IMPORTANCE  Nail psoriasis can be difficult to treat and has a significant effect on quality of life. Relatively few controlled trials evaluating treatments for nail psoriasis have been published. There is an unmet need for treatment recommendations to guide therapeutic decisions.

OBJECTIVE  To develop treatment recommendations for nail psoriasis from the Medical Board of the National Psoriasis Foundation.

EVIDENCE REVIEW  A PubMed search for publications on nail psoriasis treatments was performed from January 1, 1947, through May 11, 2014, without language restrictions.

FINDINGS  Treatment recommendations for 4 clinical nail psoriasis scenarios were developed based on the evidence reviewed in this study and expert opinion of the Medical Board of the National Psoriasis Foundation. Treatment of nail psoriasis should balance consideration of the extent of skin disease, psoriatic arthritis, and severity of nail disease with concomitant impairment of quality of life. All patients should be evaluated for onychomycosis because this may complicate psoriatic nail disease. For disease limited to the nails, high-potency topical corticosteroids with or without calcipotriol are initial options. For patients with significant nail disease for whom topical therapy has failed, treatment with adalimumab, etanercept, intralesional corticosteroids, ustekinumab, methotrexate sodium, and acitretin are recommended. For patients with significant skin and nail disease, adalimumab, etanercept, and ustekinumab are strongly recommended, and methotrexate, acitretin, infliximab, and apremilast are recommended. Finally, for a patient with significant nail, skin, and joint disease, adalimumab, etanercept, ustekinumab, infliximab, methotrexate, apremilast, and golimumab are recommended.

CONCLUSIONS AND RELEVANCE  Treatment of nail psoriasis poses a clinical challenge. Clinical trial data are limited, and results are reported inconsistently, making comparisons among treatment options difficult. The treatment recommendations from the Medical Board of the National Psoriasis Foundation will help guide treatment decisions for clinicians who are treating patients with nail psoriasis.
Psoriasis is a chronic systemic inflammatory disease involving the skin, nails, and joints. Approximately 50% of patients with psoriasis have some nail involvement, and the lifetime incidence of nail disease is estimated at 80% to 90%. Nail disease may rarely be the only manifestation of psoriasis. More important, nail psoriasis can cause significant pain and discomfort, leading to impairment in quality of life and work function.

There is a strong correlation of nail psoriasis with psoriatic arthritis. Patients with psoriatic arthritis have rates of nail disease as high as 70%. There is evidence that nail psoriasis may be a predictor of joint disease developing later in life. Finger nail psoriasis is more problematic for many patients than toenail disease. In addition, psoriatic toenails are often secondarily infected with dermatophytes, which may complicate treatment assessment. Treatment with immnosuppressive medications may even contribute to the development of onychomycosis in patients with toenail psoriasis. For these reasons, most studies evaluate fingernail psoriasis alone.

Clinically, nail disease has many presentations depending on the location of the inflammatory process. Nail pitting (the most common finding in nail psoriasis), nail dystrophy, and leukonychia are due to nail matrix involvement. Nail bed psoriasis is characterized by onycholysis, oil drop patches, subungual hyperkeratosis, and splinter hemorrhages. The Nail Psoriasis Severity Index (NAPSI) was developed to measure changes in nail disease over time. When using this measure, each nail is divided into 4 quadrants; each quadrant is given a score of 1 for signs of matrix disease and 1 for signs of nail bed disease. A nail without symptoms is scored zero, and the maximum value for each nail is 8—4 for matrix involvement and 4 for nail bed disease. Thus, the maximum NAPSI value for a study measuring fingernail disease is 80 and the maximum for a target nail is 8. This scale measures the extent of nail disease but not the severity of nail involvement, so a modified NAPSI has been proposed that assigns a severity score of 0 to 3 for both nail bed and matrix involvement. Some studies use a single target nail or an overall severity score. Other scales have been used to measure nail involvement, but most studies reviewed here use some form of the NAPSI. The wide variety of objective measures used in nail psoriasis studies make comparison of treatment outcomes for various interventions difficult.

An array of treatment options are available for nail psoriasis, including topical products, procedural interventions, and oral systemic and biologic agents. The challenges of treating nail disease are poor penetration of topical therapy into the nail and surrounding tissue, pain associated with intralesional injections, adverse effects, and monitoring of systemic therapies and patient adherence to therapy. Because many of the treatments most commonly used to treat psoriasis do not have published, randomized, double-blind, placebo-controlled trials addressing nail disease, the recent Cochrane review does not help dermatologists make an informed decision regarding the best treatment for a patient with nail psoriasis. Others have published reviews of nail psoriasis and treatments. Recommendations from a Delphi consensus conference have also been published. Our purpose is to critically review the identified publications and propose evidence-based practical treatment recommendations for nail psoriasis that may prove useful to clinicians who are treating patients with this challenging disorder.

