U059
Hidradenitis Suppurativa and Pityriasis Rubra Pilaris: Updates on Treatment

DISCLOSURES
I do not have any relevant relationships with industry.

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UCLA Dermatology
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Pityriasis Rubra Pilaris: Differential Diagnoses, Cancer Associations and Expectations for Biologic Therapies

Scott Worswick
Director of Inpatient Dermatology at UCLA Westwood
02-18-2018
(special thanks to: Nolan Maloney, Lisa Hisaw)
What is your level of training

1- medical student
2- resident
3- outpatient dermatology attending
4- dermatology attending with significant inpatient experience
5- nurse practitioner
6- other
Case #1

- HPI: 53 y/o M with diffuse itchy rash slightly improved with betamethasone cream, medrol dose pack
- ROS: negative
- PMH: works in educational research, married
- Home medications: MV, fish oil
- SH: lives in Los Angeles
- FH: son with atopy
Do you think this patient has...

1.) Allergic Contact Dermatitis
2.) Drug Reaction
3.) Pityriasis Rubra Pilaris
4.) Follicular MF
5.) Ofuji’s Syndrome
6.) Psoriasis
7.) Atopic Dermatitis
Histopathology

- Interface change
- Perivascular lymphocytic infiltrate with scattered eosinophils
Clinical Course

• Patient stopped vitamin and fish oil
• Resolution in 6 weeks
Drug Rashes Mimicking PRP (follicular prominence)

- Acneiform/folliculitis
- Lichenoid
- Psoriasiform


Drugs that can trigger PRP

- Insulin
- Sorafenib
- Imatinib
- Telaprevir
- Vaccines

Sub-types of PRP

- Adult and pediatric
- Chronic and subacute
- Ichthyosiform/genetic
- HIV-associated

Case #2

• HPI: 70 y/o M with chronic rash for two years duration (60% BSA)
• ROS: no weight changes, fevers or other
• PMH: rosacea
• Home medications: none (but has tried and failed MTX, CsA and soriatane for this rash)
• SH: producer who lives in Los Angeles
• FH: no h/o rashes
Do you think this patient has...

1.) Allergic Contact Dermatitis
2.) Drug Reaction
3.) Pityriasis Rubra Pilaris
4.) Follicular MF
5.) Ofuji’s Syndrome
6.) Psoriasis
7.) Atopic Dermatitis
Clinical Course

• 4 SCCs in next year
• Trials of the following also fail: adalimumab, etanercept, apremilast, ustekinumab
• Better control with topicals only: tar-based shampoo QOD, triamcinolone 0.1% cream daily to body
What cancer has been linked to PRP in a paraneoplastic way?

1.) NHL
2.) Hodgkin’s lymphoma
3.) renal cell carcinoma
4.) BCC
5.) melanoma

What other cancer(s) has/have been diagnosed in patients with existing PRP?
What did we find when looking at NMSC and melanomas?

- 32 patients in our cohort
- 2 antecedent tumors
- During on-going PRP: 2 patients with SCC, 1 BCC, 1 melanoma
- Patients with multiple NMSC during active PRP:
  - 9 SCCs & BCCs in 1 patient (acitretin and MTX exposure)
  - 2 SCCs in 1 patient (no immune suppression)
  - 4 SCCs in 1 patient (after CsA)
What systemic agent(s) have the most published data regarding efficacy?

a.) methotrexate
b.) cyclosporine
c.) retinoids
D.) etanercept
E.) ustekinumab
The treatment mainstays for Pityriasis Rubra Pilaris

- Topical steroids
- Isotretinoin/Acitretin
- Phototherapy
- Methotrexate
- Cyclosporine

What to try in refractory cases?

• TNF-blockers
• Apremilast
• IL-12/IL-23 blockade
• IL-17 inhibitors


Our review...

Articles identified through database query
n=66

Articles identified from personal archive
n=3

Articles screened by abstract/language
n=69

Articles excluded by abstract/language
n=22

Text of articles screened by inclusion criteria
n=47

Insufficient information on treatment regimens for PRP
(n=7)
Not type I PRP or no data on treatment outcomes (n=6)
Total articles excluded = 13

