

## Original Research Article

## Comparative Efficacy of 50% Trichloroacetic Acid And 88%Phenol In The Management of *Xanthelasma palpebrarum*.

Jyoti S.<sup>1</sup>, Dr. R.D. Mehta.<sup>2</sup>, Dr.B.C.Ghiya.<sup>3</sup>, Dr.R.A.Bumb.<sup>4</sup>, Dr.Prasoon Soni.<sup>5</sup>, Dr.Ashok Dhanwal.<sup>6</sup>, Dr Anukriti Srivastava.<sup>7</sup>, Dr.Jitendra Acharya.<sup>8</sup><sup>1</sup>consultant Dermatologist Bellary Karnatka India.<sup>2</sup>Professors &Head Department of Skin &V.D. S.P.Medical College Bikaner Rajasthan India.<sup>3</sup>Associate Professor Department of Skin &V.D. S.P.Medical College Bikaner Rajasthan India.<sup>4</sup>Consultant Dermatologist Bikaner Rajasthan India.<sup>5</sup>Assistant Professor Department of Skin &V.D. S.P.Medical College Bikaner Rajasthan India.<sup>6</sup>Assistant Professor Department of Skin &V.D. Sikar Medical College India.<sup>7</sup>Consultant Dermatologist U.K.<sup>8</sup>Senior Demonstrator S.P.Medical College Bikaner Rajasthan India.\*Corresponding Author  
Dr.Jitendra Acharya

**Abstract: Introduction:** *Xanthelasma palpebrarum* is a cosmetic disorder affecting eyelids with symmetrical soft, yellowish brown velvety papules on the inner canthi of upper and lower lids. Though it is a benign lesion causing no functional disturbance, it is aesthetically annoying. Chemocautrant phenol 88% was evaluated for the first time in the management of Xanthelasma Palpebrarum as an alternative modality and its comparative efficacy with 50% Trichloroacetic Acid; the established therapy. **Material and Methods:** A prospective controlled study was conducted on 50 patients of *Xanthelasma palpebrarum* attending Outdoor Patient Department of Dermatology, Venereology and Leprosy, SP Medical College and P.B.M. Hospital, Bikaner from May 2014 to April 2015. The cases were diagnosed on the basis of typical clinical presentation. These patients were randomly divided into two groups of 25 each in group A and group B. Group A received topical 50% Trichloroacetic acid while Group B received topical 88% Phenol. **Results:** Treatment with 88% Phenol gave an appreciable response in 96% patients whereas with 50% Trichloroacetic acid it was 64%. The response was quicker in TCA group as compared to Phenol group. Recurrence was observed in 11 patients of group A, and 2 in group B patients during 12 months follow up. Side effects in both the treatment modalities were minimal. **Conclusion:** In conclusion, both topical 50% Trichloroacetic acid and 88% Phenol are effective in the management of *Xanthelasma palpebrarum*.

**Keywords:** Xanthelasma, phenol, trichloroacetic acid.

### INTRODUCTION

*Xanthelasma palpebrarum* is one of the most common xanthomas seen in clinical practice. It is known to show a peak incidence at 30-50 years (Chhetri, M.K. *et al.*, 1967; Gangopadadhy, D. N. *et al.*, 1998). The exact cause is not known but several factors like lipid abnormalities (Bergam, R. 1994, Feb), hormonal factors (Vacca, J. B. *et al.*, 1959; Segal, P. *et al.*, 1986), local factors (Wolff, E., & .Xanthelasma, P. 1951; Thompson, J.A., 1965) and cellular interplay by macrophages (Bergman, R. *et al.*, 1996) are attributed to play a role in its etiopathogenesis.

The present study was designed to compare 50% TCA and 88%Phenol in the management of *Xanthelasma palpebrarum*.