Methods
We searched PubMed for articles on nail psoriasis from January 1, 1947, through May 11, 2014, without language restrictions. We used the keywords psoriasis and nail, both with and without the name of the potential therapy. The articles were evaluated with levels of evidence as reported by Shekelle et al. The entire Medical Board of the National Psoriasis Foundation was polled for their treatment preference for 4 typical clinical presentations of nail psoriasis. All treatments with clinical data reviewed in this article were treatment options offered to the medical board. Board members rated each treatment as “recommend with high enthusiasm,” “recommend with low enthusiasm,” “do not recommend,” and “no preference.” Of 22 members, 13 completed the poll. These recommendations were tallied and incorporated into the article and later approved by the entire board.

Results of Article Review
Although data are limited and placebo-controlled trials rare, there are data to support the efficacy of topical cyclosporine, topical tacrolimus, clotetasol propionate nail lacquer, calcipotriol, a combination of calcipotriol and betamethasone dipropionate, tazarotene, and Indigo naturalis extract (Table 1). Apremilast and the traditional systemic agents acitretin, methotrexate sodium, and cyclosporine, which are effective in plaque psoriasis, are also effective in nail disease (Table 2).

Evidence for the efficacy of biologic agents (targeting tumor necrosis factor, interleukin [IL] 12/23, and IL-17) includes data from multiple randomized, placebo-controlled, double-blind trials and other controlled trials in which nail psoriasis was assessed as a secondary endpoint (Table 3).

Treatment Recommendations
Treatment recommendations for 4 clinical nail psoriasis scenarios were developed based on the evidence reviewed in this study and expert opinion from the Medical Board of the National Psoriasis Foundation.

1. Patients with psoriasis limited to the nails. These patients have minimal or no skin disease and no evidence of joint disease, with 3 of 10 fingernails having onycholysis, pitting, and distal hyperkeratosis. These patients are embarrassed by the appearance of the nails and have mild pain with use. No previous therapy has been used. High-potency topical corticosteroids alone or in combination with calcipotriol were recommended with enthusiasm, and intralesional corticosteroids were recommended. Systemic and biologic treatments were not recommended for this patient scenario.

2. Patients with psoriasis limited to the nails for whom topical therapy has failed. These patients have 5 of 10 nails involved and moderate to severe nail pain. The medical board recommended the following in ranking order from highest enthusiasm to lowest: adalimumab, etanercept, intralesional corticosteroids, ustekinumab, methotrexate, and acitretin.

3. Patients with psoriasis of the skin and nails. These patients have psoriasis on 8% of their body surface area, 5 of 10 nails with
### Table 1. Topical and Procedural Interventions in Nail Psoriasis