Final articles included
n=34
<table>
<thead>
<tr>
<th>Age/Sex</th>
<th>Previous Systemic Drugs</th>
<th>Biologic Regimen</th>
<th>Time to Primary Response/Therapy Duration</th>
<th>Clinical Response</th>
<th>Complete Clearance of Disease (week noted)</th>
<th>Effect clearly due to biologic?</th>
<th>Citation</th>
</tr>
</thead>
<tbody>
<tr>
<td>56 M</td>
<td>Prednisone, acitretin</td>
<td>Adalimumab</td>
<td>1 week/8 weeks</td>
<td>Marked</td>
<td>Yes (8)</td>
<td>Yes</td>
<td>Maloney et al.¹²</td>
</tr>
<tr>
<td>24 M</td>
<td>MTX</td>
<td>Adalimumab</td>
<td>4 weeks/4 weeks</td>
<td>Marked</td>
<td>Yes (4)</td>
<td>No</td>
<td>O'Kane et al.¹⁴</td>
</tr>
<tr>
<td>72 M</td>
<td>Acitretin, oral steroids, MTX</td>
<td>Adalimumab</td>
<td>3 weeks/22 weeks</td>
<td>Marked</td>
<td>Yes (4)</td>
<td>Yes</td>
<td>Schreml et al.¹⁵</td>
</tr>
<tr>
<td>72 M</td>
<td>None</td>
<td>Adalimumab</td>
<td>6 weeks/32 weeks</td>
<td>Marked</td>
<td>Unk</td>
<td>Yes</td>
<td>Walling and Swick¹⁶</td>
</tr>
<tr>
<td>51 M</td>
<td>Oral steroids, acitretin</td>
<td>Adalimumab</td>
<td>1 week/30 weeks</td>
<td>Marked</td>
<td>Unk</td>
<td>Yes</td>
<td>Bravo et al.¹⁷</td>
</tr>
<tr>
<td>24 F</td>
<td>Isotretinoin</td>
<td>Adalimumab</td>
<td>4 weeks/17 weeks</td>
<td>Marked</td>
<td>Yes (17)</td>
<td>Yes</td>
<td>Zhang et al.¹⁸</td>
</tr>
<tr>
<td>52 M</td>
<td>Acitretin</td>
<td>Adalimumab</td>
<td>40 mg/wk + acitretin 40 mg/d → adalimumab 40 mg QOW + MTX 15 mg/wk</td>
<td>Marked</td>
<td>No</td>
<td>No</td>
<td>Dhoncha et al.¹⁹</td>
</tr>
<tr>
<td>66 F</td>
<td>Acitretin</td>
<td>Adalimumab</td>
<td>None/12 weeks</td>
<td>None</td>
<td>N/A</td>
<td>N/A</td>
<td>Maloney et al.¹²</td>
</tr>
</tbody>
</table>

Abbreviations: MTX = methotrexate; QOW = every other week; Unk = unknown; N/A = not applicable

¹ Adalimumab regimens according to psoriasis dosing (80 mg loading dose, followed by 40 mg every other week) unless otherwise noted

² Regimen switched 3 months into treatment. Patient diagnosed with follicular lymphoma at month 21 of treatment.
### Table 2. Patients who received a biologic regimen containing etanercept as their only biologic regimen

<table>
<thead>
<tr>
<th>Age/ Sex</th>
<th>Previous Systemic Drugs</th>
<th>Biologic Regimen</th>
<th>Time to Primary Response/ Therapy Duration</th>
<th>Clinical Response</th>
<th>Complete Clearance while on biologic (week noted)</th>
<th>Effect clearly due to biologic?</th>
<th>Citation</th>
</tr>
</thead>
<tbody>
<tr>
<td>37 M</td>
<td>CsA, acitretin</td>
<td>Etanercept 50-25 mg BIW (25 mg started at week 13)</td>
<td>8 weeks/ 26 weeks</td>
<td>Marked</td>
<td>No</td>
<td>Yes</td>
<td>Seckin et al. 20</td>
</tr>
<tr>
<td>30 F</td>
<td>Isotretinoin</td>
<td>Etanercept 25 mg BIW</td>
<td>8 weeks/ 39 weeks</td>
<td>Marked</td>
<td>Yes (22)</td>
<td>Yes</td>
<td>Guedes and Leite 21</td>
</tr>
<tr>
<td>83 F</td>
<td>MTX, CsA, acitretin</td>
<td>Etanercept 50 mg BIW</td>
<td>4 weeks/ 52 weeks</td>
<td>Marked</td>
<td>No</td>
<td>Yes</td>
<td>Maloney et al. 12</td>
</tr>
<tr>
<td>56 M</td>
<td>Retinoids</td>
<td>Etanercept 50 mg/wk + acitretin 0.2 mg/kg/d</td>
<td>8 weeks/ 12 weeks</td>
<td>Marked</td>
<td>Yes</td>
<td>No</td>
<td>Garciaovich et al. 22</td>
</tr>
<tr>
<td>59 M</td>
<td>CsA, retinoids</td>
<td>Etanercept 50 mg/wk + acitretin 0.2 mg/kg/d</td>
<td>7 weeks/ 12 weeks</td>
<td>Marked</td>
<td>Yes</td>
<td>No</td>
<td>Garciaovich et al. 22</td>
</tr>
</tbody>
</table>

