EVALUATION OF A SIMPLIFIED PROTOCOL OF STEROID INJECTIONS FOR NAIL PSORIASIS

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ABSTRACT

Objective: To evaluate the efficacy of a modified regimen of intralesional steroid injection therapy for the treatment of nail psoriasis and to assess the side effects of this regimen.

Design: Quasi-experimental study.

Place and Duration of Study: Dermatology department of Military Hospital Rawalpindi from Feb 1999 to Jan 2001.

Patients and Methods: Patients having psoriatic nail dystrophy, reporting in skin department of Military Hospital Rawalpindi were registered. The features accounted for were pitting, onycholysis, subungual hyperkeratosis, ridging, thickening and color change. Injection of Triamcinolone acetenoid (10mg/ml) was given into the nail bed and matrix following ring block anesthesia. A second injection was given after 02 months if warranted by poor response. The follow up period ranged upto 06 months.

Results: Eighty three digits were injected in 35 subjects. Pitting was the commonest presenting feature seen in 71 (85.5%) digits and improved in 51 (71.8%) digits. Onycholysis was seen in 37 (44.6%) digits and improved in 25 (67.6%) digits. Subungual hyperkeratosis was seen in 57 (68.7%) digits and improved in all cases. Other features like longitudinal ridging, thickening and yellow oil drop like discoloration also improved considerably. The side effects of this regimen were minimal.

Conclusion: This regimen has been found to be effective and safe for the treatment of psoriatic nail dystrophy.

Keywords: Psoriasis, nail psoriasis, intralesional steroids

INTRODUCTION

Nail changes are found with cutaneous disease in 25-50% of patients of psoriasis [1]. There is no sex predilection but patients above forty years are affected twice as often as those under twenty years of age [2]. Some forms are particularly destructive and incapacitating and may lead to a degree of functional and social handicap [3]. Nail changes are significantly more common in patients who have moderate to severe psoriasis as compared with those having mild psoriasis and in patients who have psoriasis greater than five years. Pitting is the most common clinical aberration seen in psoriatic nails, discoloration, subungual hyperkeratosis, thickening, ridging and onycholysis are also common [1-3]. The clinical picture of psoriasis of nails varies according to the disease site. Pits, ridges and grooves are due to the psoriasis of nail matrix. Where as onycholysis, subungual hyperkeratosis and discoloration are attributable to the nail bed or hyponychium [2,4,5]. Nail changes are seen more commonly with psoriatic arthropathy especially with distal interphalyngeal joint disease [6]. Skin and nail disease severity does not co-relate with joint severity, joint activity or functional status [7].

A wide range of systemic and topical treatments have been tried and assessed with respect to their benefit to nails independent of their effects at other sites [8-20]. Locally

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injected steroids are one of the standard therapies offered for nail psoriasis [19]. In spite of this there have been only a few formal trials of its efficacy.

The common practice of giving intralesional steroid injections more frequently containing weaker solutions of steroid, is a considerable undertaking both for patients and doctors [21]. In most of the common regimens in use, injections of triamcinolone acetenoid (2.5mg/ml) are given monthly for six months and then every two months for the final 6-12 months period [21]. A modified regimen of nail steroid injections in the treatment of nail psoriasis was studied in our population. The rationale for the regimen in this study was to see that a stronger solution of steroid given less frequently might produce a satisfactory outcome, comparable to common practice of much more frequent treatment using weaker solutions.

