Recommendations for the treatment of nail psoriasis in patients with moderate to severe psoriasis: a dermatology expert group consensus

R.G. Langley,†,* J.H. Saurat,‡ K. Reich§ on behalf of the Nail Psoriasis Delphi Expert Panel

†Dalhousie University, Halifax, NS, Canada
‡University of Geneva, Geneva, Switzerland
§Dermatologikum Hamburg, Hamburg, Germany

*Correspondence: R.G. Langley. E-mail: richard.langley@dal.ca

Abstract

Background Nail involvement is common in psoriasis patients and is often associated with severe disease. Patients with nail psoriasis experience pain, functional impairment and social stigma, with significant restriction of daily activities and quality of life. However, nail psoriasis often goes untreated, as many physicians believe it is difficult to treat, despite the availability of effective treatment options. Clinical data and guidelines for managing and treating psoriasis patients with both skin and nail symptoms are limited.

Objective To prepare recommendations for the management and treatment of patients with moderate to severe psoriasis with nail involvement.

Methods A collaborative Delphi survey was used to obtain consensus on current practice in the management of nail disease in patients with moderate to severe psoriasis from an expert panel of 11 dermatologists from Europe and Canada with substantial clinical expertise in managing these patients. Agreement was defined utilizing a Likert scale of 1–9. Consensus regarding agreement was an interquartile range (IQR) ≥ 7; consensus regarding disagreement was an IQR ≤ 3.

Results The expert panel addressed several topics including burden of disease, nail assessment, treatment goals and treatment options. The panel agreed that: it is extremely important to assess nail involvement in patients with psoriasis; nail assessments are rarely performed in routine clinical practice; full skin and nail clearance is an achievable goal with appropriate systemic therapy in patients with moderate to severe psoriasis with nail involvement.

Conclusion This article provides useful and practical considerations for the management and treatment of patients with moderate to severe skin and nail psoriasis.

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Conflict of interest

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1See Appendix.
Introduction
Psoriasis is a chronic inflammatory skin disease with symptoms that are extremely distressing for many patients. Although the most common clinical signs of psoriasis are cutaneous, nail disease is frequently present. Up to 50% of patients with psoriasis have nail involvement, with a lifetime incidence of 80% to 90%. For many patients, the presence of nail disease is associated with significant pain, leading to functional impairment. Furthermore, because most patients with nail psoriasis find the appearance of their nails distressing, they restrict their participation in social and work activities.

Nail psoriasis may be a sign of uncontrolled inflammation and more severe forms of psoriatic disease that, in turn, may require more aggressive treatment. For example, the incidence of nail psoriasis is higher in moderate to severe psoriasis patients and is associated with a longer duration of disease, as well as with enthesitis, polyarticular disease and unremitting and progressive arthritis. In fact, nail psoriasis may provide a link in elucidating the pathophysiological variations between skin and joint disease. Approximately 80% of patients with psoriatic arthritis (PsA) have concurrent nail involvement; if left untreated, PsA can result in irreversible joint damage. Despite these factors, many psoriasis patients do not receive treatment for nail disease, as physicians often believe that the condition is difficult to treat or that the risks of systemic therapy are not justified. Managing nail psoriasis also presents a challenge due to the difficulty of delivering effective topical drugs to the nail unit and the toxicity associated with many conventional systemic therapies. However, the newer biological systemic therapies [i.e., tumour necrosis factor (TNF) antagonists] have demonstrated that a reduction in or clearance of nail symptoms is possible.

Nail involvement is a significant manifestation of psoriasis and is associated with higher disease severity and greater impairment in quality of life (QoL); however, there have been limited published clinical data and few properly controlled, larger randomized controlled trials (RCTs) or comprehensive guidelines on the treatment of psoriasis with nail involvement. Therefore, a survey was conducted using Delphi methodology to assess current practice specifically in the treatment of patients with moderate to severe psoriasis with concurrent nail involvement. This collaborative process, involving an international panel of expert dermatologists, was undertaken in an attempt to provide practical recommendations to enhance the management and treatment of patients with moderate to severe psoriasis with nail involvement.