### MATERIAL AND METHODS

A prospective controlled study was conducted on 50 patients of *Xanthelasma palpebrarum* attending Outdoor Patient Department of Dermatology, Venereology and Leprosy, SP Medical College and P.B.M. Hospital, Bikaner from May 2014 to April 2015. The cases were diagnosed on the basis of typical clinical presentation. These patients were randomly divided into two groups of 25 each in group A and group B. Group A received topical 50% Trichloroacetic

Quick Response Code



Journal homepage:

<http://www.easpublisher.com/easjpid/>

Article History

Received: 10.02.2019

Accepted: 25.02.2019

Published: 16.03.2019

Copyright © 2019: This is an open-access article distributed under the terms of the Creative Commons Attribution license which permits unrestricted use, distribution, and reproduction in any medium for non commercial use (NonCommercial, or CC-BY-NC) provided the original author and source are credited.

acid while Group B received topical 88% Phenol. The site of lesion was first cleaned with a saline swab and the medication was applied topically with fine cotton swab, care was taken that the area of application does not extend beyond the lesion and the accidental spillage was neutralised with ice cube. Medication was applied once, if Snecessary, the process was repeated after 4 weeks. Clinical photographs were taken at the start and then at four weekly intervals till 12 weeks. The follow up was recorded for adverse effects, improvement status, recurrence and quality of life.

**RESULTS**

We included 50 untreated patients of *Xanthelasma palpebrarum*, group A had 11 male and 14 females, group B had 8 male and 17 females. Age of the patients were between 25 and 65years and the duration of disease had a range of 2 months to 5 years in both the groups. On investigation out of 50 patients 9 (18%) patients had increased total cholesterol levels, remaining 41(82%) had desirable levels of total cholesterol, confirming that it is not only dyslipidaemia as popularly known etiopathogenetic cause rather it is multifactorial.

Clinical cure assessment was done by analyzing chronological photographic pictures taken during course of treatment

Treatment efficacy was graded on a 5 point clearing scale:

- 0 – No improvement
- 1 –Faint (1–25% clearing)
- 2 –Fair (26–50% clearing)
- 3 –Good (51–75% clearing)
- 4 –Excellent (76–100% clearing)

Safety evaluation included clinical assessment of dyspigmentation and scarring. The patients’ subjective assessments regarding treatment outcome and willingness to repeat the procedure in case of recurrence were also obtained.

Assessment of QUALITY OF LIFE (QOL); There was no organic symptomatology pertaining to visual obstruction or dermatopathology in any of our cases. All the patients irrespective of any age group felt depressed because of *Xanthelasma palpebrarum* lesions. Few of the patients considered the Xanthelasma lesions to be a depigmentary disorder i.e Vitiligo, which is even a harsher social stigmata .

Patients started feeling satisfied in the regression phase of the lesions and they were relieved of depressive state of the psyche with good and excellent grade of response as per their perception. They were elated with complete clearance of the lesions because they felt the cosmetic disfigurement is stigma to their personality and was hampering their day to day

activity, self image, interpersonal relationship, public appearance and socialization.

Table 1 shows both the groups show that 84% and 80% respectively had desirable serum cholesterol levels, emphasizing that many more etiological attributers play role in pathogenesis of *Xanthelasma palpebrarum*.

Table 2 shows Out of the total 25 patients of group A, 11 (44%) showed an excellent response, 2 (8%) patients showed good response, 3(12%) patient had fair response, another 9(36%) patients had faint response. In comparison to this in Group B, 15 (60%) patients showed excellent and 4(16%) patient had good response, 5 (20%) patients showed fair response, 1(4%) patient had faint response. More than 50% response i.e. good (grade 3) and excellent (grade 4) was considered as appreciable clearance. P value for good and excellent response was 0.343, which was statistically not significant.

Table 3 shows Recurrence rates were observed for 12 months of follow up. Both group A and B had no recurrence at the end of 3 months. In group A, 3 patients at the end of 6<sup>th</sup> month, 2 patients at 9<sup>th</sup> month and 6 patients at 12<sup>th</sup> month of follow up had reappearance of lesion in 16 patients who showed clearance. In group B, 2 patients had recurrence each at 9<sup>th</sup> month, and 12<sup>th</sup> months of follow up in 24 patients with the clearance, P value is 0.024 (<0.05) and is statistically significant. Most common complication was burning sensation immediately after application of topical chemocauterants and almost all patients experienced mild burning sensation. Other side effects were hypopigmentation and hyperpigmentation. At the end of 12 weeks 2 patients in group A and 5 in group B had hypopigmentation and 2 patients in group A and 3 in group B had hyperpigmentation.

