

Comparative Clinical Efficacy between Electrodesiccation with Curettage and Application of 80% Phenol Solution in Treatment of Common Warts

Dina Arwina Dalimunthe*, Remenda Siregar, Chairiyah Tanjung

Department of Dermatology and Venereology, Faculty of Medicine, Sumatera Utara University, Medan, Indonesia

Abstract

Citation: Dalimunthe DA, Siregar R, Tanjung C. Comparative Clinical Efficacy between Electrodesiccation with Curettage and Application of 80% Phenol Solution in Treatment of Common Warts. *Open Access Maced J Med Sci.* 2018 Feb 15; 6(2):326-329. <https://doi.org/10.3889/oamjms.2018.074>

Keywords: Common warts; Electrodesiccation; Phenol; Efficacy; Treatment outcome

***Correspondence:** Dina Arwina Dalimunthe, Department of Dermatology and Venereology, Faculty of Medicine, Sumatera Utara University, Indonesia. E-mail: dinadalimunthe15@gmail.com

Received: 30-Sep-2017; **Revised:** 24-Nov-2017; **Accepted:** 25-Nov-2017; **Online first:** 11-Feb-2018

Copyright: © 2018 Dina Arwina Dalimunthe, Remenda Siregar, Chairiyah Tanjung. This is an open-access article distributed under the terms of the Creative Commons Attribution-NonCommercial 4.0 International License (CC BY-NC 4.0)

Funding: This research did not receive any financial support

Competing Interests: The authors have declared that no competing interests exist

BACKGROUND: Common warts are skin diseases caused by human papillomavirus. Several treatment modalities available for common warts, two of them are electrodesiccation with curettage and application of 80% phenol solution.

AIM: This study aims to compare clinical efficacy between these two modalities.

MATERIAL AND METHODS: Open clinical trial was conducted at Dr Pirngadi General Hospital Medan and H. Adam Malik General Hospital Medan from February to June 2013 on 17 patients with multiple common warts. Both treatments began and applied simultaneously on the same day on each patient.

RESULTS: Cure rate was higher in electrodesiccation with curettage (76.5%, 100%) compared to the application of 80% phenol solution (11.8%, 64.7%) on three weeks and six weeks of follow up. Statistical analysis showed a significant difference of common warts cure rate between electrodesiccation with curettage and application of 80% phenol solution after three weeks ($p < 0.001$) and six weeks ($p = 0.018$) of treatment.

CONCLUSION: As a conclusion, electrodesiccation with curettage has higher cure rate than the application of 80% phenol solution on the treatment of common warts. Further study is needed to find out the best concentration and time interval for application of phenol solution to improve its clinical efficacy as an alternative treatment of choice for common warts.

Introduction

Human papillomavirus (HPV) infection is very common, as most people will experience infection during their lifetime [1]. The most common manifestation of HPV infection is common warts [2]. Common warts may appear at any age [3].

Treatment of common warts aims to cure the patient's physical and psychological discomfort and to prevent the spread of infection [4]. Treatment should present no hazard to the patient and side effect should be minimal [5]. Many treatment modalities are available for the treatment of common warts, such as topical, systemic, and surgery [6].

One of surgical treatment is electrodesiccation with curettage which is the most common treatment for common warts in Medan. Some of the patients feel discomfort with this

treatment because of the trauma of pain from the injection of local anaesthesia.

Topical treatment could be an alternative to avoid that discomfort, and the tools and the procedure are simpler than surgical treatment. There are several topical treatments for common warts, like salicylic acid, lactic acid and anthralin. Gibbs & Harvey (2009) and Gibbs, Harvey, Sterling & Stark (2002) show there is no the best topical treatment for common warts [7][8].

Phenol is formerly obtained from coal tar and has been using in our daily life. In low concentration, phenol can be used as an antiseptic and antimicrobial agent, while in high concentration phenol can act as acoustic agent [9][10]. Banihashemi, Pezeshkpoor, Yasdanpanah & Family (2008) found that treat common warts with 80% phenol has no significant different compared to cryosurgery [11].