Abbreviations: CsA = cyclosporine; MTX = methotrexate; BIW = twice per week
Table 3. Patients who received a biologic regimen containing infliximab as their only biologic regimen.

<table>
<thead>
<tr>
<th>Age/Sex</th>
<th>Previous Systemic Drugs</th>
<th>Biologic Regimen</th>
<th>Time to primary response/Therapy duration (# of infusions)</th>
<th>Clinical Response</th>
<th>Complete Clearance of disease (week noted)</th>
<th>Effect clearly due to biologic?</th>
<th>Citation</th>
</tr>
</thead>
<tbody>
<tr>
<td>63 M</td>
<td>GCs, MTX</td>
<td>Infliximab</td>
<td>2 weeks/6 weeks (3)</td>
<td>Marked</td>
<td>Yes</td>
<td>Yes</td>
<td>Garsovic et al. 22</td>
</tr>
<tr>
<td>32 M</td>
<td>None</td>
<td>Infliximab</td>
<td>1 week/12 weeks (4)</td>
<td>Marked</td>
<td>Yes (14)</td>
<td>Yes</td>
<td>Müller et al. 23</td>
</tr>
<tr>
<td>56 M</td>
<td>Acitretin</td>
<td>Infliximab</td>
<td>6 weeks/30 weeks (6)</td>
<td>Marked</td>
<td>Yes</td>
<td>Yes</td>
<td>Zitro et al. 24</td>
</tr>
<tr>
<td>29 F</td>
<td>None</td>
<td>Infliximab</td>
<td>2 weeks/24 weeks (6)</td>
<td>Marked</td>
<td>Yes (6)</td>
<td>Yes</td>
<td>Adnot, Desanlis et al. 25</td>
</tr>
<tr>
<td>39 M</td>
<td>Acitretin</td>
<td>Infliximab</td>
<td>6 weeks/48 weeks (10)</td>
<td>Marked</td>
<td>Yes (36)</td>
<td>Yes</td>
<td>Adnot, Desanlis et al. 25</td>
</tr>
<tr>
<td>57 F</td>
<td>Acitretin, CsA</td>
<td>Infliximab</td>
<td>18 weeks/66 weeks (13)</td>
<td>Marked</td>
<td>Yes (66)</td>
<td>Yes</td>
<td>Adnot, Desanlis et al. 25</td>
</tr>
<tr>
<td>51 M</td>
<td>Acitretin</td>
<td>Infliximab</td>
<td>12 weeks/54 weeks (11)</td>
<td>Marked</td>
<td>Yes (42)</td>
<td>Yes</td>
<td>Adnot, Desanlis et al. 25</td>
</tr>
<tr>
<td>31 F</td>
<td>Retinoids, MTX</td>
<td>Infliximab</td>
<td>2 weeks/52 weeks (8)</td>
<td>Marked</td>
<td>Yes (6)</td>
<td>Yes</td>
<td>Kandag et al. 26</td>
</tr>
<tr>
<td>30 F</td>
<td>GCs</td>
<td>Infliximab</td>
<td>2 weeks/17 weeks (4)</td>
<td>Marked</td>
<td>Yes</td>
<td>Yes</td>
<td>Garsovic et al. 22</td>
</tr>
<tr>
<td>77 M</td>
<td>None</td>
<td>Infliximab</td>
<td>0.5 weeks/2 weeks (2)</td>
<td>Marked</td>
<td>Unknown</td>
<td>No</td>
<td>Drosou et al. 26</td>
</tr>
<tr>
<td>65 M</td>
<td>None</td>
<td>Infliximab</td>
<td>2 weeks/2 weeks (2)</td>
<td>Marked</td>
<td>Unknown</td>
<td>No</td>
<td>Drosou et al. 26</td>
</tr>
<tr>
<td>74 F</td>
<td>Acitretin, etretinate</td>
<td>Infliximab</td>
<td>1 week/2 weeks (2)</td>
<td>Marked</td>
<td>Unknown</td>
<td>No</td>
<td>Drosou et al. 26</td>
</tr>
<tr>
<td>63 F</td>
<td>CsA, acitretin</td>
<td>Infliximab</td>
<td>6 weeks/30 weeks (6)</td>
<td>Marked</td>
<td>Unknown</td>
<td>Yes</td>
<td>Ruiz-Gutau et al. 27</td>
</tr>
<tr>
<td>77 M</td>
<td>Prednisone, acitretin, CsA</td>
