Comparative study of clinical efficacy and effect on immune response of intralesional tuberculin (PPD) and intralesional measles, mumps, rubella (MMR) vaccine in treatment of multiple warts

Thesis

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رسالة

توطئة للحصول على درجة الماجستير في الأمراض الجلدية و التناسلية وأمراض الذكورة

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Summary

Warts are caused by Human Papilloma Virus (HPV), a double stranded DNA virus. Warts have a variety of clinical manifestations depending on the viral type and site and are usually treated by a wide variety of methods including cryotherapy, surgical excision, podophyllin, bleomycin and various lasers. Each mode of therapy has its own complications and failure rates.

The treatment of patients with multiple, recalcitrant or recurrent verrucae continues to be a formidable task for both primary care physicians and dermatologists. Previous mentioned methods are not always successful and may be associated with adverse events. Even when existing warts are successfully eradicated, patients may develop new warts in other areas.

There are new trends towards the use of immunotherapy in treatment of warts, as the immune system seems to play an important role in the control of warts infection. Although the exact mechanisms are unclear but most evidences suggest that cell mediated immunity plays an important role in control of HPV infection as the incidence of warts increases in subjects with cell mediated immune defects e.g (HIV infection patients, malignant diseases. etc….).

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List of Abbreviations

>	More than
<	Less than
≥	More than or equal
%	Percent
α	Alpha
β	Beta
µg	Micro gram
µl	Micro liter
ALA	Amino-laevulinic acid
BCA	Bichloroacetic acid
BCG	Bacille calmette-guerin
BP	Bowenoid papulosis
CD8	Cluster of differentiation antigen 8
CDC	Center for Disease Control
CMI	Cell mediated immunity
CO2	Carbon Dioxide
CTL	Cutaneous T-lymphocyte
DNCB	Dinitrochlorobenzene
DCP	Diphencyprone
E	Early
EDV	Epidermodysplasia verruciformis
e.g	For example
Er:YAG	Erbium: Yttrium/Aluminum/Garnet Laser
FDA	Food and Drug Administration
FEH	Focal epithelial hyperplasia

Fig	Figure
FU	Fluorouracil
H	Hour
HIV	Human immunodeficiency virus
HR	High Risk
HS	Highly significant
HSIL	High-grade squamous intraepithelial lesions
IARC	International Agency for Research in Cancer
Ig	Immunoglobulin
IFN-γ	Interferon-gamma
IL	Interleukin
L	Late
LCR	Long control region
LN2	Liquid nitrogen
LR	Low risk
LSIL	Low-grade squamous intraepithelial lesions
MIU	Million international units
ml	Milliliter
mm	Millimeter
MMR	Mumps, measles and rubella
MPTs	Multiple-puncture tests
M w	Mycobacterium w
Nd:YAG	Neodymium: YAG
NK	Natural killer cell
NS	Non significant
pg/ml	Picogram / milliliter
PMN	Peripheral blood mononuclear cells

PPD	Purified protein derivative
RB	Retinoblastoma
RCTs	Randomized controlled trials
RRP	Reccurent respiratory papillomatosis
S	Significant
SADBE	Squaric acid dibutyl ester
SD	Standard deviation
Sec	Second (unit of time)
TCA	Trichloroacetic acid
TH	T-helper cells
TLC	Total leukocytic count
TNF-α	Tumor necrosis factor alpha
TU	Tuberculin units
USA	United States of America
VV	Vurruca vulgaris
WHO	World Health Organization

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Introduction

Warts or verrucae vulgaris are hyperkeratotic papillomas caused by infection with human papilloma virus (HPV) **(Lipke, 2006)** .

Human papilloma virus (HPV) infections are very common and cause various benign and malignant lesions, most notably condyloma acuminata, ano-genital carcinoma, laryngeal papilloma & cutaneous warts **(Gross, 1997).**

There are more than 100 types of HPVs. HPV types-1,-4,-27,-57 & -63 can cause common warts **(Kilkenny and Marks, 1996).**

A range of types of warts have been identified, varying in shape and site affected, as well as the type of human papilloma virus involved. These include (common warts – flat warts – filiform or digitate warts - plantar warts – mosaic warts – genital warts – periungual warts).

Many observations have suggested that wart proliferation is controlled by the immune system, particularly the cell mediated immunity **(Goncalves and Donadi, 2004) .**

Destructive methods are most commonly used as initial therapy by most practitioners **(Sterling et al., 2001).**

Cryotherapy is a reasonable first line therapy for most warts. Products containing salicylic acid with or without lactic acid are effective patient- applied treatments, these have an efficacy comparable to that of cryotherapy **(Gibbs et al., 2002).**

Nowadays, intralesional immunotherapy by different antigens has been proved effective in the treatment of different types of warts (**Gupta et al., 2008).**

Intralesional immunotherapy employs the ability of immune system to recognize certain viral, bacterial and fungal antigens that induce a delayed type hypersensitivity reaction, not only to the antigen but also against the wart virus, which in turn increases the ability of the immune system to recognize and clear human papilloma virus **(Bacelieri and Johnson, 2005).**