**Table 1 Distribution Of Patients According To Total Cholesterol Level:**

Total serum cholesterol (mg/dl)	Group A		Group B		$\chi^2$	P valve
	No.	%	No.	%		
Desirable(<200)	21	84	20	80	0.098	0.754
Borderline (200-239)	1	4	2	8	1.333	0.248
High(≥240)	3	12	3	12	0	1

**Table 2 Distribution of patients according to final response grades**

Grade	Group A		Group B	
	No.	%	No.	%
Grade 1	3	12	0	0
Grade 2	6	24	1	4
Grade 3	5	20	9	36
Grade 4	11	44	15	60

	Group A	Group B
Total no. of Patients	25	25
Appreciable clearance	16(64%)	24(96%)
$\chi^2$	0.896	
p value	0.34385653	

**Table 3 Recurrence Amongst Patients With Appreciable Response**

Follow Up	Group A	Group B
3 <sup>rd</sup> month	0	0
6 <sup>th</sup> month	3	0
9 <sup>th</sup> month	2	1
12 <sup>th</sup> month	6	1
Total	11	2

$\chi^2$	5.048
p value	0.02465438

**DISCUSSION**

There are numerous methods currently available for the management of *Xanthelasma palpebrarum*. Use of Phenol as chemocauterant in *Xanthelasma palpebrarum* was done for the first time to the best of our knowledge. Our study compared efficacy and safety of 50% Trichloroacetic acid in group A and 88% Phenol in *Xanthelasma palpebrarum* in group B. Treatment with 50% Trichloroacetic acid gave an appreciable response in 64% of the patient and was associated with very little side effects. Response rate of Group B patients was comparatively higher i.e 96%. Recurrence has been observed in 11 out of 16 who had appreciable response i.e. grade 3 and 4, in group A whereas lesions recurred in 2 out of 24 patients with appreciable response in group B. The burning sensation and other side effects, associated with both the treatment modalities were minimal. The previous studies on efficacy of Trichloroacetic acid in *Xanthelasma palpebrarum* at different concentrations has given the comparable results with our study. Mourad B *et al.*, (2015) conducted a study to assess the clinical efficacy and tolerability of different concentrations of topical Trichloroacetic acid (TCA) vs. Carbon dioxide Laser in the treatment of patients with *Xanthelasma palpebrarum*. The study found that both Trichloroacetic acid peeling 70% and Carbon dioxide Laser ablation were highly effective and well tolerated. The study by Laura J. Haygood *et al.*, (1998) in thirteen patients with 100% Bichloracetic acid showed encouraging results. Efficacy was assessed over a follow-up period of 7 months to 10.5 years (average, 64 months). Eighty-five percent of patients experienced initial complete clearing, and 72% of their lesions did not require retreatment over an average period of 68 months. The study concluded that Topical bichloracetic acid is a viable alternative to other modalities in the management of *Xanthelasma palpebrarum*. Advantages with 100% Bichloracetic acid include simplicity, cost-effectiveness, speed, safety, and efficacy.

P. S. Cannon *et al.*, (2010) studied the efficacy of topical trichloroacetic acid (TCA) 95% on 51 patients, 43 had been given bilateral Trichloroacetic acid treatment. The success rate for Trichloroacetic acid was 61% at a mean follow-up of 31.8 months where as in our study with TCA appreciable clearance was observed in 64% of patients.

Nahas *et al.*, (2009) in his study on Twenty-four patients with *Xanthelasma palpebrarum* with 70% Trichloroacetic acid, eleven patients (45.8%) had an excellent result, 8 (33.3%) a good result, and 5 (20.8%) had a satisfactory result. Where as in our study 44% had excellent and 20% had good response with 50% Trichloroacetic acid. All patients reported an improved final cosmetic result. Six patients (25%) treated with 70% Trichloroacetic acid had a recurrence 6 months after treatment. In our study recurrence is seen in 11(68%) out of 16 patients within 12 months of follow up.

Studies on use of Phenol in freckles vitiligo and alopecia areata have been done. Full strength phenol (88%) is used as a medium depth chemical peelant for facial rejuvenation and as a spot peelant for treating stable vitiligo and alopecia areata is based on post inflammatory hyperpigmentation induced by chemical wounding with 88% phenol (Savant, S.S. 2008; Yáñez, J. *et al.*, 2004; Kasraee, B. 2002). But to best of our knowledge no previous studies have been published on use of phenol in *Xanthelasma palpebrarum*.