<td>Infliximab</td>
<td>2 weeks/22 weeks (5)</td>
<td>Marked</td>
<td>No</td>
<td>Yes</td>
<td>Liao and Mutasim 28</td>
</tr>
<tr>
<td>59 F</td>
<td>MTX, acitretin, fumaric acid, mycophenolate, monofelit</td>
<td>Infliximab</td>
<td>2 weeks/30 weeks (6)</td>
<td>Marked</td>
<td>No</td>
<td>No</td>
<td>Manobaran et al. 29</td>
</tr>
<tr>
<td>53 M</td>
<td>Acitretin</td>
<td>Infliximab</td>
<td>2 weeks/2 weeks (2)</td>
<td>Partial</td>
<td>No</td>
<td>No</td>
<td>Liao et al. 28</td>
</tr>
<tr>
<td>42 M</td>
<td>Prednisolone</td>
<td>Infliximab</td>
<td>2 weeks/6 weeks (3)</td>
<td>Partial</td>
<td>No</td>
<td>No</td>
<td>Geurtsneke et al. 30</td>
</tr>
<tr>
<td>56 M</td>
<td>Prednisone</td>
<td>Infliximab + acitretin, 50 mg/d</td>
<td>None/14 weeks (4)</td>
<td>None</td>
<td>N/A</td>
<td>N/A</td>
<td>Lu et al. 8</td>
</tr>
<tr>
<td>Age/Sex</td>
<td>Previous Systemic Drugs</td>
<td>Biologic Regimen(^a)</td>
<td>Time to Primary Response/Therapy Duration</td>
<td>Clinical Response</td>
<td>Complete Clearance of disease (Week noted)</td>
<td>Effect clearly due to biologic?</td>
<td>Citation</td>
</tr>
<tr>
<td>---------</td>
<td>-------------------------</td>
<td>-------------------------</td>
<td>------------------------------------------</td>
<td>-------------------</td>
<td>------------------------------------------</td>
<td>--------------------------------</td>
<td>----------</td>
</tr>
<tr>
<td>&gt;40 M</td>
<td>None</td>
<td>Ustekinumab 45 mg</td>
<td>2 weeks/6 months</td>
<td>Marked</td>
<td>Unknown</td>
<td>Yes</td>
<td>Feldmeyer et al.(^{31})</td>
</tr>
<tr>
<td>52 F</td>
<td>Acitretin, prednisone, MTX</td>
<td>Ustekinumab 90 mg</td>
<td>8 weeks/ &gt;20 weeks</td>
<td>Marked</td>
<td>Unknown</td>
<td>Yes</td>
<td>Chowdhary and Davila(^{3})</td>
</tr>
<tr>
<td>31 M</td>
<td>CsA, acitretin, MTX</td>
<td>Ustekinumab 45 mg</td>
<td>4 weeks/ 64 weeks</td>
<td>Marked</td>
<td>Yes (28)</td>
<td>Yes</td>
<td>Di Stefani et al.(^{32})</td>
</tr>
<tr>
<td>45 M</td>
<td>None</td>
<td>Ustekinumab 45 mg</td>
<td>5 weeks/ 26 weeks</td>
<td>Marked</td>
<td>Yes</td>
<td>Yes</td>
<td>Villaverde and Cano(^{33})</td>
</tr>
<tr>
<td>28 M</td>
<td>Acitretin</td>
<td>Ustekinumab 45 mg</td>
<td>4 weeks/ 16 weeks</td>
<td>Marked</td>
<td>Yes (16)</td>
<td>Yes</td>
<td>Wohlrab and Kreft(^{34})</td>
</tr>
<tr>
<td>67 M</td>
<td>Acitretin, GCs</td>
<td>Secukinumab(^b)</td>
<td>3 weeks/ 26 weeks</td>
<td>Marked</td>
<td>Yes (26)</td>
<td>Yes</td>
<td>Schuster et al.(^{6})</td>
</tr>
<tr>
<td>68 M</td>
<td>Acitretin, MTX, apremilast</td>
<td>Secukinumab(^b)</td>
<td>4 weeks/ 12 weeks</td>
<td>Marked</td>
<td>Yes (26)</td>
<td>Yes</td>
<td>Campanelli and Sauder(^{35})</td>
</tr>
</tbody>
</table>