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Evidence*</th>
<th>Trial Type</th>
<th>Duration</th>
<th>Patients, No.</th>
<th>Outcomes</th>
<th>Adverse Events</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Topical CsA, 70%, in maize oil every day</td>
<td>IIB</td>
<td>Vehicle controlled</td>
<td>12 wk</td>
<td>16</td>
<td>CsA group: 3 complete remissions, 5 significantly improved. Vehicle group: 1 slight improvement, 3 minimal improvement, 4 with no change</td>
<td>Excellent tolerability, no detectable serum CsA</td>
<td>Cannavò et al.13</td>
</tr>
<tr>
<td>Topical tacrolimus ointment, 0.1%, every day</td>
<td>III</td>
<td>1 Hand tacrolimus, 1 control</td>
<td>12 wk</td>
<td>21</td>
<td>Absolute change (decrease) in NAPSI of 13 for treated hand vs 3 for untreated hand</td>
<td>Acute paronychia in tacrolimus group (n = 1)</td>
<td>De Simone et al.14</td>
</tr>
<tr>
<td>Clobetasol nail lacquer, 0.05%, 1%, or 8%, twice weekly</td>
<td>III</td>
<td>Vehicle controlled</td>
<td>24 wk</td>
<td>31</td>
<td>Improvement in onycholysis and nail pitting compared with vehicle. One nail was occluded and 1 nail was not, but this did not change outcome</td>
<td>Noskin reactions, HPA axis suppression not evaluated</td>
<td>Nakamura et al.15</td>
</tr>
<tr>
<td>Topical tazarotene gel, 0.1%, every day</td>
<td>III</td>
<td>Vehicle controlled</td>
<td>24 wk</td>
<td>31</td>
<td>Improvement in onycholysis and nail pitting compared with vehicle. One nail was occluded and 1 nail was not, but this did not change outcome</td>
<td>Tazarotene group (n = 5): peeling skin, paronychia</td>
<td>Scher et al.16</td>
</tr>
<tr>
<td>Clocipotriol twice a day vs a combination of calcipotriol and betamethasone every day</td>
<td>IIB</td>
<td>Comparator</td>
<td>12 wk</td>
<td>32</td>
<td>NAPSI improved in both groups without significant difference between groups. Twice-a-day application of calcipotriol was low (26%)</td>
<td>None observed during trial period</td>
<td>Tosti et al.19 (1998)</td>
</tr>
<tr>
<td>Combination of calcipotriol and betamethasone every day</td>
<td>III</td>
<td>Open label</td>
<td>12 wk</td>
<td>25</td>
<td>NAPSI score reduction from 5.8 to 1.6</td>
<td>None observed during trial period</td>
<td>Rigopoulos et al.18</td>
</tr>
<tr>
<td>Calcipotriol ointment vs a combination of betamethasone and salicylic acid, 0.03 g/g</td>
<td>III</td>
<td>Comparator</td>
<td>5 mo</td>
<td>58</td>
<td>49.2% and 51.7% reduction of hyperkeratosis in calcipotriol and combination of betamethasone and salicylic acid groups, respectively. Toenails also with reductions in hyperkeratosis of 20.1% and 22.9% in the calcipotriol and betamethasone groups, respectively</td>
<td>None observed during trial period</td>
<td>Lin et al.20</td>
</tr>
<tr>
<td>Indigo naturalis (Lindioil) vs olive oil</td>
<td>IIA</td>
<td>Vehicle controlled</td>
<td>12 wk</td>
<td>31</td>
<td>Mean reduction in NAPSI scores (single hand) was 49.8% vs 22.9% for Lindioil and vehicle control, respectively. In the open-label period (wk 24), there was a 61% mean reduction in NAPSI vs baseline</td>
<td>None observed during trial period</td>
<td>Sánchez-Regaña et al.21</td>
</tr>
<tr>
<td>Phototherapy with psoralen or acitretin</td>
<td>III</td>
<td>Medical record review</td>
<td>48 wk</td>
<td>84</td>
<td>Medical record review with NAPSI measurements at wk 24 and 48. Treatments: CsA (n = 7), acitretin (n = 9), methotrexate (n = 9), psoralen plus UV-A (n = 5), narrow-band UV-B (n = 6), acitretin plus psoralen-UV-A (n = 5), acitretin plus narrow-band UV-B (n = 6), infliximab (n = 8), etanercept (n = 9), efalizumab (n = 10), and adalimumab (n = 8). NAPSI improved in all groups except narrow-band UV-B monotherapy</td>
<td>None observed during trial period</td>
<td>Tosti et al.19 (1998)</td>
</tr>
<tr>
<td>595-nm PDL</td>
<td>III</td>
<td>Open label with 2 PDL settings</td>
<td>6 mo</td>
<td>20</td>
<td>PDL applied to nail folds monthly with either 9 J/cm² (6-ms pulse, 10-ms cryogen, 7-mm spot) or 6 J/cm² (0.45-ms pulse, 10-ms cryogen, 7-mm spot). Both treatments decreased NAPSI from 10 to 6</td>
<td>Pain in all, but greater in 6-ms pulse group; petechiae and hyperpigmentation in one-third of patients</td>
<td>Treewittayapoom et al.22</td>
</tr>
<tr>
<td>PDL vs PDL with MAL (photodynamic therapy)</td>
<td>III</td>
<td>Comparator</td>
<td>6 mo</td>
<td>14</td>
<td>All nails treated with PDL monthly (595 nm, 9 J/cm², 6-ms pulse, 7-mm spot). Nails on 1 hand were treated with MAL for 3 h with occlusion. Global NAPSI scores decreased in both groups from 241 and 231 to 111 and 98 in the PDT and PDL groups, respectively</td>
<td>Some pain with treatments</td>
<td>Fernández-Guarino et al.23</td>
</tr>
<tr>
<td>Grenz ray</td>
<td>IIB</td>
<td>Double-blind left-right trial</td>
<td>10 wk</td>
<td>22</td>
<td>Significant improvement in active group vs sham therapy. Hyperkeratotic nails had poor response</td>
<td>None observed during trial period</td>
<td>Lindelöff24</td>
</tr>
<tr>
<td>Intraleisonal corticosteroid injections</td>
<td>IV</td>
<td>Medical record review</td>
<td>NA</td>
<td>109</td>
<td>Nails Three 0.1- to 0.2-ml injections of triamcinolone acetonide suspension (5 mg/mL) delivered into the base of psoriatic nails via pneumatic injector. Repeated injections into 109 nails resulted in 80% treatment success</td>
<td>None observed during trial period</td>
<td>Bleeker et al.25</td>
</tr>
</tbody>
</table>
severe nail dystrophy, and moderate to severe nail-associated pain. Topical therapies have proven inadequate to control disease. The board recommended adalimumab, etanercept, and ustekinumab with high enthusiasm; methotrexate, acitretin, infliximab, and apremilast were also recommended.