The objective of this study is to compare clinical efficacy between electrodesiccation with curettage with the application of 80% phenol solution in the treatment of common warts.

Methods

Patients

This study was conducted after receiving approval from Ethical Committee of Sumatera Utara University. The open clinical trial was done at Dr Pirngadi General Hospital Medan and H. Adam Malik General Hospital Medan from February to June 2013. The sample was 17 patients with multiple common warts, older than eight years, not pregnant, not lactating, not using a cardiac pacemaker, did not have keloid history, and agreed to participate in this study. First of all, the patient must sign the informed consent. After that one of common warts of the patients was treated with electrodesiccation with curettage and another one was treated with application of 80% phenol solution.

Procedure of treatment

The treatment procedure of electrodesiccation with curettage is:

- The patient is lying on the bed
- Disinfection of common warts and its surrounding with povidone iodine
- Injection of 2% lidocaine with adrenalin by infiltration procedure around the lesion, except for lesion in acral region which was done without adrenalin
- Wait for 10 - 15 minutes
- Electrodesiccation was done from the centre to the edge of lesion
- Use curette to take lesion until its base
- After clean apply gentamycin ointment

The treatment procedure of application of 80% phenol solution are:

- Patient sit is lying on the bed
- Application of Vaseline around the lesion using toothpick
- Application of 80% phenol solution using a cotton bud to the lesion until the colour changes into white
- This procedure is done once a week until lesion dismiss, maximum in 6 weeks

Follow up

Follow up is used to see clinical improvement and if there is any complication. For electrodesiccation with curettage the first follow up was done two days after the treatment, then weekly until the wound heals or maximum six weeks. Meanwhile, the 80% phenol solution treatment was followed up every week until the lesion dismisses or maximum six weeks. At the last visit, the patient was asked about the two methods of treatment for their common warts, which one they prefer and why.

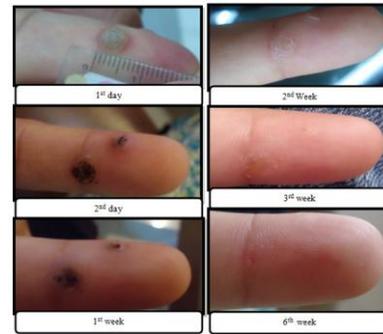


Figure 1: Treatment with electrodesiccation and curettage

Statistical analysis

Chi-square test and Fisher exact test with a level of significance 0.05 were utilised to test the significance of the difference of cure rate between electrodesiccation with curettage and application of 80% phenol solution.



Figure 2: Treatment with 80% phenol solution

Results and Discussion

Characteristic of patient

In this study, common warts were found more on male (58.8%) than female (41.2%). It caused by low awareness of hygiene in men, and usually, they are physically more active than women, making them vulnerable to have trauma on stratum corneum.¹² Moreover, women are more concern and aware of their common warts and treated them with over – the – counter medication. In contrast, men are more unaware of their common warts because they do not cause any discomfort [13]. Al - Mutairi & Al Khalaf (2012) in Kuwait found similar result that common warts found more frequent in male (58,7%) than female (41,3%) while Bruggink et al. (2012) in Leiden found prevalence of patient with common warts more on female (58.9%) than male (41.1%) [12][14].

Table 1: Characteristic of patient

Characteristic	N	%
Sex		
Male	10	58.8
Female	7	41.2
Age (years)		
9-13	9	52.9
14-18	1	5.9
19-23	5	29.4
24-28	-	-
29-33	2	11.8

The most frequent was patient with age 9-13 years (52.9%), while the most frequent in Bruggink et al. study (2012) in Leiden was 4 - 11 years (43.5%) [14], and according to Kilkenny, Merlin, Young & Marksl (1998) in Australia the most frequent was 4 - 12 Tahun (59.0%) [15]. The incidence of common warts in this age group may be related to school attendance and exposure from peer group [16]. Transmission of HPV could be indirect via fomites [12].