Abbreviations: MTX = methotrexate; CsA = cyclosporine; GCs = glucocorticoids
\(^a\) Ustekinumab dosage according to standard psoriasis regimen (week 0,4, then every 12 weeks)
\(^b\) Secukinumab dosage according to standard psoriasis regimen (300 mg/week for weeks 0-4), followed by 300 mg/month
Figure 2. The majority of type I pityriasis rubra pilaris patients who experience marked or partial responses to biologics demonstrated an initial improvement in their symptoms early (>90% at or before week 8) in their course of treatment. Notably, the data points at week 12 and 18 are taken from a paper where primary improvement was defined as a >50% improvement in disease. Data sourced from Tables 1-4.

In eight cases we identified, disease relapse was noted. While two of these occurred shortly after a patient discontinued their biologic regimen due to side effects, six cases showed an initial improvement followed by a worsening of disease while the patient was still receiving a regimen containing a biologic (median week of relapse = 14). The majority of these cases improved markedly on an alternative regimen. The details of these cases are displayed in Table 5.
Counter-Point: TNF-Inhibitors and IL-12/23 Blockade at UCLA
My Treatment Ladder if Choosing Systemic Therapy for PRP...

- Retinoids
- Etanercept
- Ustekinumab
Table 5. Patients who experienced benefit from a biologic but experienced disease relapse.

<table>
<thead>
<tr>
<th>Age/Sex</th>
<th>Initial Biologic Regimens</th>
<th>Initial Response</th>
<th>Effect clearly due to biologic?</th>
<th>Time point of relapse</th>
<th>Subsequent Therapy</th>
<th>Subsequent therapy response</th>
<th>Citation</th>
</tr>
</thead>
<tbody>
<tr>
<td>62 M</td>
<td>Infliximab x4 5 mg/kg + acitretin 0.2 mg/kg (added at week 4)</td>
<td>Marked, clear at 9 weeks but infliximab d/c due to infusion reaction</td>
<td>No</td>
<td>13 weeks (4 weeks after stopping infliximab)</td>
<td>Etanercept 50 mg/qwk + acitretin 25 mg/d</td>
<td>Marked (minimal remaining disease)</td>
<td>Lopeze et al.¹³</td>
</tr>
<tr>
<td>50 M</td>
<td>Infliximab 5 mg/kg</td>
<td>Marked</td>
<td>Yes</td>
<td>20 weeks (while on biologic)</td>
<td>Infliximab + Acitretin</td>
<td>Marked (complete clearance)</td>
<td>Garsovich et al.²²</td>
</tr>
<tr>
<td>59 M</td>
<td>Etanercept 50 mg/qwk + acitretin 0.2 mg/kg/d</td>
<td>Marked</td>
<td>No</td>
<td>16 weeks (while on biologic)</td>
<td>Adalimumab</td>
<td>Unknown</td>
<td>Garsovich et al.²²</td>
</tr>
<tr>
<td>37 F</td>
<td>Adalimumab + narrow-band UVB (UV therapy stopped → relapse)</td>
<td>Marked</td>
<td>Yes</td>
<td>14 weeks (while on biologic)</td>
<td>Adalimumab + narrow-band UVB</td>
<td>Marked (complete clearance)</td>
<td>Ivanova et al.¹⁸</td>
</tr>
<tr>
<td>65 F</td>
<td>Etanercept 50 mg/qwk</td>
<td>Partial</td>
<td>Yes</td>
<td>8 weeks (while on biologic)</td>
<td>MTX</td>
<td>Partial</td>
<td>Maloney et al.¹²</td>
</tr>
<tr>
<td>24 F</td>
<td>Etanercept 50 mg BIW + acitretin 25 mg QOD</td>
<td>Partial</td>
<td>No</td>
<td>9 weeks (while on biologic)</td>
<td>Adalimumab + acitretin 25 mg QOD</td>
<td>Partial</td>
<td>Chiu et al.¹⁰</td>
</tr>
<tr>
<td>75 M</td>
<td>Infliximab 5 mg/kg (4 doses at week 0, 2, 6, 14)</td>
<td>Partial</td>
<td>Yes</td>
<td>14 weeks (while on biologic)</td>
<td>Ustekinumab 45 mg + acitretin 25 mg/d at week 20</td>
<td>Marked (complete clearance at week 32)</td>
<td>Byckaova and Sami¹⁷</td>
</tr>
<tr>
<td>70+ M</td>
<td>Infliximab 5 mg/kg (1 dose)</td>
<td>Marked</td>
<td>No</td>
<td>16 weeks (after stopping infliximab)</td>
<td>Apremilast 30 mg BID</td>
<td>Marked</td>
<td>Kase et al.¹⁰</td>
</tr>
</tbody>
</table>

