

Frequency and Patterns of Nail Changes in Psoriasis Vulgaris Patients Reporting to Civil Hospital Karachi

Reema Mirza, Humaira Talat, Deepa Mohanlal, Tayyaba Imran, Madiha Sajid, Maria Mansoor

ABSTRACT

OBJECTIVES: To determine the frequency of nail changes in Psoriasis Vulgaris patients and to document the patterns of these nail changes in patients reporting to Civil Hospital Karachi (a tertiary care hospital).

METHODOLOGY: This cross-sectional study was carried out at Dermatology Department – Civil Hospital Karachi from January 2017 – June 2018. The study included 100 clinically diagnosed cases of Psoriasis Vulgaris of either sex. The patients were enrolled irrespective of age, family history, duration and severity of disease. These patients were either admitted in ward or presented in OPD of Civil hospital Karachi. A detailed dermatological examination of these patients was carried out. The results were recorded in preformed pro-forma.

RESULTS: The study concluded that out of a total of 100 patients of Psoriasis Vulgaris, there were 54 (54%) males and 46 (46%) females. 79 (79%) patients had nail changes while remaining 21 (21%) had normal nails. Nail ridging was found in 75 (94.93%), pitting in 70 (88.6%), discoloration in 70 (88.6%), onycholysis in 60 (75.94%), subungual hyperkeratosis in 56 (70.88%) of patients. Other nail findings included paronychia, twenty nail dystrophy, Beau's lines, longitudinal melanonychia, shiny nails and splinter hemorrhages.

CONCLUSION: Nail changes are common Psoriasis Vulgaris. Nail ridging, pitting, discoloration being the most common. Other findings included onycholysis, oil drop sign, subungual hyperkeratosis, paronychia, twenty nail dystrophy, beau's lines and splinter hemorrhages.

KEYWORDS: Nail Abnormalities; Psoriasis.

This article may be cited as: Mirza R, Talat H, Mohanlal D, Imran T, Sajid M, Mansoor M. Frequency and Patterns of Nail Changes in Psoriasis Vulgaris Patients Reporting to Civil Hospital Karachi. J Liaquat Uni Med Health Sci. 2020;19(03):195-7.
doi: 10.22442/jlumhs.201930689

INTRODUCTION

Psoriasis vulgaris is a chronic inflammatory cutaneous condition¹. The most characteristic lesions consist of red, scaly, sharply demarcated, indurated plaques. These are present particularly over the extensor surfaces and scalp². Psoriasis may affect any part of the nail unit. It may involve the nail matrix, nail bed and hyponychium. Nail matrix involvement results in production of pits, ridges and grooves of nail plate. Nail bed disease presents with subungual "Oil drops", subungual hyperkeratosis, splinter hemorrhages and distal onycholysis. The nails grow more quickly in patients with psoriasis³. Nail changes disturb the daily and occupational activities and contribute to worse the quality of life⁴. Nail involvement can be seen in upto 50% of psoriasis patients⁵. Over a lifetime, this proportion may cumulatively increase to 80-90%⁶. The purpose of this study was to determine the frequency of nail changes in patients suffering from psoriasis vulgaris and document the pattern of nail changes in these patients

METHODOLOGY

This was a cross sectional study. It was conducted at Dermatology Department - Civil Hospital, Karachi (A

tertiary care hospital affiliated with Dow University of Health Sciences) from January 2017 to June 2018, during this period 100 clinically diagnosed cases of psoriasis were enrolled. These patients were either admitted in dermatology ward or presented in OPD Civil Hospital, Karachi. Diagnosis of Psoriasis Vulgaris was made on history and clinical examination. Skin biopsy was performed in doubtful cases. Routine and relevant investigations were carried out whenever required e.g. Hematological, Biochemical profile, nail clipping for patients suspected to be suffering from onychomycosis. All findings were recorded in a preformed pro-forma.

All were diagnosed cases of psoriasis vulgaris. Patients of both gender, all age groups suffering from different variants of psoriasis and psoriatic arthritis were included. Patients were enrolled irrespective of duration, family history or severity of disease. Patients with any concomitant dermatological or systemic disease were excluded.

Statistical Analysis: A database of the filled in questionnaires was developed in the EPI Info 6, a word processing database and statistical programme for public health. The proportions (percentages) of different criteria related to a particular classification of

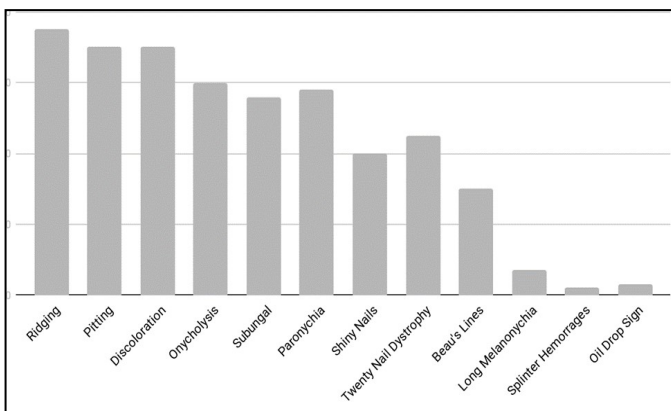
tables were analyzed by the Chi Square test statistics to compare difference in percentages, where it was valid. For the data where expected frequency was less than 5, a Yate's corrected Chi Square test was applied. The results were considered significant where level of significance was $P \leq 0.05$, otherwise it was not significant.