Location of common warts

Common warts were found on finger hand, hand, foot, knee, elbow and ankle, the most frequent was finger (64.7%). The hands, especially fingers, are most in contact with the surroundings which increase their possibility of trauma and become the entry point of HPV infection than in other parts of the body.

Table 2: Location of common warts

Location	N	%
Finger	22	64.7
Hand	4	11.8
Foot	3	8.8
Knee	3	8.8
Elbow	1	2.9
Ankle	1	2.9

A study by Al - Muairi & Al Khalaf (2012) in Kuwait showed that most common warts are found on the hands [12]. In Bruggink et al study (2012) warts were found most frequent on hand (58.1%) [14],

according to Kilkenny et al (1998) the most location of warts was upper limb (84.2%) [15], Theng, Goh, Chong, Chan & Giam (2004) in Singapore reported that hand was the most location of warts (39.1%) [17].

Relation of method of treatment and curing at the end of the third week

On follow up at the end of the third week, it could be seen that common warts that underwent electrodesiccation with curettage treatment had higher cure rate (76.5%) than warts treated with application of 80% phenol solution (11.8%). The difference was statistically significant ($p < 0.001$), which means there was different clinical efficacy between electrodesiccation with curettage and application of 80% phenol solution.

Table 3: Curing at the end of the third week based on method of treatment

Curing	Method of treatment				p
	Electrodesiccation with curettage		Apply of 80% phenol solution		
	n	%	n	%	
Cured	13	76.5	2	11.8	< 0.001
Not yet cured	4	23.5	15	88.2	
Total	17	100.0	17	100.0	

Compare to Ginting (1988) in Medan that reported the percentage of healing at the end of the third week on 39 patients whom treatment with electrodesiccation with curettage was 95%, result of this study was lower [18]. The result of this study was similar to Banihashemi et al. (2008) in Iran that reported the percentage of healing at the end of the third week on 23 patients who were treated with application of 80% phenol solution was 13% [11].

Although all patients who were treated with electrodesiccation with curettage were cured, there was hypopigmentation complication in 3 patients (17.7%). Al - Muairi & Al Khalaf (2012) in Kuwait, revealed that the side effect of electrodesiccation is erythema, blisters and hyperpigmentation [12]. On the other hand, there was no any complication on patients who were treated with 80% phenol solution.

Table 4: Curing at the end of the sixth week based on method of treatment

Curing	Method of treatment				p
	Electrodesiccation with curettage		Apply to 80% phenol solution		
	n	%	n	%	
Cured	17	100.0	11	64.7	0.018
Not yet cured	0	0.0	6	35.3e	
Total	17	100.0	17	100.0	

Perception of patient to method of treatment

At the last visit, patients were asked how their perception of the two methods of treatment, which one they prefer and what was their reason (table 5). Most patients prefer electrodesiccation over curettage because although it is more painful, the common

warts were cleared in one session, resulting in fewer visits to doctors. Some others choose to have less painful procedure despite longer duration of treatment.

Table 5: Preference of patient to method of treatment

Preference to method of treatment	n	%	Reason
Electrodesiccation with curettage	9	53.0	Practical (6) Faster cure and not repeatedly (2), Faster cure (1) Afraid of electrodesiccation because of the tools and injection (3)
Apply to 80% phenol solution	4	23.5	On electrodesiccation, patient must take care the wound not to wet for two days which not match with her works as a midwife (1) Not worry about applying to phenol solution repeatedly and not afraid with electrodesiccation (3)
Electrodesiccation with curettage as same as applying to 80% phenol solution	4	23.5	It depends on which of method of treatment available (1)
Total	17	100.0	

In conclusion, there was clinical efficacy difference between electrodesiccation with curettage and application of 80% phenol solution on the treatment of common warts, where electrodesiccation with curettage has a better result. Although electrodesiccation with curettage has higher cure rate than the application of 80% phenol solution, for patients, who feel discomfort or afraid to electrodesiccation, especially children, application of 80% phenol can be the appropriate choice.

