation system. The definition of “permanent hair removal and efficacy of IPL & Alexandrite laser” are still not clearly specified.

In order to gain a more comprehensive understanding of how laser hair removal procedures work one must have knowledge of relevant hair microanatomy, physiology and growth cycles associated with growth of hair on the body.

Only few publications exist about the side effects in treatment with lasers and even fewer reports are available on IPL treatment. In treatment with lasers, the most important parameter is the selection of laser type in order to achieve the best therapeutic results and avoid negative side effects.

The aim of the current study is to examine efficacy and side effects of IPL versus ALEX. Laser in facial hair removal in Egyptian patients (Skin types III, IV & V).

The study period started from March 2008 to the end of August 2008. Thirty eligible patients presenting at Dermatology clinic, Ain Shams University Hospital, for facial hair photo-epilation were selected. All patients satisfied the exclusion and inclusion criteria.

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Contents

Acknowledgement	III
Contents	IV
List of Tables	VIII
List of Figures.....	X
INTRODUCTION	1
AIM OF THE WORK	5
REVIEW OF LITERATURE	6
Chapter 1	6
Laser and IPL	6
<i>Definition of Laser</i>	6
<i>Definition of IPL</i>	6
<i>Laser Evolution</i>	6
<i>Historical Review</i>	7
Historical Aspects of Laser and Light Based Hair Epilation.....	8
<i>Physics Background of Laser</i>	9
The process of lasing	9
<i>Laser System</i>	12
1-Pumping System.....	12
2-Lasing Medium.....	12
3- Optical Cavity.....	13
<i>Laser Difference from Ordinary Light</i>	13
1. Monochromaticity	14
2. Coherence	14
3. Collimation	14
4. Brilliancy	14
<i>Laser Biology</i>	15
1- Wavelength.....	15
2- Spot Size.....	16
3- Fluence	17
4- Cooling	18
5- Chromophore.....	19
Chapter 2	22
HAIR AND SKIN	22
Hair Morphogenesis, Structure and Physiology	23
Morphogenesis of Hair Follicle	23
1- Lanugo Hairs	26
2- Vellus Hairs	26

3- Terminal Hairs.....	26
<i>Growth Centers of Hairs</i>	26
<i>Hair Follicle Cycle</i>	29
<i>Rate of Hair Growth</i>	33
<i>Hair Pigmentation</i>	34
Introduction.....	34
Types of melanin	34
<i>Skin Phototype</i>	37
<i>Hair Removal Methods</i>	37
Traditional Methods of Hair Removal.....	37
Newer Hair Removal Methods	41
Chapter 3	43
HAIR REMOVAL AND LASER BIOLOGY	43
Facts and Controversies	44
Permanent and Persistent Photoepilation	45
Mechanism of Photoepilation	47
Effect of Laser on Hair Cycle Internal Biologic Clock	48
Histological Data Summarize the Effect of Laser on Hair Removal	51
Theories of Hair removal.....	52
The First Theory	52
The Second Theory.....	52
Dynamics of Photoepilation Mechanisms of Hair Removal	54
1- Selective Photothermolysis Theory	55
2- Extended Selective Photothermolysis Theory.....	56
Optimal Retreatment Time	58
General Side Effects After Laser Assisted Hair Removal	59
1- Erythema	61
2-Hair Induction Paradoxical Effect (Paradoxical Hypertrichosis).61	
3-Hypopigmentation or Vitiligo Like and Hyperpigmentation	62
4- Superficial Crust and Vesicle Formation	63
5- Scarring	63
6- Some Rare Side Effects	63
7- Iatrogenic Side Effects	64
Different Types of Laser & light Used in Hair Epilation	65
1- Intense Pulsed Light System (IPL).....	66
Adverse Effects.....	70
2- Normal mode Alexandrite Laser (755 nm)	71
Adverse Effects.....	72

3- Normal-Mode Ruby Laser (694 nm)	74
Adverse Effects	74
4- Diode Lasers (800 nm)	75
Adverse Effects	77
5- Long-Pulsed Nd:YAG Laser (1064 nm)	78
Adverse effects	78
6-Combination of Radio Frequency and Laser or Light Devices	79
Adverse Effects	80
Subjects and Methods	81
Patients' Selection	81
Inclusion Criteria	82
Exclusion Criteria	82
Methods	83
Evaluation Method	85
Objective Method	85
Hair Count Analysis by Computer Assisted Grid	85
Side Effects Report	86
Subjective Method	86
Procedures	87
<i>Used Technique</i>	87
Data Management and Statistical Analysis	89
Clinical Results	91
(A) <i>Results of Objective Methods</i>	92
<i>Efficacy Evaluation</i>	93
<i>Side Effects Evaluation</i>	95
Erythema	95
Paradoxical Hair Induction	98
Hyperpigmentation & Hypopigmentation	100
(B) <i>Results of Subjective Method</i>	102
<i>Patient Satisfaction by Investigators Global Scoring</i>	102
DISCUSSION	106
Details	107
(A) <i>Objective Results Discussion</i>	107
<i>Efficacy Evaluation</i>	107
<i>Side Effect</i>	110
Erythema	110
Paradoxical Hair Induction	112
Hyperpigmentation & Hypopigmentation	114
(B) <i>Subjective Results Discussion</i>	116

<i>Patient Satisfaction</i>	116
I- Conclusion	118
II- Recommendation	118
SUMMARY	120
Recommended Set of Rules and Regulations for the Implementation of Laser Systems for Personnel, Treatment Rooms, Technical Equipment, and Hygiene	123
<i>A- Requirements of Personnel</i>	123
Certification in Laser Use	124
Certification in dermatologic laser therapy	124
<i>B- Requirements of Equipment</i>	124
<i>C- Requirements of Laser Safety</i>	125
1- A Signage Laser Warning Sign	125
2- Eye Protection	126
<i>D- Hygiene</i>	128
Procedures of Photoepilation	129
REFERENCES	130

