

**Research Article****Efficacy Of 10% Potassium Hydroxide in Palmoplantar Warts**

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**ABSTRACT:**

**Objective;**To determine the efficacy of topical 10% Potassium Hydroxide(KOH) in the treatment of palmoplantar wart.

**Methodology:**In this case series study conducted at Dermatology Department, Service Hospital Lahore during July to December 2017,the cases of both genders with age range of 10-20 years were included. The warts of palmo plantar surface of any number and size lasting for at least 1 month were included. The cases of filliform warts, those allergic to KOH and those taking any treatment for this in past 2 weeks were excluded. Then these cases were administered with 10% topical KOH that was applied every night and then they were assessed every week for a total duration of 4 weeks and then they were observed for another 4 weeks to see the final outcome. Efficacy was labelled as yes where there was no lesion present at 8 weeks.

**Results:**There were total 100 cases in this study with mean age of  $11.34 \pm 3.19$  years. There were total 64 (64%) males and 36 (36%) females. Eighteen (18%) cases had a single lesion.The efficacy of 10% KOH was seen in 86 (86%) of cases. The efficacy was better in cases with palmar warts where it was seen in 40 (90.91%) out of 44 cases with  $p=0.12$ . Efficacy was also better in cases with single lesion seen in 16 (88.89%) cases with  $p=0.91$ .

**Conclusion;**The efficacy of 10% KOH is very high and it is near significantly better in cases with palmar warts.

**Key words.** Palmo-plantar Warts, 10% KOH, HPV

**INTRODUCTION:**

Warts are amongst the highest reporting benign conditions to the dermatology clinics. These are important not only due to cosmetic abnormalities, but also because they have association with many other conditions. They can involve eventually any area of the body with most predilection towards the skin and the mucosal surfaces i.e. genital or oral mucosae.

This is caused by Human papilloma virus (HPV); which has multiple strains i.e. over hundreds. Few of the strains has association with particular sites like HPV 6 and 11 have most with oral and genital region. There are multiple phenotypes of warts and can be subdivided into the causative agent. HPV has more than 150 types. There is

predilection of some HPV strains towards particular anatomic sites; however, it is not the definitive rule. The warts can be divided into palmoplantar, flat warts, genital warts, common warts, peri-ungual and filliform warts.<sup>1</sup>

The symptoms usually depend upon the site and the severity of the disease and itching is the most common symptoms observed; the others include cosmetic issue, rash and even bleeding in some cases.<sup>2</sup>

There can be spontaneous regression as well without any treatment in 60% of cases; but is time buying thing and pose a concern of the patient to gain a treatment modality.<sup>3</sup> There were multiple therapies used in the past and these include liquid

nitrogen, salicylic acid, cidofovir, duct tape, liquid nitrogen, bi and tri chloracetic acid (TCA) tretinoin, potassium hydroxide (KOH) and cauterization etc.<sup>4-6</sup>The drug of choice was Salicylic acid initially but the data was controversial, and there was need of a better, safer and efficacious agent.<sup>7-8</sup>

**OBJECTIVE:** To determine the efficacy of topical 10% Potassium Hydroxide (KOH) in the treatment of palmoplantar wart.

**Study Design:** Case series

**Settings:** Dermatology Department, Services Hospital, Lahore

**Duration of Study:** July 2017 to December 2017

**Sample technique:** Non probability consecutive sampling

#### MATERIAL AND METHODS:

In this study, the cases of both genders with age range of 10-20 years were included. The warts of palmo plantar surface of any number and size lasting for at least 1 month were included. The cases of filiform warts, those allergic to KOH and those taking any treatment for this in past 2 weeks were excluded. Then these cases were

**Table No. 01.** Demographics in study subjects

VARIABLES	Numbers	Percentages
Male	64	64
Female	36	36
Single lesion	18	18
Multiple lesion	82	82
Palmar warts	44	44
Plantar warts	56	56

**Table no. 02.** Efficacy vs site of lesion

Site of lesion	Efficacy		Total	p value
	Yes	No		
Palmar	40 (90.91%)	4 (9.09%)	44 (100%)	0.12
Plantar	46 (82.14%)	10 (17.86%)	56 (100%)	
<b>Total</b>	<b>86 (86%)</b>	<b>14 (14%)</b>	<b>100 (100%)</b>	

**Table no. 03.** Efficacy vs number of lesions

Site of lesion	Efficacy		Total	p value
	Yes	No		
Single	16 (88.89%)	2 (11.11%)	18 (100%)	0.91
Multiple	70 (85.36%)	12 (14.64%)	82 (100%)	
<b>Total</b>	<b>86 (86%)</b>	<b>14 (14%)</b>	<b>100 (100%)</b>	

administered with 10% topical KOH that was applied every night and then they were assessed every week for a total duration of 4 weeks and then they were observed for another 4 weeks to see the final outcome. Efficacy was labelled as yes where there was no lesion present at 8 weeks.

#### Statistical analysis:

The data was analyzed and analyzed by using SPSS version 23. Effect modifiers were stratified and post stratification chi-square test was applied taking p-value  $\leq 0.05$  as significant.

#### RESULTS;

There were total 100 cases in this study with mean age of  $11.34 \pm 3.19$  years. There were total 64 (64%) males and 36 (36%) females. Eighteen (18%) cases had a single lesion as in table 01.