References

- James WD, Berger TG, Elston DM. Andrews' Diseases of the skin. Clinical Dermatology, 10th ed. Philadelphia, USA: Saunders Elsevier, 2006:367-420. PMID:17007093
- Berman B, Weinstein A. Treatment of warts. Dermatologic Therapy. 2000; 13: 290-304. <https://doi.org/10.1046/j.1529-8019.2000.00031.x>
- Habif TP. Clinical Dermatology. A colour guide to diagnosis and therapy, 4th ed. Philadelphia, USA: Mosby, 2004:368-408.
- Micali G, Oglio FD, Nasca MR, Tedeschi A. Management of cutaneous warts, An evidence-based approach. Am J Clin Dermatol. 2004; 5(5):311-7. <https://doi.org/10.2165/00128071-200405050-00004> PMID:15554732
- Yelverton CB. Warts. In: K. A. Arndt, & J. T. S. Hsu (Ed). Manual of dermatology therapeutic 7th ed. Philadelphia, USA: Lippincott Williams & Wilkins, 2007:233-42.
- Androphy EJ, Lowy DR. Warts. In: K. Wolff, L. A. Goldsmith, S. I. Katz, B. A. Gilchrest, A. S. Paller, D. J. Leffell (Ed). Fitzpatrick's dermatology in general medicine, 7th ed. New York, USA: McGraw-Hill, 2008:1914-23.
- Gibbs S, Harvey I. Topical treatment for cutaneous warts (Review). The Cochrane collaboration. 2009; 3: 1-86.
- Gibbs S, Harvey I, Sterling J, Stark R. Local treatment for cutaneous warts: systematic review. BMJ. 2002; 325:1-8. <https://doi.org/10.1136/bmj.325.7362.461>
- State Medical Examining and Licensing Boards. Chicago: Press of the American Medical Association, 1913.
- Butler GF. A text-book of Materia Medica, Pharmacology and Therapeutics. Philadelphia: W.B. Saunders Company, 1908.
- Banihashemi M, Pezeshkpoor F, Yazdanpanah MJ, Family S. Efficacy of 80% phenol solution in comparison with cryotherapy in the treatment of common warts of hand. Singapore Med J. 2008; 49(12):1035-7. PMID:19122958
- Al-Mutairi N, AlKhalaf M. Mucocutaneous warts in children: clinical presentations, risk factors, and response to treatment. Acta Dermatovenerologica. 2012; 21:69-72.
- Bruggink SC, Ekhof JAH, Egberts PF, van Blijswijk SCE, Assendelft WJJ, Gussekloo J. Warts Transmitted in Families and Schools: A Prospective Cohort. Pediatrics. 2013; 131:928-34. <https://doi.org/10.1542/peds.2012-2946> PMID:23610204
- Bruggink SC, de Koning MNC, Gussekloo J, Egberts PF, Schegget J, Feltkamp MCW, Eekhof JAH. Cutaneous warts-associated HPV types: Prevalence and relation with patient characteristic. Journal of Clinical Virology. 2012; 55: 250-5. <https://doi.org/10.1016/j.jcv.2012.07.014> PMID:22884670
- Kilkenny M, Merlin K, Young R, Marks R. The prevalence of common skin condition in Australian school student: Common, plane and plantar warts. British Journal of Dermatology. 1998; 138:840-5. <https://doi.org/10.1046/j.1365-2133.1998.02222.x> PMID:9666831
- Silverberg JI, Silverberg NB. The US prevalence of common warts in childhood: a population-based study. Journal of Investigative Dermatology. 2013; 131:2788-90. <https://doi.org/10.1038/jid.2013.226> PMID:23657500
- Theng TSC, Goh BK, Chong WS, Chan YC, Giam YC. Viral warts in children seen at a tertiary referral center. Ann Acad Med Singapore. 2004; 33: 53-6. PMID:15008563
- Ginting O. Perbandingan efektivitas pengobatan veruka di kulit dengan kuretase saja dan kuretase disertai elektrodesikasi. Medan, Indonesia: Fakultas Kedokteran Universitas Sumatera Utara, 1988.