

PSORIASIS – THE RELATIONSHIP BETWEEN NAIL CHANGES, THE EVOLUTION AND THE CLINICAL FORM OF THE DISEASE

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Summary

Psoriatic nail disease can be a part of the clinical features during the evolution of psoriasis, related to the severity of the disease, or it can be a clinical form of psoriasis, where only the nail is affected.

The aim: to identify psoriatic nail alteration by using NAPSİ score (nail psoriasis severity index).

Material and method: a study group of 38 patients between 20-55 years old was selected, during the period December 2006 - December 2007, who were diagnosed with different forms of psoriasis: psoriasis vulgaris (89,48%), psoriatic arthritis (5,26%), palmoplantar pustular psoriasis (5,26%).

Results: in our study, nail alteration was present in 47,37% of the patients with psoriasis and by using the NAPSİ score we observed nail plate alteration in 52,09%, pitting (22,92%) and leuconikia (22,92%).

Conclusions: our results prove the existence of a connection between the degree of nail alteration and the long term evolution of the disease.

Key words: psoriasis, nail changes, NAPSİ.

Rezumat

Psoriazisul unghial poate fi o manifestare în cadrul evoluției bolii psoriazice, corelat cu severitatea bolii sau o formă particulară de psoriazis, cu afectare strict unghială.

Scopul studiului: să se evidențieze modificările unghiale din psoriazis, prin utilizarea scorului NAPSİ (nail psoriasis severity index). Material și metodă: studiul s-a efectuat în perioada 2004 - 2005 pe un număr de 38 de pacienți cu psoriazis, cu vârste cuprinse între 20-55 de ani și forme diferite de psoriazis, respectiv psoriazis vulgar, 89,48%, psoriazis artropatic (5,26%) și psoriazis pustulos palmo-plantar (5,26%). Rezultate: în studiul nostru afectarea unghială este prezentă la 47,37% din pacienții cu psoriazis, iar prin scorul NAPSİ s-a constatat afectarea matricei unghiale în 52,09% prin pitting-uri (22,92%) și leuconikie (22,92%). Concluzii: rezultatele studiului au evidențiat existența unei corelații între gradul de severitate a modificărilor unghiale și evoluția mai îndelungată a bolii.

Cuvinte cheie: psoriazis, modificări unghiale, NAPSİ.

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Introduction

Psoriasis is an inflammatory skin disease characterized by the alteration of the cell-mediated immunity, with T-cell activation and pro-inflammatory cytokines production. Psoriatic nail disease can be a part of the clinical features during the evolution of psoriasis, related to the severity of the disease, or it can be a clinical form of psoriasis, where only the nail is affected. The general pathology of the patients with psoriasis,

as well as nail disorders of different causes can mix with psoriatic nail changes in a variable number of cases. The NAPSİ score (nail psoriasis severity index) is used to quantify nail alteration by combining parameters which measure changes of the nail plate and of the nail bed.

Aim of the study

The authors investigated the degree of nail alteration in patients with psoriasis, by using the

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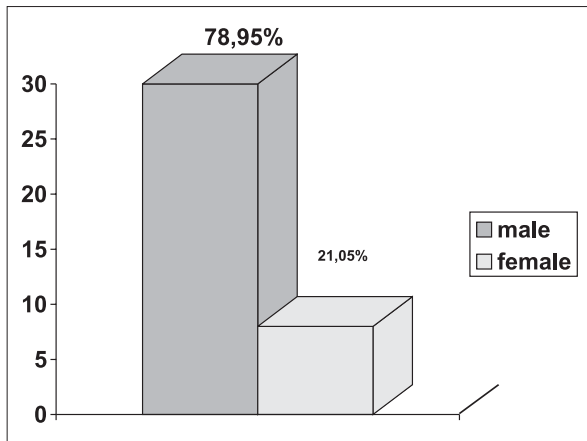


Fig. 1. Gender distribution (male/female)

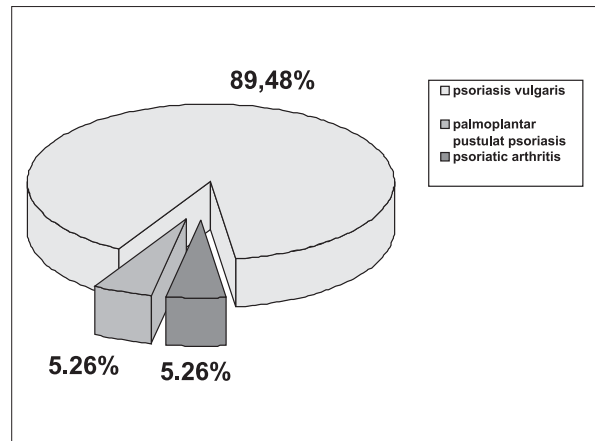


Fig. 2. Distribution of the clinical forms (psoriasis vulgaris/ psoriatic arthritis/ palmoplantar pustular psoriasis)