4. Patients with skin, joint, and nail disease. These patients have skin disease on 8% of their body surface area, a history of dactylitis and morning stiffness (psoriatic arthritis), and 5 of 10 nails with severe nail involvement and pain. The recommendations for treatment were, in ranked order from the highest to lowest: adalimumab, etanercept, ustekinumab, infliximab, methotrexate, apremilast, and golimumab.

**Other Issues**

Intralesional injection of corticosteroids is an accepted clinical treatment for localized nail psoriasis and is recommended here for patients with psoriasis limited to the nails. Despite many decades of use, published data to support the safety or efficacy of intralesional injections are extremely limited. Techniques vary but generally involve injection of triamcinolone acetonide, 0.1 to 0.2 mL of 5- to 10-mg/mL suspension into the lateral nail folds. Nerve blockers and/or topical anesthetics to ease the pain associated with injection may be given before injection. Injections are repeated at intervals. Adverse effects from intralesional corticosteroids include pain on injection, skin atrophy, depigmen-

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### Table 1. Topical and Procedural Interventions in Nail Psoriasis (continued)

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Evidence</th>
<th>Trial Type</th>
<th>Duration, wk</th>
<th>Patients, No.</th>
<th>Outcomes</th>
<th>Adverse Events</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intralisonal triamcinolone acetonide</td>
<td>III</td>
<td>Open label</td>
<td>16</td>
<td>17</td>
<td>Monthly injections using a needle-free injection device led to a decrease in NAPSI for the target nail of 46.3%. Mean baseline NAPSI score of 6.5 and final NAPSI score of 2.8</td>
<td>Minimal pain</td>
<td>Nantel-Battista et al²⁶</td>
</tr>
</tbody>
</table>

**Abbreviations:** CsA, cyclosporine; HPA, hypothalamic-pituitary-adrenal; MAL, methyl-aminolaevulinic acid; ms, milliseconds; NA, not available; NAPSI, Nail Psoriasis Severity Index; NR, not reported; PDL, pulsed dye laser; PDT, photodynamic therapy.

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### Table 2. Oral Systemics in the Treatment of Nail Psoriasis

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Evidence</th>
<th>Trial Type</th>
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<th>Adverse Events</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>MTX</td>
<td>IIA</td>
<td>Comparator</td>
<td>52</td>
<td>317</td>
<td>Mean target fingernail NAPSI at baseline, wk 24, and wk 52 were 4.8, 2.1, and 1.2, respectively, with briakinumab (n = 154) compared with 4.8, 3.0, and 3.0 for MTX (n = 163). Overall, a 48% NAPSI improvement was seen in the MTX group at wk 52</td>
<td>More discontinuations in MTX group owing to lack of efficacy</td>
<td>Reich et al²⁷</td>
</tr>
</tbody>
</table>

**Abbreviations:** MTX, methotrexate sodium; NAPSI, Nail Psoriasis Severity Index; NR, not reported; RDBPCT, randomized, double-blind, placebo-controlled trials.

