

CRYOTHERAPY IN PSORIASIS

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ABSTRACT

As there are very few publications on the use of cryotherapy in the treatment of psoriasis, a clinical study was used to determine its efficacy in small plaque psoriasis.

Fifty patients with a clinical diagnosis of "chronic plaque type psoriasis" and with two psoriatic plaques of the same size and severity on similar areas of the body were selected for treatment. One plaque was sprayed with liquid nitrogen every week until there was an improvement and the other plaque was untreated as a control.

Thirty one patients (62%) showed complete resolution, nine (18%) had moderate resolution, five (10%) had mild resolution and five patients showed no improvement. Only one complication, hypopigmentation, occurred.

We suggest that cryotherapy is safe to use in the treatment of small plaque psoriasis.

INTRODUCTION

Cryotherapy is the application of intense cold to cause tissue necrosis by rapid freezing.¹¹ It has many advantages being rapid, easy and safe with little or no pain.¹² Usually it does not require an operating theatre, local anaesthesia, sutures and dressings or sterile techniques.¹³ At present there are no drugs or methods of treatment which will affect safely the course of psoriasis and induce permanent remission¹⁴ and so cryotherapy was considered as a possibility to be evaluated.

PATIENTS AND METHODS

The study was conducted on 25 male and 25 female outpatients with chronic plaque psoriasis at-

tending the Dermatology and Andrology Department, Benha Faculty of Medicine, between December 1997 and December 1998. Ages ranged from 13 to 67 years and plaque sizes from one to five centimetres in diameter.

On each patient two psoriatic plaques of the same size and severity were selected on similar areas of the body. The patients were not using any topical or systemic therapy for psoriasis and they were instructed not to treat the sites during the study period. One plaque was sprayed each week with liquid nitrogen until there was an observable improvement; the other plaque was used as an untreated control. The freezing time ranged from nine to fifteen seconds depending upon the size of the plaque. Routine topical antibiotic therapy (fucidin cream) was given twice daily for one week after each session of cryotherapy.

The patients were re-examined on the second day to assess blister formation and then at weekly intervals.

RESULTS

All patients developed blisters on the treated sites. Clinical evaluation of the results was made by assessment of erythema, induration and scaling and was graded as follows:

1. Complete resolution: absence of erythema, induration and scaling.
2. Moderate resolution: light pink, rare scale, slight elevation.
3. Mild resolution: red, defined scales and moderate elevation.
4. No resolution: very red, heavy scales, marked ridge.

Thirty one patients (62%) showed complete resolution, nine patients (18%) had moderate resolution, five (10%) had mild resolution and five others had no resolution. Generally the improvement was better in younger patients and in patients with the smaller lesions. [Tables 1]

The complication of hypopigmentation occurred only in cases of complete resolution and was more common in younger patients with small lesions requiring fewer and shorter sessions. [Tables 2, 3]

Table - 1 : The relation of age of the patients and size of the lesions to the results of Cryotherapy in 50 patients with chronic plaque psoriasis.

Response	Resolution		Age of Patients (years)	Size of Lesions (cm ²)
	Patients	%		
Complete	31	62	33.7 ± 15.6	1.9 ± 0.74
Moderate	9	18	47.5 ± 13.4	3.5 ± 0.52
Mild	5	10	61.4 ± 03.36	4.2 ± 0.44
No	5	10	59.4 ± 07.3	5.0 ± 0.00

Table - 2 : The relation of age, size of lesions and number and duration of sessions to the pigmentary changes.

	Hypopigmentation		No complication		t	p
	X	SD	X	SD		
Age	37.3	15.7	54.1	11.5	4.06	< 0.001
Size of lesion /cm ²	1.86	0.73	4.05	0.75	10.1	< 0.001
Number of sessions	2.2	0.45	3.7	0.47	10.8	< 0.001
Duration of Session/sec.	9.8	0.79	13.5	0.14	13.39	< 0.001

Table - 3 : The relation of degree of resolution to the pigmentary changes.

Complication	Results				Total
	Complete resolution	Moderate resolution	Mild resolution	No resolution	
Hypopigmentation	30	0	0	0	30
No complication	1	9	5	5	20
Total	31 62%	9 18%	5 10%	5 10%	50

DISCUSSION

Cryotherapy in psoriasis was first evaluated in 1987 by Scoggins[5] who reported a response rate of 67% to 80% from 35 patients. Later Nouri et al [6] treated nine patients with clinically diagnosed small plaque psoriasis (plaque sizes 1-5 cms diameter) and obtained complete resolution in five patients (56%), substantial resolution in two patients (22%) mild resolution in one patient and no resolution in the remaining patient. Three of the five patients with complete resolution developed hypopigmentation and atrophy at the treated sites; one patient developed a mild secondary bacterial infection.

Thus, on a slightly larger scale, our results parallel those of Nouri et al but were not quite as successful as those of Scoggins. Hypopigmentation occurred in 30 of the 31 patients in which we obtained complete resolution but there was no atrophy or secondary bacterial infection, possibly due to the topical antibiotic used after each session of cryotherapy.

It seems likely that cryotherapy mediates the resolution of plaques by inducing normal re-epithelization following the physical destruction of the lesions, shortening of the elongated dermal papillae¹⁷¹ and a reverse Köbner phenomenon¹⁸¹

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