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Efficacy and Safety of Diphenylcyclopropenone (DPCP) as a Depigmenting Therapy in Extensive Vitiligo

Thesis

Submitted for Partial Fulfillment of Master Degree
in ***Dermatology, Venereology and Andrology***

By

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Ain Shams University
2021

سورة البقرة الآية: ٣٢

Acknowledgments

First and foremost, I feel always indebted to ***Allah*** *the Most Beneficent and Merciful.*

I would like to express my heartiest acknowledgement to ***Dr. Marwa M. Abdel-Rahim Abdallah,*** *Professor of Dermatology, Venereology and Andrology, Ain Shams University, for her constructive suggestions, valuable guidance, and for her continuous support. I'm indebted to her for always being there to help and solve difficulties. I deem myself fortunate to work under her supervision.*

My deepest appreciation to ***Dr. Rania Mahmoud Elhusseiny,*** *Lecturer of Dermatology, Venereology and Andrology, Ain Shams University, for her concrete support and suggestions. I appreciate all her contribution and her great interest in this work. Her constructive comments will always be remembered.*

My biggest thanks of all go to my family for their remarkable patience and prayers, special thanks to ***Dr. Ahmed Nassar****, Assistant Lecturer of Dermatology, Venereology and Andrology, Ain Shams University for his inspiration of the idea of the research and thanks to doctors at* ***Al-Haud Al-Marsoud Hospital,*** *for their great help. Thank you for being there for me.*

Maysoon Asem Elsayed Abdelmotaleb

ABSTRACT

Background: Patients with extensive vitiligo who have residual pigmentation affecting exposed areas especially acral sites or patients with vitiligo universalis often seek depigmentation. At present, there is no ideal depigmenting therapy available. Possible options include; monobenzyl ether of hydroquinone (MBEH) cream, phenol, cryotherapy and Q-switched lasers. Diphenylcyclopropenone (DPCP) has been reported to rarely cause vitiligo as a side effect during the treatment of alopecia areata.

Aim: The aim of the present work is to evaluate the efficacy and safety of DPCP as a depigmenting therapy in extensive Vitiligo.

Patients and methods: This is a pilot single arm clinical trial study. Twenty patients with extensive vitiligo were recruited from the vitiligo outpatient clinic of Dermatology, Venereology and Andrology Department, Ain Shams University Hospitals. We used DPCP applied topically to residual pigmented patches (sensitization session then therapeutic sessions).

Results: Depigmentation occurred among 5 patients (25% of cases). Depigmentation occurred in different tested sites including the scalp, forearm and back. Itching and blister formation were the main side effects leading to intolerability to the DPCP treatment.

Conclusion: Cosmetic result of DPCP depigmentation was acceptable with no skin atrophy. Further studies could be done following other protocols using sensitization dose with less concentrations of DPCP to avoid patients' intolerance to the therapy.

Keywords: Diphenylcyclopropenone, Depigmenting Therapy, Extensive Vitiligo

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List of Abbreviations

Abb.	Full term
AA	*Alopecia areata*
AFV	*Acrofacial vitiligo*
ATPase	*Adenosine triphosphatase*
BB-UVB	*Broadband UVB*
bFGF	*Basic fibroblast growth factor*
BSA	*Body surface area*
CO_2	*Carbon dioxide*
CS	*Corticosteroid*
DNCB	*Dinitrochlorobenzene*
DPCP	*Diphenylcyclopropenone*
EMA	*European Medicines Agency*
EMLA	*Eutectic mixture of lidocaine*
FDA	*Food and Drug Administration*
GM-CSF	*Granulocyte-monocyte colony stimulating factor*
GWAS	*Genome-wide association studies*
HS	*Highly significant*
HSP	*Heat-shock proteins*
IFN	*Interferon*
IL	*Interleukin*
IQR	*Interquartile range*
KP	*Koebner's phenomenon*

List of Abbreviations *(Cont...)*

Abb.	Full term
KP	*Koebner phenomenon*
KTP	*Potassium-titanyl-phosphate*
MBEH	*Monobenzyl ether of hydroquinone*
MBEH	*Monobenzyl ether of hydroquinone*
MEL	*Monochromatic excimer lamp*
MMP-1	*Matrix Metallopeptidase-1*
N_2	*Nitrogen*
NB-UVB	*Narrowband UVB*
NB-UVB	*Narrowband ultraviolet B*
NK	*Natural killer*
NS	*Non significant*
NSV	*Non segmental vitiligo*
QSA	*Q-switched alexandrite*
QSR	*Q-switched ruby*
RNAi	*1A2 RNA interference*
ROS	*Reactive oxygen species*
S	*Significant*
SADBE	*Squaric acid dibutylester*
SCF	*Stem cell factor*
SV	*Segmental vitiligo*
TIM	*Topical immunomodulating macrolactams*
TNF	*Tumor necrosis factor*
Tregs	*T regulatory cells*