List of Tables

Table 1: Landmarks of Laser history. Dates correspond to the year of FDA approval or first publication	8
Table 2: Hair follicle targeted for effective laser hair removal , distribution and density of the hair follicles & body area determination.....	31
Table 3: Skin Phototype	37
Table 4: Light based photoepilation laser systems	65
Table 5: Schedule of Sessions and evaluation periods in relation to the study.	84
Table 6: Investigator global assessment of facial hair response compared with baseline according to Hamzavi.....	87
Table 7: Patients skin types.	91
Table 8: Efficacy evaluation analysis of Alex and IPL.....	94
Table 9: Summary table of Erythema side effects comparison in regards to Alex Group versus IPL Group.....	96
Table 10: Erythema side effect in relation to skin type groups	97
Table 11: Summary comparison table of hair induction side effects with regard to Alex versus IPL Group.....	99
Table 12: Hair induction in relation to skin type group.	99
Table 13: Summary comparison table of Pigmentation side effect with regard to Alex versus IPL Group.....	101
Table 14: Summary table of correlation between skin types groups of Alex & IPL.	102

Table 15: Comparison results with regard to patient satisfaction between Alex Group versus IPL Group using t test and Chi -value.	104
Table 16: Comparison results of patient satisfaction between skin types groups and Alex & IPL using patient satisfaction ratio.....	105

List of Figures

Figure 1: Creation of laser light, as electrons are excited, they move to a higher energy level	10
Figure 2: Stimulated emission of photons in parallel and in phase.	10
Figure 3: Lasing process illustrating photon cascade.....	12
Figure 4: Laser differences than ordinary light.....	15
Figure 5: Laser wavelength & skin penetration	16
Figure 6: Cooling devices, contact (left) and dynamic cooling (right)	19
Figure 7: Absorption spectra of major skin pigments at concentrations, comparative absorption spectra for Oxyhaemoglobin (Hb), melanin and water alongside the electromagnetic spectrum, showing common laser wavelengths and their depth of skin penetration	20
Figure 8: Follicular morphogenesis.	25
Figure 9: Hair Cycle	30
Figure 10: Hair color and biochemistry.	36
Figure 11: The pigmented follicular melanocytes	50
Figure 12: The bulge follicle and bulbar melanocytes	50
Figure 13: Hair count of Alex and IPL after treatment sessions.....	94
Figure 14: Signage laser warning sign	126
Figure 15: Eye protection goggles	127
Figure 16: Eye shields, The appearance of the various sizes of corneal eye shields used to protect the eye during laser surgery in the periorbital area	128

Figure 17: Eye shields and eye goggles worn over the eyelids for laser surgery not being performed in the immediate periorbital area	128
Figure 18: Eye shields during laser surgery	128

List of Abbreviations

Abbreviation	Description
ALEX	Alexandrite
ASAPS	American Society of Aesthetic Plastic Surgery
CIS	Computer Imaging System
DP	Dermal Papilla
FDA	Food and Drug Administration
HS	Hair Shaft
IPL	Intense Pulsed Light system
IRS	Inner Root Sheath
LASER	Light Amplification by Stimulated Emission of Radiation
O.D	Optical Density
ORS	Outer Root Sheath
PDT	Photo Dynamic Therapy
RF	Radio Frequency
S.P.S.S	Statistical Package for Social Sciences
TDT	Thermal Damage Time
TRT	Thermal Relaxation Time

INTRODUCTION

Hair removal is the third cosmetology action in USA. The patient's demand for this procedure is nevertheless very high, especially in mediterranean countries which are more associated with facial hirsutism and not only restricted to cosmetic and aesthetic practice (*Toosi et al., 2006; Kulkin and Flash, 2010*).

Lasers and Intense Pulsed Light “IPL” sources have become the epilating tools of choice, although there is still controversy over which is the best photoepilation system. The definition of “permanent hair removal and efficacy of IPL & Alexandrite laser” are still not clearly specified (*Christian and Syrus, 2011*).

Electrolysis is the only permanent treatment so far considered in hair treatment. However, the practice of electrolysis lacks standardization. The regulations of the procedure vary among different centers. Shaving and depilation are the most commonly attempted initial options for facial hair removal. Although these methods are less expensive, they are temporary only (*Olsen, 1999; Marayiannis et al., 2003*).

There are few clinical studies directly comparing the efficacy of multiple hair removal systems for the same individual skin types. These studies evaluate the efficacy of popular systems for laser hair removal. Unfortunately, clinical studies regarding the efficacy and clinical safety of these procedures have lagged behind the actual widespread use of this modality all over the world. Also confusing is that many studies have included different anatomical locations with different growth cycles in the same study. Evaluation of the abilities of the different devices for hair reduction may be inaccurate unless exact hair follicle counting is provided. A Computer Imaging System (CIS) need to be used for this purpose (*Maziar et al., 2010*).

There is substantial evidence for laser and photoepilation, with a total of 43 identified controlled trials as of the beginning of 2009 (*Christian and Syrus, 2011*).

Light based photoepilation target chromophore is melanin in the hair bulb and outer root sheath zones of the hair follicle, while the competing chromophores are any other melanin containing components of the skin and other light absorbing components such as hemoglobin in blood vessels. Therefore, patients with darker skin types “III, IV and V” e.g. Egyptians, present a greater treatment risk. The photoepilation goal for those patients is to deliver the highest fluence to the hair follicles without causing injury to the epidermis, allowing