**CONCLUSION**

In conclusion, both topical 50% Trichloroacetic acid and 88% Phenol are effective in the management of *Xanthelasma palpebrarum*. Phenol gave delayed response but less recurrence rates as compared to 50% topical Trichloroacetic acid. The side effects were statistically equivocal in both the groups.

**REFERENCE**

1. Chhetri, M.K., Chowdhary, N.D., De, B. (1967). *Xanthelasma palpebrarum*. J Asso Phy Ind, 15(9),405-12.
2. Gangopadadhya, D. N., Dey, S. K., Mitra, C., Dayamay, P., & Chaudhuri, S. (1998). Serum lipid profile in xanthelasma. Indian Journal of Dermatology, 43(2), 53-57.
3. Bergam, R. (1994, Feb). The pathogenesis and clinical significance of *Xanthelasma palpebrarum*. J Am Acad Dermatol, 30, 236-42.
4. Vacca, J. B., Knight, W. A., & Broun, G. O. (1959). Clinical observations regarding xanthelasma. Annals of internal medicine, 51(5), 1019-1031.
5. Segal, P., Insull, J. W., Chambless, L. E., Stinnett, S., Larosa, J. C., Weissfeld, L., ... & Little, J. A. (1986). The association of dyslipoproteinemia with corneal arcus and xanthelasma. The Lipid Research

- Clinics Program Prevalence Study. Circulation, 73(1 Pt 2), 1108-18.
6. Wolff, E., & Xantheasma, P. (1951). Tumor of sebaceous glands. Br J Dermatol, 63,296-302.
  7. Thompson, J.A., (1965). Xantheasma associated with thyrotoxicosis. J Clin Endocr,25: 758-60.
  8. Bergman, R., Kasif, Y., Aviram, M., Maor, I., Ullman, Y., Gdal-On, M., & Friedman-Birnbaum, R. (1996). Normolipidemic *Xantheasma palpebrarum*: lipid composition, cholesterol metabolism in monocyte-derived macrophages, and plasma lipid peroxidation. Acta dermato-venereologica, 76(2), 107-110.
  9. Mourad, B., Elgarhy, L. H., Ellakkawy, H. A., & Elmahdy, N. (2015). Assessment of efficacy and tolerability of different concentrations of trichloroacetic acid vs. carbon dioxide laser in treatment of *Xantheasma palpebrarum*. Journal of cosmetic dermatology, 14(3), 209-215.
  10. Haygood, L. J., Bennett, J. D., & Brodell, R. T. (1998). Treatment of *Xantheasma palpebrarum* with bichloroacetic acid. Dermatologic surgery, 24(9), 1027-1031.
  11. Cannon, P. S., Ajit, R., & Leatherbarrow, B. (2010). Efficacy of trichloroacetic acid (95%) in the management of *Xantheasma palpebrarum*. Clinical and Experimental Dermatology: Clinical dermatology, 35(8), 845-848.
  12. Nahas, T. R.M.D., Marques, J. M.D., Nicoletti, A. M.D., Cunha, Marcos M.D., Nishiwaki-Dantas, M. C.M.D., (2009). ATrichloroacetic Acid. Ophthalmic Plastic & Reconstructive Surgery, 25 (4), 280-283
  13. Savant, S.S. (2008). Therapeutic wounding. In: Savant SS, editor. Textbook of Dermatosurgery and Cosmetology. 2nd ed. India: ASCAD,370-7.
  14. Yáñez, J., Vicente, V., Alcaraz, M., Castillo, J., Benavente-García, O., Canteras, M., & Teruel, J. A. L. (2004). Cytotoxicity and antiproliferative activities of several phenolic compounds against three melanocytes cell lines: relationship between structure and activity. Nutrition and cancer, 49(2), 191-199.
  15. Kasraee, B. (2002). Peroxidase-mediated mechanisms are involved in the melanocytotoxic and melanogenesis-inhibiting effects of chemical agents. Dermatology, 205(4), 329-339.