PATIENTS AND METHODS

This study was performed in an outpatient section of dermatology department of Military Hospital Rawalpindi. It was designed as an open trial of an established therapy using modified regimen. Patients of any age and sex having nail psoriasis of more than one digit in either hand were selected and registered. A total number of 83 digits, in 31 patients, were studied. Patients of psoriasis receiving systemic therapy or those who have received systemic therapy for psoriasis within previous three months were excluded. Diagnosis of nail psoriasis was made on clinical grounds and in co-relation with skin lesions else where on the body. In doubtful cases KOH smears, fungus culture and nail biopsies were done to exclude fungal infections and lichen planus. In selected patients, having nail psoriasis, 2-3 affected digits were marked for intralesional steroid injections. The features accounted for were pitting, onycholysis, subungual hyperkeratosis, ridging, thickening and color change. Photographs of all affected digits were taken before giving the injection and two months after therapy for comparison. These photographs were taken with fixed photographic specifications and were used to compare the response of treatment along with clinical assessment. No topical or systemic therapy was given during the period of observation. Digits were anaesthetised with 2% lignocain solution without adrenaline using standard proximal ring block technique. Triamcinolone acetenoid (10mg/ml) 0.1 ml was injected with 1 ml insulin syringe in each of four periungual sites ensuring symmetrical delivery of steroid to nail matrix and nail bed.

Photographs before and 02 months after treatment were also compared to assess the progress. A second injection was offered if indicated by poor response after two months. Side effects of the intralesional steroids were noted during the treatment and were recorded.

Data was analyzed by using SPSS version-11.Categorical numbers including features of nail psoriasis were presented by frequencies and percentages.

RESULTS

Eighty three digits were injected in 31 subjects. 26 (84%) were male and 05(16%) were female. Follow-up period was upto 6 months.

Pitting was the commonest change noted and was seen in 71 (85.5%) digits which improved in 51 (71.8%) digits. Eighteen (25.4%) digits with pitting showed complete resolution where as the remaining 33 (46.5%) digits showed partial response. Onycholysis was present in 37 (44.6%) digits and improved in 25 (67.6%). Complete resolution of onycholysis was seen in 12 (32%) digits where as partial resolution was noted in 13 (35%) digits. Twelve (32%) digits with onycholysis showed no response. Subungual hyperkeratosis was present in 57 (68.7%) digits and showed 100% resolution, although in two (3.5%) digits the resolution was partial. Longitudinal ridging was present in 58 (70%) digits and improved in 54 (93%) digits. The improvement was complete in 43 (74%) digits

and was partial in 11 (19%) digits where as 4 (7%) cases showed no response. Yellow oil drop like discoloration was seen in 41 (49%) digits and improved in all instances (100%). Improvement was complete in 33 (80.5%) digits where as it was partial in eight (19.5%) digits. Thickening of nails was seen in a total number of 18 (21.7 %) digits and improved in 16 (89%) digits. The resolution was complete in 11 (61.1%) where as it was partial in 5 (27.8 %) digits. Two (11%) of the digits showed no response (tables-1, 2).

Loss of nail plate was seen in 09 digits. Six of these digits had re-growth of the normal nail plate after two months. Three digits however required a second injection after two months. Two of the digits showed spooning of the nail plate besides other nail changes of psoriasis. This change remained unresponsive to the treatment. Three digits however required a second injection after two months and warranted another injection. These digits started showing response after second injection and the response was included in the final results.

Table-1: Frequency of features of nail psoriasis

Feature (N 83)	No. of Digits	Percentage
Pitting	71	85.5%
Onycholysis	37	44.6%
Subungual Hyperkeratosis	57	68.7%
Ridging	58	70%
Thickening	18	21.7%
Discoloration	41	49%

DISCUSSION

Nail steroid injections are one of the important and effective modalities of treatment for nail psoriasis. The aim of this study was to assess the efficacy of a modified regimen of steroid injections in the treatment of nail psoriasis in our population. The rationale for the regimen in this study was that a stronger solution of steroid given less frequently might produce a satisfactory outcome as compared to the practice of much more frequent injections using weaker solutions [19] (2.5mg/ml triamcinolone acetonoid monthly for 6-12 months).This study demonstrates the likely therapeutic benefit from a limited course of injected steroids for nail psoriasis.

In all previous studies steroids have been delivered solely to the proximal portion of the nail apparatus either by incorporation into the proximal nail fold or by injection directly into the matrix [19]. In this study it has been shown that the delivery of steroids to the nail bed is beneficial for the treatment of features such as subungual hyperkeratosis, onycholysis and thickening of the nail plate, which are attributed to the disease of nail bed [4, 5].