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Table 3. Biologics in the Treatment of Nail Psoriasis

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Evidence*</th>
<th>Trial Type</th>
<th>Duration, wk</th>
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<th>Adverse Events</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADA</td>
<td>IB</td>
<td>RPCDBT in hand/foot psoriasis</td>
<td>16</td>
<td>72</td>
<td>NAPSI improvement for ADA (80 mg wk 0 and 1, then 40 mg every other wk) vs placebo of 50% and 8%, respectively. Patients treated for 28 wk with ADA had 54% NAPSI improvement</td>
<td>Events leading to discontinuation: ADA (n = 3), placebo (n = 2)</td>
<td>Leonardi et al\textsuperscript{33}</td>
</tr>
<tr>
<td>ADA</td>
<td>III</td>
<td>Open label in psoriatic arthritis</td>
<td>12</td>
<td>164</td>
<td>54.2% of patients had a ≥50% improvement in NAPSI</td>
<td>21 Serious events, including 4 infections</td>
<td>Van den Bosch et al\textsuperscript{34}</td>
</tr>
<tr>
<td>ADA</td>
<td>III</td>
<td>Open label</td>
<td>24</td>
<td>21</td>
<td>85% and 72% improvement in NAPSI for fingernails and toenails, respectively</td>
<td>Well tolerated, injection site erythema (n = 6)</td>
<td>Rigopoulos et al\textsuperscript{35}</td>
</tr>
<tr>
<td>ETN</td>
<td>IIA</td>
<td>Randomized dose comparison</td>
<td>24</td>
<td>72</td>
<td>2 Groups: 50 mg twice weekly for 12 wk, then 50 mg/wk for 12 wk (biw/qw) and 50 mg/wk for 24 wk (qw/qw). ≥50% Improvement in NAPSI in 58.1% and 82.3% in the biw/qw group and 50.5% and 80.7% in the qw/qw group at wk 12 and 24, respectively. Complete target nail clearance at 24 wk in 14.3% and 31.0% in the biw/qw and qw/qw groups, respectively. Significant improvement in DLOI in both groups from baseline at wk 12 and 24</td>
<td>Events leading to discontinuation: lung cancer, myocardial infarction, injection site pain, toxiderma, and psoriasis flare, no serious infections</td>
<td>Ortonne et al\textsuperscript{36}</td>
</tr>
<tr>
<td>GOL (FDA approved for psoriatic arthritis)</td>
<td>IB</td>
<td>RPCDBT in psoriatic arthritis</td>
<td>24</td>
<td>405</td>
<td>Patients randomized to placebo, 50 mg of GOL every 4 wk, or 100 mg of GOL every 4 wk. Stable doses of MTX and prednisone allowed. Median percentage change in NAPSI at wk 12 and 24 was 0%, 25%, and 43% and 0%, 33%, and 54% for the placebo group, GOL (50 mg), and GOL (100 mg) groups, respectively</td>
<td>Nasopharyngitis and upper respiratory tract infections most common, events similar for GOL and placebo groups</td>
<td>Kavanaugh et al\textsuperscript{38}</td>
</tr>
<tr>
<td>IFX</td>
<td>IB</td>
<td>RDBPCT</td>
<td>24</td>
<td>373</td>
<td>IFX (5 mg/kg) or placebo (4:1) at wk 0, 2, 6, and every 8 wk through wk 46 with placebo crossover at wk 24. In the 308 patients with nail psoriasis, the median percentage improvement in target nail NAPSI at wk 10 and 24 was 26.8% and 57.2% compared with −7.7% and −4.1% for IFX and placebo, respectively</td>
<td>Infection and infusion reactions noted in IFX and placebo groups</td>
<td>Rich et al\textsuperscript{39}</td>
</tr>
<tr>
<td>IFX</td>
<td>IIB</td>
<td>Retrospective analysis</td>
<td>50</td>
<td>378</td>
<td>Analysis of subset from Rich et al\textsuperscript{39} with 186 patients who completed the 50-wk trial. Mean NAPSI improved 28.3%, 61.4%, and 67.8% at wk 10, 24, and 50, respectively. Complete nail clearance was achieved by 7.5%, 29.9%, and 49.2% of patients at wk 10, 24, and 50, respectively</td>
<td></td>
<td>Reich et al\textsuperscript{40}</td>
</tr>
<tr>
<td>Comparison of ADA, ETN, and IFX</td>
<td>III</td>
<td>Open label comparator</td>
<td>24</td>
<td>72</td>
<td>NAPSI scores at baseline, wk 14, and wk 24 were 33, 21, and 11 for ADA; 35, 24, and 10.6 for ETN; and 33, 15, and 3 for IFX. Efficacy for IFX was superior to ADA and ETN at wk 14</td>
<td></td>
<td>Saraceno et al\textsuperscript{41}</td>
</tr>
<tr>
<td>Comparison of ADA, ETN, and IFX</td>
<td>III</td>
<td>Medical record review</td>
<td>48</td>
<td>39</td>
<td>High efficacy seen in all groups, with 92.8%, 89.5%, and 95.1% improvement in NAPSI at wk 48 for ADA, ETN, and IFX, respectively</td>
<td></td>
<td>Kyriakou et al\textsuperscript{42}</td>
</tr>
</tbody>
</table>
Table 3. Biologics in the Treatment of Nail Psoriasis (continued)