Methods
Survey participants
A steering committee, consisting of three dermatologists (R Langley, K Reich and JH Saurat) with extensive experience in the treatment of nail psoriasis in patients with moderate to severe psoriasis, was convened to develop the topics for the Delphi survey and to provide input regarding survey design/methodology, but the committee members did not participate in the survey (Fig. 1). Once developed, the survey was independently tested to ensure that the questions were relevant, clear and understandable.
An expert panel, consisting of 11 dermatologists from Europe and Canada, was convened to participate in the survey under the supervision of the steering committee. The dermatologists were selected based on their substantial level of expertise in managing patients with moderate to severe psoriasis and psoriatic nail disease in both clinical practice and clinical studies (Fig. 1). These physicians see 30–200 moderate to severe psoriasis patients and/or 10–100 moderate to severe psoriasis patients with nail involvement in an average month.

Delphi methodology
The Delphi method was developed to provide an effective way of exploring complex problems through structured group communication.9 This evidence-based approach allows a group to explore the issues surrounding a problem and to establish the advantages and disadvantages of different positions/arguments, and in doing so, clarify ideas and opinions.9,10 The original Delphi method has been modified to allow a consensus to be reached.11 This ‘collaborative Delphi’ method involves the use of surveys and a final live meeting to establish a consensus. This process requires the formation of a steering committee responsible for identifying the issues/opinions surrounding a complex problem, the development of relevant survey questions and the recruitment of a panel of experts to participate anonymously in the survey. Through repeated rounds of a self-administered questionnaire, as well as subsequent analysis and re-evaluation/modification of the answers, it is possible to gather qualitative information and establish a consensus.

The collaborative Delphi method involved two rounds of the survey (answered anonymously by the expert panel), followed by a live meeting (round 3), during which participants surrendered their anonymity; however, individual survey responses from rounds 1 and 2 remained confidential to preserve objectivity during survey completion. At the end of round 3, and through relevant scientific discussion, consensus statements with regard to agreement and disagreement were collected whenever possible. Any additional/revised questions subsequently developed during round 3 were provided to and answered anonymously by the expert panel (Fig. 1).

Survey questionnaire design/application
During rounds 1 and 2 of the Delphi survey, the expert panel was asked to complete an Internet-based questionnaire developed by the steering committee. Each participant answered questions in five main topic areas related to the management and treatment of patients with moderate to severe psoriasis with nail involvement (Table 1). The questionnaire was designed to assess the strength of agreement, relevance and importance of statements in the defined topic areas. This collaborative survey questionnaire is able to collect and synthesize opinions across a larger group and to achieve a degree of consensus.

The participants in the expert panel scored each statement using a Likert scale from 1 to 9 (where a score of 1, 2, 3 or 4 indicated degrees of disagreement with the statement or question; a score of 6, 7, 8 or 9 indicated increasing degrees of agreement; and a score of 5 indicated a neutral opinion). A numerical identification system was used to ensure that the participants remained anonymous.

| Topic 1: Understanding the burden of nail psoriasis |
| Topic 2: Assessing nail psoriasis |
| Topic 3: Treatment goals |
| Topic 4: Treatment options for psoriasis with nail involvement |
| Topic 5: Biological therapy in psoriasis with nail involvement |
Data analysis
After the questionnaire had been completed in round 1 of the Delphi survey, responses were collected and analysed on a group basis. To obtain the main tendencies and avoid extreme views, the median scores were determined. The median scores were disclosed to the expert panel during round 2 of the survey. Prior to round 3 (live meeting of the expert panel), the interquartile range (IQR), a measure of the distance between the 75th and 25th percentiles that reflects the middle 50% of responses, was used to determine the variability of the responses. This approach provides a measure of the response range without influence from outliers or extreme responses. Overall, less variability in responses yields a higher degree of consensus, whether it is regarding agreement or disagreement.

During the live meeting, the steering committee presented the survey results to the expert panel and the key issues surrounding them were discussed and any relevance determined. To further establish the degree of agreement or disagreement, statements were categorized as ‘highly irrelevant, strongly disagree or highly unlikely’ (median score 1–3), ‘somewhat relevant or irrelevant, somewhat agree or disagree or somewhat likely or unlikely’ (median score 4–6) or ‘highly relevant, strongly agree or highly likely’ (median score 7–9). In addition, the IQR of the responses was evaluated. Consensus regarding agreement for each statement was defined as an IQR, or middle 50% or responses, that is contained ≥7 on the Likert Scale, whereas consensus regarding disagreement was defined as an IQR, or middle 50% or responses, that is contained ≤3 on the Likert Scale, as demonstrated in Fig. 2.