RESULTS

A total of 100 patients fulfilling the selection criteria were enrolled for the study. Mean age was 37.91 years with minimum age of 4 years and maximum age 66 years. Out of total of 100 patients there were 54 (54%) males and 46 (46%) females. The study concluded that out of a total of 100 patients 79 (79% $p=0.05$) had nail changes while remaining 21 (21%) had normal nails. Out of these 79 patients, there were 12% patients suffering from psoriasis for less than 1 year, while 32% patients had disease duration between 1-5 years and 56% were suffering from psoriasis between 6- 25 years. Minimum duration of psoriasis was 1 month. Among 79 patients with nail involvement 45 (56.96%) were males and 34 (43.03%) females. Nail ridging was found in 75 (94.93% $p<0.05$) of patients, nail pitting in 70(88.6% $p<0.05$), Discoloration 70 (88.6% $p<0.05$), Onycholysis 60 (75.9%), subungual hyperkeratosis was a feature in 56 (70.8%) of the patients. The other patterns and the frequency of nail changes included paronychia 58 (73.4%), shiny nails 40 (50.63%), twenty nail dystrophy 45 (56.9%), Beau's lines 30 (37.9%), Longitudinal melanonychia 7 (8.86%), Oil drop sign 3(3.79%) and splinter hemorrhages 2 (2.53%).

Hence the most frequent nail changes were nail ridging 75 (94.93%), pitting and discoloration 70 (88.6%). These were followed by onycholysis, subungual hyperkeratosis, paronychia, twenty nail dystrophy and Beau's lines.

FIGURE I: NAIL CHANGES



DISCUSSION

Nail psoriasis is not simply a cosmetic problem. It affects the structure and function of nail, resulting in

psychological problems. Psoriasis has a worldwide prevalence of approximately 1% to 3%⁷. Nail involvement in psoriasis is common, with reported incidences varying from 10% to 78%⁸. Different clinical presentations of nail are associated with psoriasis according to nail structure apparatus⁹. Nail dystrophy may be seen in association with all types of psoriasis or occasionally as an isolated feature. Nail psoriasis is associated with more extensive psoriasis, longer disease duration, family history and presence of psoriatic arthritis². Nail psoriasis has been proposed as a predictor for the development of psoriatic arthritis¹⁰. In our study also, duration of psoriasis was comparatively longer in majority of patients with psoriatic nail changes. The prevalence of nail psoriasis in patients with psoriatic arthritis is high ranging from 50% to 87%^{11,12}. The clinical signs result from involvement of the nail matrix, and nail bed, each of which can lead to distinct clinical features¹³. The overall nail changes in our study were 79%. All patients with clinically diagnosed psoriasis were included irrespective of family history, duration, psoriatic arthritis or severity of disease. As shown in Figure I, the most common nail changes in our study were ridging (94.93%) and pitting (88.6%) - changes due to nail matrix disease. Other common nail changes encountered included discoloration of nails, onycholysis, subungual hyperkeratosis, paronychia, twenty nail dystrophy, Beau's lines. Less common changes included splinter hemorrhages, longitudinal melanonychia and perilunar erythema. An extensive study of 1738 sufferers of psoriasis¹⁴ revealed that 79.2% had changes in nails and estimated incidence of psoriatic changes in nails upto 90%¹⁵⁻¹⁷. These results are comparable with our study results. In another study conducted in Shifa Naval Hospital, Karachi¹⁸ in July 2007 - June 2008, nail changes were present in 71% of patients. The most common nail abnormality observed in this study was pitting followed by onycholysis. Another study conducted in Bosnia showed nail changes in 60.9% patients with psoriasis. Nail pitting was the most common finding followed by discoloration of nail plate and subungual hyperkeratosis¹⁹. Another study conducted in Ziauddin university hospital Karachi²⁰ revealed nail changes were present in 71% of psoriasis patients. Ridging, pitting and roughening of nails were the most common findings in this study.

CONCLUSION

The conclusion supported by results is that nail changes are a common feature in psoriasis vulgaris with ridging, pitting and discoloration being the most common findings. Other frequent findings include onycholysis, subungual hyperkeratosis, paronychia, twenty nail dystrophy and Beau's lines. Frequency and patterns of nail changes in our study are comparable with those in other studies in Pakistan

and internationally.

Ethical permission: Department of Dermatology, DOW Medical University IRB No. DMC/ Derm/20-12-2016/410, dated 20-12-2016.

Conflict of Interest: There was no conflict of interest.

Funding: The study was conducted without any public/private funding.

