ID: JCDR/2012/3495:1849

Original Article

Dermatology Section

Electrosurgery VS 40% Salicylic Acid in the Treatment of Warts

SUDHAKAR RAO K.M., ANKAD B.S., VARNA NAIDU, SAMPAGHAVI V.V., UNNI M.M., ARUNA M.S.

ABSTRACT

Context: Verruca Vulgaris is the common skin disease in dermatology practice. The clinical management of Verruca vulgaris is often challenging. Multiple modalities of treatment are currently existing, but none of them is singularly effective.

Aim: Comparative study between electrosurgery and 40% salicylic acid in the treatment of warts.

Settings and Design: This is a randomized single blind prospective study

Methods and Materials: The study was carried out for 12 months and it included 60 patients. Patients with genital warts, immuno compromised patients and pregnant females were excluded from the study.

Statistical Analysis Used:chi square test .

Results: There were 60 cases of warts. Electrosurgery was used in 30 cases with complete clearance in 27 cases. 40% salicylic acid was used in 30 cases with complete clearance in 5 patients.

Conclusions: Electrosurgery treatment in warts is the best when compared to 40% salicylic acid.

Key Words: Warts, Electrosurgery, 40% Salicylic acid

INTRODUCTION

Warts are the common the viral infections that are encountered in dermatological practice, caused by DNA tumour virus that belong to family Papova viridae [1]. Though there are many modalities in the treatment of warts, none of them is singularly effective in the treatment of all types, thus it is rightly acknowledged that treatment of warts is not merely a science but an art, the multitude of therapies that have been described so far and those which are undertrial reflect the imperfection and inadequacy of the existing modalities conforming the HPVs the title of 'treatment nuisance'.

Current treatments for verrucae involves destruction of the infected cells be physically or chemically damaging it and the decision regarding which treatment to use would depend on the size, location, number, type, age of the patient, risk of scarring and patients commitment to the therapy.

Warts are benign epidermal proliferations that have been recognized for thousands of years [2]. Until 19th century genital warts were believed to be a form of Syphilis or Gonorrhea [3].

It was coined by Melnick in 1962 to denote a group of DNA viruses that comprises the papilloma, polyoma, and vacuolating viruses [3]

MATERIALS AND METHODS

Study Design

Prospective randomized double blind study 60 consecutive patients with warts attending department of dermatology and venereology were subjects for the study. Sixty patients were randomly selected by envelope method. Study was done over a period of one year.

Inclusion Criteria

Patients presenting with all morphological types of warts irrespective of age, sex and duration were included in the study.

Exclusion Criteria

Patients with genital warts, immuno compromised patients and pregnancy were excluded from the study.

A detailed history regarding the age, sex, occupation, duration of disease, family history of disease was obtained. A thorough dermatological examination was done taking care to note morphology and distribution of warts. All cases were diagnosed by paring. Written consent was obtained from all the patients. Clearance from the special ethical committee was obtained for the study.

The two modalities tried were:

(a) Electrosurgery
(b) 40% Salicylic acid

Thirty cases were selected randomly under each group, each patient was followed up monthly for a period of six months and results were compared at the end of 6 months.

(a) Electrosurgery

Prior to the electrosurgery, the procedure was explained to the patient in detail to remove apprehension. The procedure was carried out in Minor-OT with adequate lighting. The operator and assistant wore mask to prevent exposure to smoke born microbes.

Preparatory to electrosurgery, the lesion and surrounding skin was cleaned with povidine-iodine. Alcohol was not used because of the potential for alcohol to ignite with electrosurgery.

1% lidocaine with epinephrine was used for local anaesthesia. The procedure was undertaken with the patient in lying down position. After removal of the wart, the base was again cauterized until bleeding stopped completely. The wound was dressed with sterile gauze. Follow-up was done every month for 6 months.

(b) 40% Salicylic Acid

The reagent was applied carefully avoiding normal skin using a sharpened matchstick for a period of 1 week and the patient was trained thus to do it at home. Occlusion was done over palms and soles. The lesions were treated for a period of 3 months or the disappearance of the lesions whichever is earlier. After the disappearance of the lesions, the patient was followed up every month for a period of 6 months

The results were assessed as follows:

"Complete clearance" is defined as total clearance of warts, with no evidence of residual warts. "Partial clearance" is defined as improvement in the number and or size of warts, but without complete eradication of warts." No improvement" is defined as warts in which there is no reduction in number or size or worsened with treatment.

All patients were followed-up monthly for a period of 6 months. Reappearance of warts, at the sites of earlier lesions during follow-up was considered as "Recurrence".

Statistical Analysis Used:Chi Square test.