Results
Understanding the burden of nail disease
In the first section of the survey, the physicians on the expert panel were asked questions pertaining to the burden of nail disease in patients with moderate to severe psoriasis in their practice. The panel agreed that nail involvement in psoriasis places a tremendous burden on patients. Areas of consensus regarding agreement are listed in Fig. 3. According to observations in their daily practice, physicians in the expert panel strongly agreed that the appearance of nail disease can impair or limit patients’ interactions with others [median 9 (IQR 8.5–9)]. In addition, the panel members agreed that compared with patients with cutaneous disease alone, patients with moderate to severe psoriasis with concurrent nail involvement are more likely to experience pain related to the disease [median 7 (IQR 7–8)]. The physicians believed that patients with moderate to severe psoriasis with nail disease more often have difficulty completing tasks requiring manual dexterity (e.g., buttoning clothes, opening bottles, handling small objects) [median 8 (IQR 8–8)], performing housework [median 8 (IQR 7–8)] and participating in sports, hobbies and other recreational activities [median 7 (IQR 7–8)]. These patients have more impaired social and workplace interactions [median 7 (IQR 7–8) and median 8 (IQR 7.5–8), respectively], as well as a more negative self-image or greater cosmetic concerns [median 8 (IQR 7.5–8)], than patients with cutaneous symptoms alone. They are also more likely to experience embarrassment or shyness related to their nail disease, leading them to hide their hands in public [median 8 (IQR 8–9)]. In addition, from the experience of the expert panel, patients with moderate to severe psoriasis and clinically significant nail disease tend to suffer from anxiety or depression [median 8 (IQR 7.5–8.5)] due to the burden of their nail disease more often than patients with moderate to severe skin psoriasis alone.

According to the expert panel, nail psoriasis represents an increased burden for physicians when treating patients with moderate to severe psoriasis, as patients with nail involvement are generally more difficult to treat and have higher expectations in terms of treatment goals [median 8 (IQR 7–8) and median 7 (IQR 7–8),

![Figure 2](image-url)
respectively]. The expert panel agreed that physicians often overlook the substantial effect that nail psoriasis can have on patients with moderate to severe psoriasis [median 7 (IQR 7–7)], despite the fact that in the panel members’ experience, many moderate to severe psoriasis patients with nail involvement present with the following signs: nail bed (median 50–59%) or nail matrix involvement (median 50–59%), joint pain or tenderness (median 40–49%), joint swelling (median 30–39%) and joint stiffness (median 30–39%).

Assessing patients with nail psoriasis

The second section of the survey examined the available assessment tools and the treatment goals of patients with moderate to severe psoriasis with nail disease. The relevance of these assessment tools and their frequency of use were also addressed. The panel agreed that it is extremely important to assess nail disease in all patients with moderate to severe psoriasis but that current nail assessment tools do not adequately reflect important aspects of nail psoriasis, such as pain and functional impairment, or the impact on QoL [median 8.5 (IQR 8–9) and median 8 (IQR 8–8), respectively]. The survey revealed that nail psoriasis assessment tools are not commonly used in the dermatology community [median 2 (IQR 1.25–2)]. It was noted that although the Physician’s Global Assessment (PGA) for the evaluation of cutaneous disease is relevant in daily practice [median 7 (IQR 7–7)], it is not validated for assessing nail disease. The panel agreed that there is a need for a PGA to evaluate nail psoriasis in routine clinical practice [median 8 (IQR 7.25–8)].

Treatment goals

The overall goals of therapy in patients with moderate to severe psoriasis with nail disease should be to maximize the effectiveness of treatment and optimize patient QoL while minimizing side-effects. The expert panel discussed treatment goals in moderate to severe psoriasis with nail disease, and the statements that were found to be extremely important are listed in Table 2, including the need for significant improvements in skin and nail symptoms, symptoms of PsA, enthesitis, dactylitis, psoriasis-associated comorbidities and QoL.