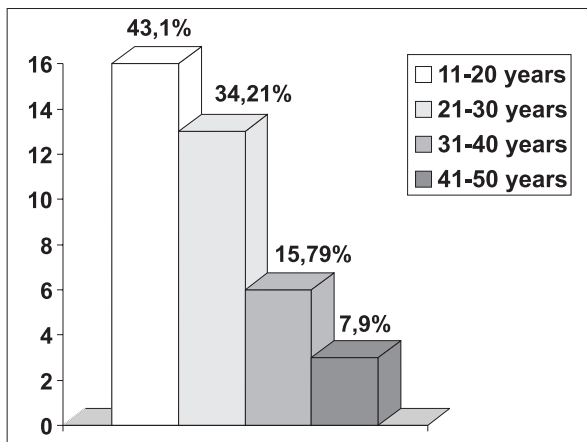


Fig.3. Distribution of age groups

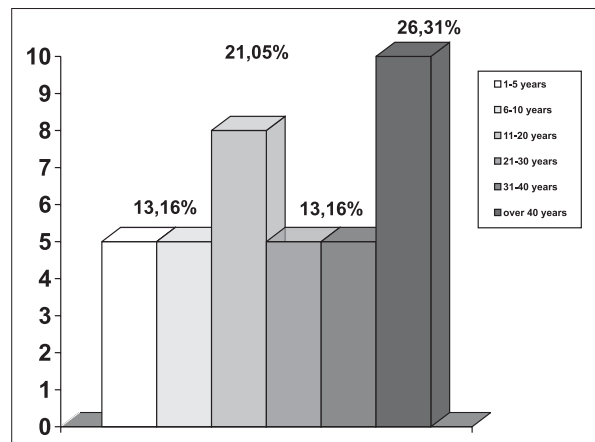


Fig.4. Distribution of age groups related to the duration of psoriasis

NAPSI score and analyzed the relationship between nail changes, evolution and the clinical form in psoriasis.

Materials and methods

The authors selected a study group of 38 patients with psoriasis, between 20-55 years old, admitted to The Clinical Hospital of Sibiu during the period December 2006-December 2007.

The study group was made of 8 women (21,05%) and 30 men (78,95%) (fig. 1).

The role of the genetic factor in the etiology of psoriasis is well recognized in the medical field. The current study group also contains 4 cases in which the genetic heritage was proved (13,16%).

Results

A number of 34 patients (89,48%) in the study group were diagnosed with psoriasis vulgaris, 2 patients (5,26%) with psoriatic arthritis and other 2 patients (5,26%) with pustular palmoplantar psoriasis (fig.2).

The age at the onset of the disease was variable, between 20 and 55 years old. The highest incidence was registered between 11-20 years old (43,1%) (fig.3).

The severity of the disease was well connected to the duration of psoriasis. Over ¼ of the patients (26,31%) were diagnosed over 40 years ago (fig.4).

The NAPSI score (nail psoriasis severity index) allows us to quantify nail alteration in

psoriasis. The nail changes, observed best when using the NAPSİ score, were studied apart for the nail plate and the nail bed. Changes of the nail plate include leuconikia, pits, lunular red spots and crumbling of the nail, while the nail bed can present hyperkeratosis, salmon patches, onycholysis and splinter bed (table I).

Table I. Parameters used in NAPSİ score

Changes of the nail plate	Leuconikia
	Pits
	Crumbling
	Lunular red spots
Changes of the nail bed	Hyperkeratosis
	Salmon patches
	Onycholysis
	Splinter nail bed

The results showed that the male patients were far more affected (78,95%), in contrary with the medical literature data that suggest a relative equal gender distribution.

The severity of the disease was well connected to the duration of psoriasis, to the severe clinical forms and to important nail changes at patients that were diagnosed over 40 years ago.

Nail changes affected mostly the nail plate (47,37%). The most frequent nail plate changes were leuconikia and pits (22,92%), while hyperkeratosis was most observed on the nail bed (20,84%).

Discussions

Psoriatic nail plate affects both genders. It is not lethal, but in severe cases it can have an important psychosocial and functional impact [2, 4, 7]. The nail changes are best observed when using the NAPSİ score. This index allows us to quantify separately the changes of the nail plate and of the nail bed.