RESULTS

In electrosurgery group of 27 patients (90%) had "complete clearance". Three patients had "recurrence" as shown in [Table/Fig-1] and [Table/Fig-2]. In 40% Salicylic acid group 5 patients had "complete clearance". Three patients had "recurrence". In 20 patients there was "no improvement" and 2 had "partial clearance" as shown in [Table/Fig-3] and [Table/Fig-4].

As per the statistical analysis electrosurgery treatment is superior to the 40% Salicylic acid treatment($P < 0.001$)

DISCUSSION

Electrosurgery

In the present study out of 30 patients subjected for electrosurgery, there was "complete cure" in 27 patients (90%) and in 3 patients there was "recurrence".

Chang et al [4] in their study of 302 patients with warts, 11 patients were treated with electro-cautery. Eight patients had complete clearance (72.2%).

As compared to above study, in the present study shows higher rate of complete clearance. This could be attributed to more number of patients in the present study.

Alexander Berman [5] used electro-surgery for 2 patients with flat warts, found "complete clearance" in both patients. The above study had no recurrence in comparison to present study; this could be attributed to less number of patients in the above study. In the present study all types of morphological warts are subjected to Electrosurgery, while in the above study only flat warts are subjected to electrosurgery.

Samuel K et al [6] used electrosurgery for 100 patients of condylomata, found complete clearance in 59 patients. Among them

[Table/Fig-1]: Before and After Electrosurgery

Result	No. of Patients	Percentage
Complete clearance	27	90%
Partial clearance	–	–
No improvement	–	–
Recurrence	03	10%

[Table/Fig-2]: Response To Electrosurgery
In electrosurgery group 27 patients (90%) had "complete clearance". 03 patients had "recurrence".

[Table/Fig-3]: After 40% salicylic acid treatment

Result	No. of Patients	Percentage
Complete clearance	05	16.6%
Partial clearance	02	6.6%
No improvement	20	66.6%
Recurrence	03	10%

[Table/Fig-4]: Response To Salicylic Acid (40%)
In the present study, out of 30 patients only 05 patients had "complete clearance" and 3 had "recurrence". In 20 patients there was "no improvement" and 2 had "partial clearance".

41% patients had recurrence. In comparison to above study, the present study shows higher rate of complete clearance.

The reason being all the patients in the above study had condylomata and in this study electrosurgery was done to all morphological types of warts except genitals.

40% Salicylic acid

In the present study, out of 30 patients in which 40% salicylic acid was utilized, there was complete clearance in only 5 patients. In 20 patients (66.6%) there was no response, 2 (6.66%) patient had partial clearance and in 3 patients (10%) there was recurrence.

Haribhakti et al [7] found 40% salicylic acid applied daily was useful in few cases of warts and have also mentioned them to be more useful when combined with other agents.

Sandipan Dhar et al [8] in his study of 100 patients of warts over hands and feet, complete clearance was seen in 82.1% of warts on hands, 46.7% of palmar warts, 54.5% of warts on feet, 84.2% of plantar warts and 57.1% of warts on hands and feet. Overall success rate was 70% with 16.5% salicylic acid and 16.5% lactic acid in flexible collodion.

As compared to the above study, percentage of "complete clearance" in the present study is very less (16.6%). This could be attributed to lactic acid, flexible collodion in above study. Flexible collodion increases efficacy of salicylic acid in the above study.

Chang et al [4] in his study of 302 viral wart patients, 13 patients were subjected to 17% topical salicylic acid. Out of 13 patients, 5 patients used it in combination with liquid nitrogen. Three of the patients showed complete clearance, 2 patients showed partial clearance, no response in two patients and 6 were defaulters. As compared to the present study, percentage of complete clearance in above study is high. This could be attributed to less number of patients, 2 patients applied liquid nitrogen, salicylic acid and increased number of defaulters for follow-up in above study.

Bourke et al [9] in his study of 225 patients with warts 43%, 37% and 26% had complete clearance who were treated every 1,2 and 3 weeks respectively with combination of liquid nitrogen, 16.5% salicylic acid and 16.5% lactic acid in flexible collodion.

As compared to the above study percentage of complete clearance is less in the present study. This could be attributed to additive effect of liquid nitrogen, flexible collodion, lactic acid in the above study and less number of patients enrolled in present study.

Berth Jones et al [10] in his study of 300 viral wart patients, 57% and 62% had complete clearance from single freeze and double freeze technique respectively. Wart paint (16.5% salicylic acid, 16.5% lactic acid in flexible collodion was applied daily by subjects.

As compared to above study, percentage of complete clearance in the present study is less. This could be attributed to liquid nitrogen, 16.5% lactic acid flexible collodion and more number of subjects are enrolled in the above study.

Steele et al [11] his study of 57 patients with viral warts, 19(66%) of active treatment (60% salicylic acid and mono-chloroacetic acid crystals) had complete clearance compared with 5 of placebo group. 24 (83%) of the active group compared with 15(54%) of placebo group were cured after 6 months.