Nail disease treatment options

The third and fourth sections of the survey focused on issues in treating patients with moderate to severe psoriasis with nail involvement with conventional methods and explored views on first-line and second-line therapies. A special focus was the decision to utilize a biological as treatment for moderate to severe psoriasis with nail involvement. The consensus with regard to agreement of the expert panel was that therapeutic strategies for patients with moderate to severe psoriasis with nail involvement should include measures to treat both skin and nail psoriasis from the onset of treatment [median 8 (IQR 8–8)]. The panel strongly disagreed that moderate to severe skin psoriasis should be treated first and significant nail psoriasis second [median 2 (IQR 1.5–3)]. In treating both skin and nail psoriasis, the experts agreed that systemic therapies will most likely be required [median 8 (IQR 8–8.75)]. If the patient’s skin disease clears with first-line therapy but the nail involvement does not, switching to a second-line therapy should be considered [median 7 (IQR 7–7)]. Using an
Before first-line systemic therapy is started, a comprehensive medical examination should be performed in patients with moderate to severe psoriasis with nail involvement. This assessment should include:

- Skin signs and symptoms
- Nail signs and symptoms
- Joint pain and swelling

Table 2 Treatment goals in patients with moderate to severe psoriasis with nail involvement*

<table>
<thead>
<tr>
<th>Agreed with consensus as treatment goals</th>
<th>Median (IQR)</th>
</tr>
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<tbody>
<tr>
<td>Achieve a significant improvement in skin symptoms (e.g., PASI 75 or PASI 90 after 10–16 weeks)</td>
<td>8 (8–9)</td>
</tr>
<tr>
<td>Achieve a significant improvement in nail symptoms, if present (e.g., NAPSI score reduction of at least 50% or 75% in 16–24 weeks)</td>
<td>7 (7–7.75)</td>
</tr>
<tr>
<td>Improve symptoms of PsA, if present (e.g., ACR20 or ACR50)</td>
<td>8 (8–8)</td>
</tr>
<tr>
<td>Improve enthesis and dactylitis, if present</td>
<td>8 (8–8.75)</td>
</tr>
<tr>
<td>Contribute to the reduction of psoriasis-associated comorbidities such as cardiovascular disease, and joint involvement, to the best extent possible</td>
<td>8 (8–8)</td>
</tr>
<tr>
<td>Reduce the effect of skin and/or nail psoriasis on QoL (e.g., DLQI score of 0 or 1)</td>
<td>8 (8–8.75)</td>
</tr>
<tr>
<td>Manage the patient as safely as possible</td>
<td>9 (9–9)</td>
</tr>
<tr>
<td>Satisfy the patient</td>
<td>8 (7.25–8.75)</td>
</tr>
<tr>
<td>Delay/block radiological progression in PsA</td>
<td>8 (8.25–9)</td>
</tr>
<tr>
<td>Achieve clear/almost clear skin disease</td>
<td>8 (7–8)</td>
</tr>
<tr>
<td>Achieve clear/almost clear nail disease</td>
<td>7 (6.5–8)</td>
</tr>
</tbody>
</table>

ACR, American College of Rheumatology; DLQI, Dermatology Life Quality Index; IQR, interquartile range; NAPSI, Nail Psoriasis Severity Index; PASI, Psoriasis Area and Severity Index; PsA, psoriatic arthritis; QoL, quality of life.

*No statements had consensus regarding disagreement in this section.

additional (combination) therapy before switching to a new monotherapy can also be considered [median 7 (IQR 7–7)].

**Topical and systemic therapies** The majority of the panel members (7/11) agreed that in patients with moderate to severe psoriasis with nail involvement, their choice for first-line topical therapy for the nails (irrespective of the systemic therapy) would be a corticosteroid; retinoids and fixed combination therapy (calcitriol/betamethasone; 1/11 and 3/11, respectively) were also considered. The majority of the panel members (8/11) agreed that besides topical therapy, their choice for first-line systemic therapy would be methotrexate, although throughout the discussions, many considered methotrexate to often be inadequate for nail involvement. Ciclosporin and fumaric acid esters (2/11 and 1/11, respectively) were also considered for first-line therapy in addition to topical therapy. The majority of the panel members (7/11) agreed that a TNF antagonist would be considered for second-line systemic therapy, although methotrexate, ciclosporin and a p40 antagonist (1/11, 2/11 and 1/11, respectively) were also considered by the panel.