Abbreviations: x = number of doses; BIW = twice per week; QOD = every other day; Link = unknown; MTX = methotrexate; BID = twice a day

* Dosing according to standard psoriasis dosing
* Patient was *extremely* sensitive and experienced benefit from an infusion of infliximab, but developed small lymphocytic lymphoma shortly afterwards
51 unique cases of type I PRP treated with tumor necrosis factor inhibitors, ustekinumab, and/or secukinumab

Patients who experienced marked (n=35) or partial (n=2) clinical responses to their first regimen containing a biologic (n=37)

Monotherapy with infliximab (n=13), etanercept (n=2), adalimumab (n=4), ustekinumab (n=5), or secukinumab (n=2)
Combination therapy with biologic plus acitretin or MTX (n=11)

Of 37 cases, 34 (>90%) of cases noted an initial improvement in symptoms at or before week 8 of their biologic regimen

Patients who experienced marked or partial clinical responses to a biologic regimen but then experienced disease relapse (n=8)

Relapse during treatment with a biologic (n=6, median relapse week = 14)

Subsequent therapy with the same biologic with adjunctive added (n=2, 2 MR)
Subsequent therapy with different biologic (n=4, 2 MR, 1 PR, 1 unk)
Subsequent therapy with MTX (n=1, 1 PR)
Subsequent therapy with apremilast (n=1, 1 MR)

Patients who failed to show any improvement one or more than one biologic regimen (n=6)

Relapse after stopping biologic (n=2, 1 infusion reaction, 1 lymphoma)

Attempted a single biologic regimen with no response (n=2)

Attempted multiple biologic regimens (n=4)

12 weeks of adalimumab (n=1)
14 weeks (4 infusions) of infliximab plus acitretin 50 mg/d (n=1)

Failed two different classes of biologics (n=1)
Clinical response after switch from TNF inhibitor to ustekinumab (n=2, 1 MR, 1 PR)
Clinical response to alternative TNF inhibitor (n=1, MR)

Complete clearance known in 59% (22/37) while on biologic

Median Length of Therapy: 25 weeks
So... is apremilast worth trying?

Table 7. Specific characteristics of regimens for apremilast. These patients are included in the above tables (there were no instances when a patient attempted apremilast but did not also at some point attempt a biologic), but the specific details of their apremilast regimens are described here.

<table>
<thead>
<tr>
<th>Age/Sex</th>
<th>Previously Attempted Systemic Drugs</th>
<th>Apremilast regimen</th>
<th>Primary Response Week/ Total Duration</th>
<th>Clinical Response</th>
<th>Citation</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt;70 M</td>
<td>Acitretin, MTX, CsA, prednisone, infliximab*</td>
<td>Apremilast 30 mg BID</td>
<td>4 weeks/8 months</td>
<td>Marked (near complete resolution)</td>
<td>Krase et al.7</td>
</tr>
<tr>
<td>68 M</td>
<td>Acitretin, MTX, CsA</td>
<td>Apremilast 30 mg BID</td>
<td>None/15 weeks</td>
<td>None</td>
<td>Maloney et al.12</td>
</tr>
<tr>
<td>68 M</td>
<td>Acitretin, MTX</td>
<td>Apremilast 30 mg BID</td>
<td>None/2 months</td>
<td>None</td>
<td>Campanelli and Sauder35</td>
</tr>
</tbody>
</table>

Abbreviations: MTX = methotrexate; CsA = cyclosporine; BID = twice daily; *Patient was erythrodermic and experienced benefit from an infusion of infliximab, but developed small lymphocytic lymphoma shortly afterwards.
Learning Points: PRP

• Don’t forget about drug reactions: acneiform, lichenoid, psoriasiform
• Also remember exposures that can triggers PRP: vaccines, HIV, insulin, sorafenib, imatinib
• PRP in kids can be ichthyosiform and chronic form in adults psoriasiform or eczematous
• Remember cancer associations: renal cell carcinoma, SCC?
• Most effective treatments: retinoids, etanercept, ustekinumab