In the present study percentage of "complete clearance" is less as compared to above study; this could be attributed to higher percentage of salicylic acid and mixing it with mono-chloroacetic acid crystals in the above study.

CONCLUSION

Warts or verrucae are one of the commonest conditions in dermatological practice.Though spontaneous cure is known in warts it is not possible to wait for the same. Though there are many modalities of treatment there is no specific treatment because the selection of modality depends on the size, location, type of lesions, chances of side effects and patient's willingness to treatment.In view of the absence of a universally specific treatment many modalities of therapy exist and many remedies are added frequently. In the present study percentage of complete clearance is high in electrosurgery as compared to 40% Salicylic acid.As per statistics electrosurgery treatment is superior to 40% Salicylic acid treatment.

REFERENCES

[1] TomsonN, SterlingJ, AhmedI, HagueJ, Berth-JonesJ. Human papillomavirus typing of warts and response to cryotherapy. *J Eur Acad Dermatol Venereol* 2011; 25(9):1108-11.
[2] Jeffrey L, Melton, James E, Rasmussen. Clinical manifestation of Human papilloma virus infection in non-genital sites. *Dermatologic clinics*-Vol 9. No.2, April 1991 pp. 219-32.
[3] LowyDR, Androphy EJ, Warts Douglas R. In: *Fitzpatrick's Dermatology in general medicine*. 5th edn. Freedberg IM, Eisen AZ, Wolff K, Katz SI, Austin KE, Goldsmith LA et al., editors. New York: Mc Graw Hill;2003. p. 2119-31.
[4] Chang TSC, Goh BK, Chong WS, Chan YC, Giam YC. Viral warts in children seen at a tertiary referral centre. *Ann Acad Med Singapore*. 2004; 33: 53-56.
[5] Berman A. Failure of flat warts to recur in electrosurgically altered skin. Arch Dermatol. 1978;114(12):1797-9.
[6] Samuel K. Rosmeberg. Sexually transmitted papilloma viral infection in men. *Dermatologic clinics*. April 1991, vol 9, no 2, page 317-31.
[7] Haribhakti PB and Macwan R. Viral skin infections. , *IADVL text book & Atlas of Dermatology* 2nd edn Vol 1. Valia AR editor. India: Bhalani publishing house;Reprinted 2003. 285-322.
[8] Dhar S, Kumar B, Kaur I. Treatment of warts with salicyclic acid and lactic acid in flexible collodion wart paint. Indian J Dermatol Venereol Leprol 1994;60:286-9
[9] Bourke JF, Berth Jones J, Hutchinson PE. Cryotherapy of common viral warts at intervals of 1, 2 & 3 weeks. *Br J Dermatol*. 1995; 132: 433-36.
[10] Sterling JC, Hand field Jones S, Hudson PM. Guidelines for the management of cutaneous warts. *Br J Dermatol*. 2001;144:4-11
[11] Steele K, Shirodaria P, O'Hare M, Merrett JD, Irwin WG, Simpson DI, et al.: Monochloroacetic acid and 60% salicylic acid as a treatment for simple plantar warts: effectiveness and mode of action.: Br J Dermatol. 1988;118(4):537-43.

AUTHOR(S):

1. Dr. Sudhakar Rao K.M.
2. Dr. Ankad B.S.
3. Dr. Varna Naidu
4. Dr. Sampaghavi V.V.
5. Dr. Unni M.M.
6. Dr. Aruna M.S.

PARTICULARS OF CONTRIBUTORS:

1. Assistant Professor, Dept of Dermatology, SN Medical College Bagalkot, Karnataka, India.
2. Assistant Professor,Dept of Dermatology, SN Medical College Bagalkot, Karnataka, India.
3. Assistant Professor,Dept of Dermatology, SN Medical College Bagalkot, Karnataka, India.
4. Senior Resident, Dept of Dermatology, SN Medical College Bagalkot, Karnataka, India.
5. Professor, Dept of Dermatology, SN Medical College, Bagalkot, Karnataka, India.
6. Junior Resident, Dept of Community Medicine, SN Medical College, Bagalkot, Karnataka, India.

NAME, ADDRESS, TELEPHONE, E-MAIL ID OF THE CORRESPONDING AUTHOR:

Dr Sudhakar Rao K.M.
C-9 staff quarters, SN Medical College,
Bagalkot - 587101. Karnataka, India.
Phone: 9972315388.
E-mail: drkmsudhakarrao@gmail.com

FINANCIAL OR OTHER COMPETING INTERESTS:

None.

Date of Submission: **Oct 24, 2011**
Date of Peer Review: **Dec 15, 2011**
Date of Acceptance: **Jan 05, 2012**
Date of Publishing: **Feb 15, 2012**