Before first-line systemic therapy is started, a comprehensive medical examination should be performed in patients with moderate to severe psoriasis with nail involvement. This assessment should include:

- Skin signs and symptoms
- Nail signs and symptoms
- Joint pain and swelling

• QoL
• Productivity/ability to work.

According to the panel, these examinations should be performed regularly during first-line therapy to determine changes (i.e., worsening or improvement) to establish whether or not the treatment is effective. The panel agreed that improvements in skin symptoms and QoL [both with median 7 (IQR 7–8)] can be expected with first-line systemic therapy. It was also agreed that treatment with second-line therapy is very likely to improve other conditions associated with psoriatic disease, if present, such as nail symptoms [median 7 (IQR 7–7.5)], joint pain and swelling [median 8 (IQR 7–8)] and enthesis or dactylitis [median 8 (IQR 7–8)]. However, because guidelines on monitoring patients vary between countries, physicians should consult their country-specific guidelines.

**Efficacy thresholds** The panel agreed that it is important to set efficacy thresholds for continuing or switching therapy when starting first-line systemic treatment.

**First-line therapy.** First-line systemic therapy should be continued after 12 weeks if the patient achieves ≥75% improvement in the Psoriasis Area and Severity Index (PASI) with or without nail improvement [median 8 (IQR 8.8–8.5)]. The panel felt that first-line therapy should be continued for >6 months if the patient achieves ≥75% improvement in PASI [median 8 (IQR 7–8)]. Switching to second-line therapy (i.e., a TNF antagonist) should be considered if (i) PASI improvement is <50% [median 9 (IQR 8.5–9)] or (ii) PASI improvement is <75% and significant nail disease remains and is not responding at 6 months [median 8 (IQR 7.5–8)].

**Second-line therapy.** Full skin and nail clearance is an achievable goal when patients with moderate to severe psoriasis with nail involvement are treated with second-line systemic therapy [median 8 (IQR 7–8)]. Second-line therapy should be continued after 12 weeks if the patient achieves ≥75% improvement in PASI [median 8 (IQR 7.5–8.5)]. Second-line therapy should be continued for >6 months if the patient achieves ≥75% improvement in PASI [median 8 (IQR 7.5–8)]. A switch to another/third-line therapy should be considered if (i) PASI improvement is ≥50%, but <75%, and the nails are not responding at 6 months [median 8 (IQR 7–8); however, only 10/11 people responded] or (ii) PASI improvement is <50% [median 9 (IQR 8.5–9)].

A proposed treatment algorithm for patients with moderate to severe psoriasis with nail involvement is shown in Fig. 4.

**Initiating treatment with biological therapy** Although all biological therapies have demonstrated varying levels of efficacy in treating nail psoriasis, the most comprehensive and robust data are available for infliximab. Data from RCTs have demonstrated that infliximab can induce complete clearance of both skin and nail disease in patients with moderate to severe psoriasis.²,¹³ All the members of the expert panel (11/11) agreed that compared with all other biologicals, infliximab has the most robust data on efficacy and safety in both skin and nail treatment.
The level of evidence supporting the efficacy and safety of infliximab in both skin and nail psoriasis patients is quite strong, as it results from large-scale, randomized, double-blind, placebo-controlled clinical trials. Adalimumab is considered to have the second-best data set for both skin and nail treatment in psoriasis (6/11, whereas 3/11 and 2/11 considered etanercept and ustekinumab, respectively, to have the second-best data set). Regardless of the biological therapy used, it is important to select appropriate patients or those who will benefit most from this type of therapy. Treatment should be initiated and continued beyond 12 weeks after a positive initial response in patients with moderate to severe psoriasis with nail involvement who have signs of more severe/progressive disease (see Table 3).