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Evidence</th>
<th>Trial Type</th>
<th>Duration, wk</th>
<th>Patients, No.</th>
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</tr>
</thead>
<tbody>
<tr>
<td>UST</td>
<td>IB</td>
<td>RDBPCT</td>
<td>12 and 24</td>
<td>545</td>
<td>Mean percentage improvement in NAPSI for placebo, UST (45 mg), and UST (90 mg) was 11.8%, 26.7%, and 24.9%, respectively. After wk 12, patients continued therapy. At wk 24, there was a mean percentage NAPSI improvement of 46.5% and 48.7% in the UST (45 mg) and UST (90 mg) groups, respectively</td>
<td>NR</td>
<td>Richard et al42</td>
</tr>
<tr>
<td>UST</td>
<td>II</td>
<td>Randomized open label</td>
<td>64</td>
<td>158</td>
<td>Japanese study showing mean percentage improvement in NAPSI of 56.6% and 67.8% for the 45-mg and 90-mg UST dosages, respectively</td>
<td>NR</td>
<td>Igarashi et al44</td>
</tr>
<tr>
<td>IXE (IL-17 antibody)</td>
<td>IB</td>
<td>RDBPCT</td>
<td>12</td>
<td>142</td>
<td>Mean percentage change in NAPSI from baseline was 6.8, 14.3, −24.0, −57.1, and −49.3 in the placebo, 10-mg, 25-mg, 75-mg, and 150-mg groups, respectively. This change was significant for the 75-mg and 150-mg groups vs placebo</td>
<td>No serious events reported</td>
<td>Leonardi et al43</td>
</tr>
<tr>
<td>SEC (IL-17 antibody)</td>
<td>IB</td>
<td>RDBPCT</td>
<td>12</td>
<td>304</td>
<td>The composite fingernail score was −19.1%, −10.6%, and 14.4% for the early (SEC [150 mg]) at wk 0, 1, 2, and 4, monthly (SEC [150 mg]) at wk 0, 4, and 8, and placebo groups</td>
<td>NR</td>
<td>Paul et al46</td>
</tr>
</tbody>
</table>

Abbreviations: ADA, adalimumab; biw/qw, twice weekly followed by weekly dosage; DLQI, Dermatology Life Quality Index; ETN, etanercept; FDA, US Food and Drug Administration; GOL, golimumab; IXE, ixekizumab; IFX, infliximab; IL, interleukin; MTX, methotrexate; NAPSI, Nail Psoriasis Severity Index; NR, not reported; qw/qw, weekly dosage followed by weekly dosage; RDBPCT, randomized, double-blind, placebo-controlled trials; SEC, secukinumab; UST, ustekinumab.

*IA evidence includes evidence from meta-analysis of randomized controlled trials; IB, randomized controlled studies; IIA, nonrandomized controlled studies; II B, experimental study; III comparative studies, correlation studies, and case-control studies; IV, expert committee reports or opinions, and case reports.12

Conclusions
Nail psoriasis poses a significant burden to our patients with psoriasis. Even when psoriasis and psoriatic arthritis are controlled, nail disease may persist. Clinical data are limited in nail psoriasis, and clinical outcomes are not standardized. Thus, comparison among treatment options is virtually impossible based on the current literature. For patients with disease limited to the nails, high-potency topical corticosteroids with or without calcipotriol are initial options, and intralesional corticosteroids can also be considered. For patients with significant nail disease for whom topical therapy has failed, treatment with adalimumab, etanercept, intralesional corticosteroids, ustekinumab, methotrexate, and acitretin are recommended. For patients with significant skin and nail disease, adali-
mumab, etanercept, and ustekinumab are recommended with high enthusiasm, and methotrexate, acitretin, infliximab, and apremilast are recommended. Finally, for a patient with significant nail, skin, and joint disease, the following are recommended with decreasing enthusiasm: adalimumab, etanercept, ustekinumab, infliximab, methotrexate, apremilast, and golimumab.

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