



شبكة المعلومات الجامعية
التوثيق الإلكتروني والميكروفيلم

بسم الله الرحمن الرحيم



MONA MAGHRABY



شبكة المعلومات الجامعية
التوثيق الإلكتروني والميكروفيلم



شبكة المعلومات الجامعية التوثيق الإلكتروني والميكروفيلم



MONA MAGHRABY



شبكة المعلومات الجامعية
التوثيق الإلكتروني والميكروفيلم

جامعة عين شمس

التوثيق الإلكتروني والميكروفيلم

قسم

نقسم بالله العظيم أن المادة التي تم توثيقها وتسجيلها
علي هذه الأقراص المدمجة قد أعدت دون أية تغيرات



يجب أن

تحفظ هذه الأقراص المدمجة بعيدا عن الغبار



MONA MAGHRABY



A Comparative study between topical 15% potassium hydroxide and 20% Salicylic acid in treatment of multiple palmoplantar warts

Thesis

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

Presented By

Wafa Sleman Elmoalef

M.B. B.CH. Sirte. Libya

Under Supervision of

Prof. Dr. Mahira Hamdy Elsayed

Professor of Dermatology, Venereology and Andrology

Faculty of Medicine - Ain Shams University

Dr. Rania Mahmoud Elhusseiny

Lecturer of Dermatology, Venereology and Andrology

Faculty of Medicine - Ain Shams University

Faculty of Medicine Ain Shams

University 2020

List of Contents

Page No.

Acknowledgment	i
List of abbreviations.....	ii
List of tables	iii
List of figures	iv
Introduction	1
Aim of the work	3
Review of literature	4
Chapter One: Warts	4
Chapter Two: Salicylic acid	23
Chapter Three: Potassium Hydroxide (KOH)	29
Patients and methods	35
Results.....	42
Discussion	68
Conclusion.....	74
Recommendations	75
Summary	76
References	79
Arabic summary	

Acknowledgment

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

I wish to express my deepest thanks, gratitude and appreciation to **Prof. Dr. Mahira Hamdy Elsayed**, Professor of Dermatology, Venereology and Andrology, Faculty of Medicine, Ain Shams University, for her meticulous supervision, kind guidance, valuable instructions and generous help.

Special thanks to **Dr. Rania Mahmoud Elhusseiny**, Lecturer of Dermatology, Venereology and Andrology, Faculty of Medicine, Ain Shams University, for her sincere efforts, fruitful encouragement.

Wafa Sleman Elmoalef

List of Abbreviations

<i>AD</i>	anno domini
<i>AIN</i>	Anal intraepithelial neoplasia
<i>CO₂</i>	Carbon dioxide
<i>DNA</i>	Deoxyribonucleic acid
<i>EV</i>	Epidermodysplasia verruciformis
<i>HIV</i>	human immunodeficiency virus
<i>HPVs</i>	human papillomavirus
<i>HS</i>	Highly significant
<i>KOH</i>	Potassium hydroxide
<i>MMR</i>	measles, mumps and rubella
<i>NK</i>	natural killer
<i>NS</i>	Non-significant
<i>PDT</i>	Photodynamic therapy
<i>PIN</i>	Penile intraepithelial neoplasia
<i>PPD</i>	Purified Protein Derivative
<i>RNA</i>	Ribonucleic acid
<i>S</i>	Significant
<i>SA</i>	Salicylic acid
<i>SD</i>	Standard deviation
<i>SPSS</i>	Statistical package for Social Science
<i>TCA</i>	Trichloroacetic acid
<i>USA</i>	United States of America
<i>VIN</i>	Vulval intraepithelial neoplasia

List of Tables

Table	Title	Page
1	Different types of warts	8
2	Different treatment regimens for warts	22
3	Demographic data and clinical characteristics of studied patients	43
4	Patients satisfaction score of treatment response among studied patients	44
5	Physician assessment of treatment response among studied patients	47
6	Comparison between salicylic acid and KOH treatment response	48
7	Evaluation of treatment side effects among studied patients	50
8	Correlation of salicylic acid treatment response with epidemiological and clinical characteristics of studied patients	51
9	Relation of KOH treatment response with epidemiological and clinical characteristics of studied patients	52
10	Correlation between physician assessment of treatment response for Salicylic acid therapy and patient satisfaction	53
11	Correlation between physician assessment of treatment response for KOH therapy and patient satisfaction	53

List of Figures

<i>Fig.</i>	<i>Title</i>	<i>Page</i>
1	Different types of warts	9
2	Dermoscopy of different types of warts	11
3	Histopathology of warts	14
4	Clinical recommendations in treatment of warts	21
5	Indications of salicylic acid use	25
6	Contraindications to salicylic acid peeling	26
7	Dermlite DL4 Dermoscope used in the study	37
8	KOH and Salicylic acid topical treatment	38
9	Distribution of warts among studied patients	43
10	Evaluation of patient satisfaction among studied patients	45
11	Physician assessment of Salicylic acid and KOH treatment response	47
12	Evaluation of Salicylic acid and KOH side effects	50
13	Correlation between physician assessment of treatment response for KOH therapy and patient satisfaction	54
14	Clinical and dermoscopic picture of 21 years old male patient complained of bilateral plantar warts for 2 years duration	56