When considering continuation of biological therapy in a patient with moderate to severe psoriasis with nail involvement, the panel members agreed that at 6 months, they would switch to another therapy if (i) PASI improvement is <50% [median 8 (IQR 7.25–9)] or (ii) the patient achieves PASI 50, but not PASI 75 and the nails are not responding [median 7 (IQR 7–8)]. The panel strongly agreed that full skin and nail clearance is an achievable goal using biological therapy in patients with moderate to severe psoriasis with nail involvement [median 8 (IQR 8–8.75)]. Treatment should be maintained and continued over the long term [median 8 (IQR 8–8.75)]. It is important to achieve and maintain high efficacy (e.g., PASI 90) in cutaneous disease [median 8 (IQR 8–8.75)], improve and maintain QoL [median 8

Figure 4 Treatment algorithm for moderate to severe psoriasis with nail involvement. PASI, Psoriasis Area and Severity Index.

Table 3 Key patient factors for initiating/continuing vs. not initiating/not continuing biological therapy

<table>
<thead>
<tr>
<th>Median (IQR)</th>
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<tbody>
<tr>
<td>Agreed with consensus as reasons to initiate biological therapy</td>
</tr>
<tr>
<td>Severe skin symptoms</td>
</tr>
<tr>
<td>Refractory skin/nail psoriasis</td>
</tr>
<tr>
<td>Evidence of PsA</td>
</tr>
<tr>
<td>Severity of nail involvement</td>
</tr>
<tr>
<td>Joint swelling</td>
</tr>
<tr>
<td>Joint tenderness</td>
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<tr>
<td>Impaired QoL</td>
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<tr>
<td>Psoriasis-related hospitalisations</td>
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<tr>
<td>Patient preference</td>
</tr>
<tr>
<td>Other chronic inflammatory conditions (e.g., Crohn’s disease)</td>
</tr>
<tr>
<td>Disagreed with consensus as reasons to initiate biological therapy*</td>
</tr>
<tr>
<td>Gender of patient</td>
</tr>
</tbody>
</table>

*Topical corticosteroids are the most common topical therapy used by the panel.
†Methotrexate is the most common first-line systemic therapy used by the panel.
‡Tumour necrosis factor antagonists are the most common second-line systemic therapy used by the panel.
(IQR 8–8.75)), satisfy the patient [median 8 (IQR 8–8)], increase and maintain the patient’s productivity [median 7 (IQR 7–7.75)] and implement a treatment regimen that suits the patient [median 8 (IQR 8–8)].

**Discussion**

Clearly, it is important that nail involvement in psoriasis be treated appropriately. However, until long-term clinical data on the treatment of nail disease are available, recommendations for best practice should be utilized. This Delphi survey, developed by a steering committee of experts, enabled consensus to be reached by a panel of 11 dermatology experts in a number of areas related to the treatment of patients with moderate to severe psoriasis with nail involvement, based on questions and situations encountered from clinical experience.

The results of this survey clearly demonstrate that nail disease places a burden on both patients and physicians. The panel strongly agreed that patients who have moderate to severe skin disease and clinically significant nail disease have anxiety or depression more often than patients with moderate to severe skin disease alone. For patients with psoriasis, nail involvement impacts day-to-day functioning and has a considerable effect on QoL due to the pain caused by nail lesions and the embarrassing appearance of the nail (i.e., thickening/crumbling). More than 50% of patients with psoriasis report pain associated with nail psoriasis that restricts their daily activities. One epidemiological study showed that nail psoriasis had a high impact on patients’ QoL (average Dermatology Life Quality Index score 8.3). The panel also strongly agreed that physicians often overlook the substantial effect that nail psoriasis can have on patients. This is observed in the published literature, despite the significant burden nail disease places on patients. Furthermore, the expert panel strongly agreed that patients with nail psoriasis are generally more difficult to treat and that those with significant nail disease often have increased demands in terms of treatment goals. Treating these patients may be difficult because nails are slow to heal and conventional treatments are generally difficult to administer and frequently ineffective, with surgery sometimes being required for refractory cases.