The efficacy of 10% KOH was seen in 86 (86%) of cases. The efficacy was better in cases with palmar warts where it was seen in 40 (90.91%) out of 44 cases with  $p = 0.12$  (table 2). Efficacy was also better in cases with single lesion seen in 16 (88.89%) cases with  $p = 0.91$  as shown in table 03.

## DISCUSSION;

Warts are commonly encountered benign lesions that are caused by Human papillomaviruses (HPV) of various types and can involve the skin and the mucosal surfaces of the body and can warrant treatment due to various concerns including its association with multiple medical modalities as well as cosmetic reasons. The palmo plantar warts are the most common and are seen in certain professions like fish, meat and poultry handlers.

The efficacy of 10% KOH was seen in 86 (86%) of the cases in this study. The results were slightly lower as compared to the studies done in the past. According to a study done by Al-Hamdi et al, the efficacy of this agent was seen in 96.8% of cases with palmo plantar warts.<sup>9</sup> However this difference was seen due to difference in the operational definite of out studies as they labelled efficacy with reduction in number of lesions as compared to the total absence which was used in our study. The total absence of all the lesion in their study was observed in 82% of the cases; that was close the the finding of our study.

Seo SH et al, in another study used a comparison between 10% KOH and imiquimod for the treatment of palmo-plantar warts and in their study they found KOH as a better agent and found its efficacy in 7&% of the cases in contrast to the 57% of the cases treated with imiquimod.<sup>10</sup> The study by Metkar et al, revealed the contradictory results to all the above mentioned studies and the efficacy was seen in as low as 8 (42.1%) of cases in their study.<sup>11</sup>

The efficacy was better in cases that had palmar warts and those that had single lesion as compared to the multiple ones with p values of 0.12 and 0.91 respectively; both these difference were statistically non significant. This finding was also supported by the data in the past that solitary lesions responded better than the multiple ones. The reason of this can be as multiple lesions take longer duration of time to recover.<sup>12-13</sup> The reason of palmar warts to respond better can be due to cosmetic effects that the compliance and care was

better with palmer ones as compared to the plantar warts.

## CONCLUSION;

The efficacy of 10% KOH is very high and it is near significantly better in cases with palmar warts.

## REFERENCES;

1. Kirnbauer R, Lenz P. Human papillomaviruses. In: Bologna JL, Jorizzo JL, Schaffer JV, editors. *Dermatology*. 3rd ed. Philadelphia: Mosby Elsevier; 2012.P.634.
2. Sterling JC, Gibbs S, Hussain HS, Mustapa MF, Handfield-Jones SE. British association of dermatologists' guidelines for the management of cutaneous warts. *Br J Dermatol*. 2014;171(4):696-712.
3. Kuwabara AM, Rainer BM, Basdag H, Cohen BA. Children with warts: a retrospective study in an outpatient setting. *PediatrDermatol*. 2015;32(5):679-83.
4. Kwok CS, Holland R, Gibbs S. Efficacy of topical treatments for cutaneous warts: a meta-analysis and pooled analysis of randomized controlled trials. *Br J Dermatol*. 2011;165:233-34.
5. Grussendorf-Conen EI, Jacobs S. Efficacy of imiquimod 5% cream in the treatment of recalcitrant warts in children. *PediatrDermatol*. 2002;19:263.
6. Field S, Irvine AD, Kirby B. The treatment of viral warts with topical cidofovir 1%: our experience of seven paediatric patients. *Br J Dermatol* 2009;160:223.
7. Coskey RJ. Treatment of plantar warts in children with a salicylic acid-podophyllin-canharidin product. *PediatrDermatol* 1984;2:71.
8. Bruggink SC, Gussekloo J, Berger MY. Cryotherapy with liquid nitrogen versus topical salicylic acid application for cutaneous warts in primary care: randomized controlled trial. *Can Med Assoc J*. 2010;182:1624-26.

9. Al-Hamdi KI, Al-Rahmani MA. Evaluation of topical potassium hydroxide solution for treatment of plane warts. *Indian J Dermatol.* 2012;57(1):38-41.
10. Seo SH, Chin HW, Jeong DW, Sung HW. An open, randomized, comparative clinical and histological study of imiquimod 5% cream versus 10% potassium hydroxide solution in the treatment of *Molluscumcontagiosum*. *Ann Dermatol.* 2010;22:156–62.
11. Metkar A, Pande S, Khopkar U. An open, nonrandomized, comparative study of imiquimod 5% cream versus 10% potassium hydroxide solution in the treatment of *Molluscumcontagiosum*. *Indian J DermatolVenereolLeprol.* 2008;74:614–18.
12. Rajouria EA, Amatya A, Karn D. Comparative study of 5% potassium hydroxide solution versus 0.05% tretinoin cream for *MolluscumContagiosum* in children. *Kathmandu Univ Med J (KUMJ)* 2011;9:291–4.
13. Chathra N, Sukumar D, Ramesh M, BhatB, Kishore N, Martis J, et al. A comparative study of 10% KOH solution and 5% imiquimod cream for the treatment of *Molluscumcontagiosum* in the pediatric age group. *Indian Dermatol Online J.* 2015;6(2): 75–80.