In almost all studies, different aspects of nail dystrophy are attributed either to nail matrix or the nail bed. Onycholysis was the main nail bed feature which was studied previously [21]. In this study other features of nail bed disease i.e subungual hyperkeratosis and nail plate thickening were also examined and were found to respond very well to injection of steroid in the nail bed.

Nail matrix disease is manifested as pitting, ridges and yellow oil drop discoloration of the nail [4]. In this study it is seen that the yellow oil drop like discoloration of nail was the feature most responsive to steroid injections (100%). The next to follow were the ridges (93%). The pitting was the last in row (71.8%).

The results of some previous studies reveal the chances of complete resolution of pitting with this form of therapy [20], however complete resolution was not the norm in this study. Only 25% of the digits were cured of this feature, with another 46.5% showing partial resolution. In this study the resolution of features has been interpreted as complete and partial resolution in contrast to other studies where no such demarcation has been made [21]. Comparison with other studies using other techniques is given in (table-3).

Base line photographs of the affected digits and control digits were taken with fixed photographic specifications. Comparison of

Table-2: Response of different features of nail psoriasis to steroid injection 06 months post therapy (n=83).

Feature	No. of Digits	Subjects		
		Partial Response	Complete Response	No Response
Pitting	71	33(46.5%)	18(25.4%)	20(28.2%)
Onycholysis	37	13 (35%)	12(32%)	12(32%)
Subungual Hyperkeratosis	57	2 (3.5%)	55(96.5%)	0 (0%)
Ridging	58	11(18.9%)	43(74%)	4(7.8%)
Thickening	18	5(27.7%)	11(61.1%)	0 (0%)
Discoloration	41	8(19.5%)	33(80.5%)	2(11.1)

Table-3: Comparison of trials of nail steroid injections for treatment of psoriatic nail changes.

	Present Study	De Berker	Gerstein	Abell	Bleeker	Peachey
Type of delivery	Needle	Needle	Needle	Port-o-jet	Port-o-jet	Port-o-jet
Steroid	Triamcinolone acetonide 10 mg/ml	Triamcinolone acetonide 10 mg/ml	Triamcinolone acetonide 10 mg/ml	Triamcinolone acetonide 5 mg/ml	Triamcinolone acetonide 5 mg/ml	Triamcinolone acetonide 5 mg/ml
Site	Matrix& nailbed	Matrix& nailbed	Matrix	Proximal nail fold	Proximal nail fold	Proximal nail fold
Regimen	4 x 0.1 ml	4 x 0.1 ml	1 x 0.2 ml	1-4 x 0.1 ml Weekly for 3 weeks	0.2-0.3 ml	1 x 0.1 ml Every 4- 6 wk
Follow up	2-6 months	3-17 months	14 months	0-24 months	5-20 months	1 month
No. of patients	31	19	4	58	400	28
No. of nails	83	46	17	Not given	569	28
Post Therapy Improve						
Pitting	85.5%	45%	combined	91%	68%	86%
			Features 35%			
Onycholysis	44.55%	50%		50%	34%	19%
Ridging	69.8%	94%		-	-	
Thickening	21.6%	83%		No result	11%	no result
Subungual Hyperkeratosis	68.7%	100%		no result	no result	no result

photographs of affected and control digits prior to and 02 months after the treatment under same photographic specifications, provided useful visual evidence for judging the progress.

Side effects of the therapy were minimal. Ring block local anesthesia was the most painful part of the treatment in most instances. Subungual haematoma formation was the most common side effect seen but remained asymptomatic. Focal pain and paraesthesia were seen in a few cases which disappeared completely within a period of two months. Besides these, no other complications were noted in this regimen.

CONCLUSION

In our study the modified regimen proved to be effective in the improvement of features of psoriatic nail dystrophy and was with out any significant discomfort to the patient. So it is recommended that this therapeutic regimen can be effectively and safely applied for the treatment of nail psoriasis in selected cases especially for cases who are resistant to other modalities of treatment.

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