In addition to adding to the burden of psoriatic disease, nail involvement is a sign of uncontrolled systemic inflammation. The expert panel agreed that it is extremely important to assess nail involvement in patients with moderate to severe psoriasis, despite the fact that nail assessments are rarely performed in routine clinical practice. The panel also strongly agreed that current nail assessment tools do not adequately reflect important aspects of nail psoriasis, such as pain and functional impairment. Furthermore, these tools do not reflect the impact of nail psoriasis on a patient’s QoL. Currently, there are two validated tools for assessing nail psoriasis: (i) the Nail Psoriasis Severity Index (NAPSI) and (ii) the Nail Psoriasis QoL Scale (NPQ10 scale). The NAPSI assesses nail severity and is rarely used in everyday clinical practice because it is cumbersome and time-consuming to employ. In addition, the severity/type of nail change is not recorded, and there may be a lack of sensitivity. The NPQ10 scale is a QoL scale specifically for nail psoriasis. Please note that the NPQ10 scale was not published prior to survey completion.

Treating nail involvement in patients with psoriasis is often not the primary goal for physicians, as they may believe that treatment is difficult or impossible. This view is consistent with that of the expert panel, which strongly agreed that patients with nail psoriasis are generally more difficult to treat. The members of the expert panel also agreed that a corticosteroid would be their choice for first-line topical therapy for the nail. Topical treatments (e.g., corticosteroids, tazarotene, 5-fluorouracil, calcipotriol) are the mainstay for the management of skin psoriasis. The efficacy of these drugs in nail disease, however, is limited, mainly due to the difficulty in penetrating the nail and nail matrix. Intralesional corticosteroid injections have been shown to be effective in treating lesions of the nail matrix, but this approach is unpopular with patients, as it is painful and time-consuming. According to the expert panel, systemic therapies would most likely be required to treat both skin and nail psoriasis. In psoriasis patients with nail involvement that is resistant to topical and intralesional therapies, conventional systemic therapies (e.g., photochemotherapy, retinoids, ciclosporin, nimesulide) have been shown to be partially effective, although they are not recommended for patients with nail psoriasis without skin involvement.

More recently, biological therapies (e.g., infliximab, adalimumab, alefacept, etanercept) have become available. These biological agents have proven efficacy in psoriasis and PsA, and some are effective in treating nail disease in patients with psoriasis. Based on the relevant clinical data on patients with moderate to severe psoriasis with nail involvement, the expert panel agreed that infliximab has the most robust efficacy and safety data. In addition, the panel agreed that full skin and nail clearance is an achievable goal when a patient with moderate to severe psoriasis with nail involvement is treated with biological therapy. However, long-term safety data regarding use of this class of therapy for treating moderate to severe psoriasis patients with nail involvement are still being explored; therefore, the benefits of improving a patient’s symptoms and QoL must be weighed carefully against the possible risks of treatment.

This consensus article clarifies key decision points and provides recommendations and practical advice on how to treat patients with moderate to severe psoriasis with nail involvement, and it includes a proposed treatment algorithm based on the substantial experience of the expert panel. Although some clinical data exist showing the beneficial effects of some drugs in the treatment of nail symptoms, there remains a lack of abundant clinical evidence in this area. Consequently, the areas of consensus reached in this article are largely based on expert opinion/clinical experience, and as a result, further clinical investigation is needed to enhance these expert-based recommendations.
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Appendix: Nail Psoriasis Delphi Expert Panel

H. Bachelez, MD, PhD, Hôpital Saint-Louis, Paris Diderot University, Paris, France.
R. Bissonnette, MD, Innovaderm Research, Montreal, PQ, Canada.
R. Burd, MBChB, FRCP, Leicester Royal Infirmary, Leicester, UK.
E. Daudé, MD, PhD, Hospital Universitario de la Princesa, Madrid, Spain.
P. Filipe, MD, PhD, Hospital de Santa Maria, Lisboa, Portugal.
G. Girolomoni, MD, University of Verona, Verona, Italy.
A. Ogilvie, MD, Universita¨ t Erlangen, Erlangen, Germany.
J.P. Ortonne, MD, Hôpital l’Archet 2, Nice, France.
M. Papoutsaki, MD, A. Sygros Hospital, Athens, Greece.
L. Puig, MD, PhD, Hospital de la Santa Creu i Sant Pau, Barcelona, Spain.
T. Särnhult, MD, Sahlgrenska University Hospital, Göteborg, Sweden.