Thus, changes of the nail plate include:

- leuconikia (white spots associated with parakeratosis of the nail)
- pits (result from the loss of parakeratotic cells on the surface of the nail) (Fig. 5)
- crumbling of the nail
- lunular red spots (erythematous spots on the nail's lunula)

Changes observed on the nail bed are:

- subungual hyperkeratosis (excessive proliferation of the nail bed which can cause onycholysis);
- salmon patches (yellowish-red drops of the nail bed. This is the most specific change for psoriatic nail disease) [6];



Fig. 5. Patient with psoriatic nail disease (pits)

- onycholysis (white spot associated with the separation of the nail plate from the nail bed. It commences at the distal end of the nail bed, progresses proximally and increases the possibility of mycobacterium colonization).
- splinter nail bed (black longitudinal lines caused by discrete focal hemorrhages between the nail plate and the nail bed. It's considered to be an equivalent of the Auspitz sign which can be noticed in psoriasis of the skin).

Beau's lines can also be observed as transverse lines on the nail caused by intermittent inflammation.

Nail alteration as well as typical psoriatic changes of the periungual skin can be more frequently observed in patients with psoriatic arthritis. This sign can also have a prediction value when estimating the joint lesions, especially for psoriatic distal poly-arthritis.

Most nail changes are present in patients with psoriatic skin lesions. We estimate that 10-55% of the patients with psoriasis have nail alterations, while around 5% have only psoriatic nail disease without any skin lesions. 10-20% of the patients diagnosed with psoriasis have psoriatic arthritis, (fig.6) among which 53-86% reveals nail changes [7].



Fig.6. Psoriatic arthritis

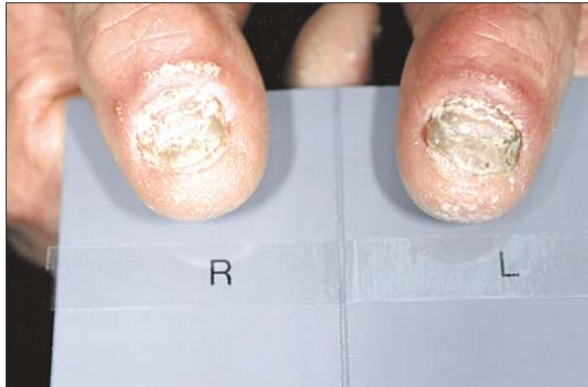


Fig.7 a, b – Patient with severe form of psoriatic nail disease, with mixed alteration of the nail bed and of the nail plate



Fig.8 a, b. Important palmo-plantar nail changes in a patient with psoriasis vulgaris

Likewise, around half of the patients with psoriasis in our study group (47,53%) presented associated nail changes, among which a quarter (26,31%) were diagnosed with psoriasis over 40 years ago (Fig. 7 a, b).

Joint alteration in the study group patients is far less important (5, 26%) then it is specified in medical literature (10-20%). This lack of similarity might be explained by a misdiagnosis of psoriatic arthritis.

The pathology of psoriatic nail disease is not completely understood, but it implies the association of genetic, environmental and immunological factors (T-cell mediated inflammatory reaction). Recent studies proved the connection between psoriasis and some subtypes of HLA-antigens: Cw6, B13, Bw57, Cw2, Cw11 and B27 [1].

Psoriatic nail disease can be a part of the clinical features during the evolution of psoriasis, related to the severity of the disease, or it can be a clinical form of psoriasis, where only the nail is

affected (Fig. 8 a,b). Also, nail alteration in psoriasis can be associated with onychomycosis or paronychia. The differential diagnosis might include nail lichen planus, pityriasis rubra pilaris, alopecia areata, punctate keratoses [1].

The final diagnosis is established by nail biopsy which reveals hyperkeratosis, increase in the granular layer, hemorrhages in stratum corneum, epidermal papillomatous hyperplasia and spongiosis.

The therapy methods used so far do not insure complete healing, but improve the psychosocial impact of the nail disorder.

When treating psoriatic nail disease, one can use:

- occlusive dressing with topical corticosteroids (anti-inflammatory effect, inhibiting polinuclear migration and modifying capilar permeability)
- occlusive dressing with 5-Fluorouracil solution 1% or cream 5% (improves pits and subungal hyperkeratosis)

- topical treatment with Methotrexate in colodium base.
- PUVA therapy might improve skin lesions as well as nail changes. Long term treatment can induce nail discoloration [5].
- local monthly injections with Triamcinolon [3]
- systemic therapy used when treating psoriatic skin lesions might improve nail changes as well.
- surgical or chemical nail ablation.

The method of treatment is to be chosen depending on the clinical form, length of the disease and associated disorders [2, 4, 7].

Conclusions

As mentioned in the medical literature, psoriatic nail changes are more common in patients with medium or severe forms which have evolved for a long period of time.

In our study, nail changes are present in 47,37% of the patients with psoriasis, who present medium or severe forms.

Our results prove the existence of a relationship between the degree of nail alteration and a long term evolution of the disease.

By using NAPSI score, the study shows that the nail plate is slightly more affected (52,09%) than the nail bed, due to pits (22,92%) and leuconikia (22,92%).

The authors consider that using the NAPSI score to quantify nail changes can be a useful and prestigious method when diagnosing psoriatic nail disease.

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