15	Clinical and dermoscopic picture of 30 years old female patient complained of bilateral plantar warts for 2 years duration	58
16	Clinical and dermoscopic picture of 21 years old female patient complained of 2 plantar warts for 10 months duration	60
17	Clinical and dermoscopic picture of 12 years old female patient complained of right plantar warts for 5 months duration	62
18	Clinical and dermoscopic picture of 10 years old male patient complained of palmar warts 7 in number for 6 months duration	64
19	Clinical and dermoscopic picture of 19 years old female patient complained of plantar warts 8 in number for 2 years duration	66

Introduction

Warts are one of the most common benign neoplasms. It is the third most common skin disease in childhood and is probably even more common in adulthood. Warts are induced by over 100 types of human papillomavirus (HPVs) and can affect any race. They are subdivided into genital and non-genital types. Palmoplantar warts are one of the most common types of non-genital warts (***Boroujeni and Handjani, 2018***).

The treatment of warts includes destructive methods, such as topical medication, cryotherapy, electric cauterization, carbon dioxide laser and excision as well as immunotherapy. (***Wananukul et al., 2009***). The ideal treatment for warts should be effective, safe, result in less morbidity, and provide long-lasting immunity against the human papillomavirus (***Kandil et al., 2016***) .

Salicylic acid is the first-line therapy that many patients choose, since it is available over the counter. It is a keratolytic therapy with a mechanism of action that slowly destroys virus-infected epidermis and may cause an immune response from the mild irritation caused by the salicylic acid. It is prepared in concentrations from 10% to 60%. The

advantages of over-the-counter salicylic acid use include convenience, minimal expense, negligible pain and reasonable effectiveness. Disadvantages are that results require weeks to months of treatment, and the patient must strictly adhere to instructions. Side effects can include occasional contact dermatitis due to colophony in the collodion base. There is also a potential risk of systemic toxicity in children that can be avoided if lower concentrations or limited areas of treatment are used (***Thappa & Chiramel, 2016***).

Potassium hydroxide (KOH) is a strong metallic base; in medical practice, it is used in the diagnosis of fungal infection and bacterial vaginosis, treatment of genital wart, and treatment of molluscum contagiosum in children. The mechanism by which KOH solution is believed to be useful in the treatment of warts is mostly related to its keratolytic effect, which leads to the destruction of virus infected cells, and also probably because of its irritant effect, which induces an inflammatory response and inflammatory reactions, thus resulting in resolution of warts (***Kandil et al., 2016***). KOH is simple to use and suited for self-administration. Its side effects include erythema, swelling, burning, erosion and hypopigmentation (***Omidian et al., 2015***).

Aim of the work

To compare between the efficacy, safety and recurrence rate of topical 15% potassium hydroxide (KOH) and 20% Salicylic acid in the treatment of multiple palm plantar warts.

I: Warts

Warts are benign skin growths that appear when a Human Papilloma virus (HPV) infects the top layer of the skin. Warts can spread by contact with the wart or something that touched it. They are often skin-colored and feel rough, but they can be dark (brown or gray-black), flat, and smooth (*Cardoso and Calonje, 2011*).

Epidemiology:

Warts are a common medical problem, especially in Whites. The estimated current rate of non-genital warts among the general population is 1–13%. They are more common among young people. Estimated rates of genital warts in sexually active women are 12%. Warts have been described at least as far back as 400 BC by Hippocrates (*Bope et al., 2015*).

- **Frequency:** Warts are common worldwide and affect approximately 10% of the population. In school-aged children, the prevalence is as high as 10% to 20%. They are more common among immunosuppressed patients and meat handlers.

- **Age:** Warts can occur at any age. Although rare in infancy and early childhood, prevalence increases among school-aged children and peaks at 12 to 16 years.
- **Race:** Warts are twice as common in Whites as in Blacks or Asians.
- **Sex:** The male-to-female ratio is approximately equal (*Kumar and Warren, 2017*).

Etiology:

Common warts are caused by the human papillomavirus (HPV). The virus is quite common and has more than 150 types. Some strains of HPV are acquired through sexual contact. Most forms, however, are spread by casual skin contact or through shared objects, such as towels or washcloths. The virus usually spreads through breaks in skin, such as a hangnail or a scrape. Biting nails also can cause warts to spread on fingertips and around nails. Each person's immune system responds to the HPV virus differently, so not everyone who comes in contact with HPV develops warts (*Kermott et al., 2017*).

Kids and teens get more warts than adults because their immune systems haven't built up defenses against the many