AUTHOR CONTRIBUTIONS

Mirza R: Data Collection, Abstract, introduction, Results, Discussion writing

Talat H: Conclusion writing

Mohanlal D: Supervising progress of all steps

Imran T: References

Sajid M: Results analysis

Mansoor M: Data Collection

REFERENCES

1. Marina EM, Botarjic C, Tataru DA. Patterns of clinical nail appearances in patients with cutaneous Psoriasis. *Clujul Med.* 2017; 90(1): 22-27. doi: 10.15386/cjmed-679.
2. Burden D, Kirby B. Psoriasis and related disorders. In: Griffiths C, Barker J, Bleiker T, Chalmers R, Creamer D. *Rooks textbook of dermatology*, 9th edition. Chichester: Wiley & Sons, limited; Ltd; 2016. Pg 35.1
3. Dawber R. Fingernail growth in normal and psoriatic subjects. *Br J Dermatol.* 1970; 82: 454-7.
4. Sobolewski P, Walecka L, Dopytalska K. Nail involvement in psoriatic arthritis. *Reumatologia.* 2017; 55 (3): 131-135.
5. Zaias N. Psoriasis of nail. A clinical-pathologic study. *Arch Dermatol.* 1969; 99:567-79.
6. Samman PD. *The nails in disease*, 3rd ed: London: Heinemann, 1978.
7. Armstrong AW, Harskamp CT, Armstrong EJ. Psoriasis and metabolic syndrome: a systematic review and meta-analysis of observational studies. *J Am Acad Dermatol.* 2013; 68: 654-62.
8. Elston DM, Berger TG, James ND. Diseases of the skin appendages. In: Elston DM, Berger TG, James ND. *Andrews diseases of the skin Clinical dermatology*, 11th edition: Elsevier India Pvt Ltd. 2011; p. 770.
9. Ventura A, Mazzeo M, Campione E. New insight into the pathogenesis of nail psoriasis and overview of treatment strategies. *Drug Des Devel Ther.* 2017; 11: 2527-2535. doi: 10.2147/DDDT.S136986.
10. Raposol, Torres T. Nail psoriasis as a predictor of development of psoriatic arthritis. *Actas Dermosifiliogr.* 2015; 106(6): 452-7. doi: 10.1016/j.ad.2015.02.005.
11. Nestle FO, Kaplan DH, Barker J. Psoriasis. *N Engl J Med.* 2009; 361: 496-509. doi: 10.1056/NEJMra0804595.
12. Wilson FC, Icen M, Crowson CS, Mcevoy MT, Gabriel SE, Kremers HM. Incidence and clinical predictors of psoriatic arthritis in patients with psoriasis: a population- based study. *Arthritis Rheum.* 2009; 61(2): 233-9. doi: 10.1002/art.24172.
13. Baran R. The burden of nail psoriasis: an introduction. *Dermatology.* 2010; 221(1): 1-5. doi: 10.1159/000316169.
14. Manhart R, Rich P. Nail Psoriasis. *Clin Exp Rheumatol.* 2015; 33(Suppl 93): S7-S13.
15. Jiaravuthisan MM, Sasseville D, Vender RB, Murphy F, Muhn CY. Psoriasis of nail: anatomy, pathology, clinical presentation and a review of literature on therapy. *J Am Acad Dermatol.* 2007; 57(1): 1-27. doi: 10.1016/j.jaad.2005.07.073.
16. Cohen MR, Reda DJ, Clegg DO. Baseline relationship between psoriasis and psoriatic arthritis, analysis of 221 patients. Department of Veterans Affairs cooperative study group on Seronegative Spondyloarthropathies. *J Rheumatol.* 1999; 26(8):1752-6.
17. Samman PD, Fenton DA. *Samman's The nail in disease*. 5th ed. Oxford; Boston: Butterworth-Heinemann. c1994.
18. Idrees S, Uddin R, Rizvi S, Tahir M. Frequency of nail changes in patients with psoriasis reporting to PNS Shifa Naval Hospital, Karachi. *J Pak Assoc Dermatol.* 2012; 22(4): 315-319.
19. Ovcina-Kurtovic N, Kasumajic-Halilovic E. Prevalence of nail abnormalities in patients with psoriasis. *Our Dermatol Online.* 2013; 4(3):272-74.
20. Ahmed I, Nasreen S. Frequency and patterns of nail changes in patients with psoriasis vulgaris. *J Pak Assoc Dermatol.* 2009; 19(4): 194-199.

AUTHOR AFFILIATION:

Dr. Reema Mirza

(Corresponding Author)

Assistant Professor

Dow University of Health Sciences/ Civil Hospital Karachi, Sindh-Pakistan.

Email: mirza.reema78@gmail.com

Dr. Humaira Talat

Assistant Professor

Dow University of Health Sciences/ Civil Hospital Karachi, Sindh-Pakistan.

Dr. Deepa Mohanlal

Assistant Professor

Dow University of Health Sciences/ Civil Hospital Karachi, Sindh-Pakistan.

Dr. Tayyaba Imran

Assistant Professor

Dow University of Health Sciences (DIMC) Karachi, Sindh-Pakistan.

Dr. Madiha Sajid

Assistant Professor

Dow University of Health Sciences (DIMC) Karachi, Sindh-Pakistan.

Dr. Maria Mansoor

Assistant Professor

Dow University of Health Sciences/ Civil Hospital Karachi, Sindh-Pakistan.