Psoriasis: Connecting Science and Practice

- Part I: Psoriasis Here and Now: More than just a Skin Disease
- Part II: Treatment of Psoriatic Disease: Current and Evolving Strategies

Final Outcome Report for Eight Cities

Clinical Updates for Nurse Practitioners and Physician Assistants: 2014

Report Date: 02/15/2015
Co-Course Directors

Deborah Paschal, CRNP
Cardiothoracic Surgery Division
Penn-Presbyterian Medical Center
Philadelphia, PA

Gregg Sherman, MD
Family Practice
Northwest Heart and Heath
Margate, FL

Activity Planning Committee

Gregg Sherman, MD
Deborah Paschal, CRNP
Harvey C. Parker, Ph.D., CCMEP
Michelle Frisch, MPH, CCMEP
Alan Goodstat, LCSW
Cheryl C. Kay
The National Association for Continuing Education is accredited by the Accreditation Council for Continuing Medical Education to provide continuing medical education for physicians.

The National Association for Continuing Education designates this live activity for a maximum of 6.0 *AMA PRA Category 1 Credits™*. Physicians should claim only the credit commensurate with the extent of their participation in the activity.

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National Association for Continuing Education is approved as a provider of nurse practitioner continuing education by the American Association of Nurse Practitioners. AANP Provider Number 121222. This program has been approved for 6.0 contact hours of continuing education (which includes 3.50 pharmacology hours).*

*This applies to the full day CME activity, Clinical Updates for Nurse Practitioners and Physician Assistants.
Commercial Support

The Clinical Updates for Nurse Practitioners and Physician Assistants: 2014 series of CME activities were supported through educational grants or donations from the following companies:

- AbbVie
- Grifols
- Lilly
- Salix

Psoriasis: Connecting Science and Practice was supported by an independent medical education grant from AbbVie and an educational grant from Lilly. For further information concerning Lilly grant funding visit www.lillygrantoffice.com.
# Cities and Dates

Clinical Updates for Nurse Practitioners and Physician Assistants: 2014 Conference Schedule

<table>
<thead>
<tr>
<th>Date</th>
<th>Cities</th>
</tr>
</thead>
<tbody>
<tr>
<td>September 27, 2014</td>
<td>Fairfax, Virginia</td>
</tr>
<tr>
<td>October 11, 2014</td>
<td>Seattle, Washington</td>
</tr>
<tr>
<td>October 18, 2014</td>
<td>*Columbia, South Carolina</td>
</tr>
<tr>
<td>October 25, 2014</td>
<td>Charlotte, North Carolina</td>
</tr>
<tr>
<td>November 8, 2014</td>
<td>Orlando, Florida</td>
</tr>
<tr>
<td>November 15, 2014</td>
<td>Phoenix, Arizona</td>
</tr>
<tr>
<td>December 6, 2014</td>
<td>Pittsburgh, Pennsylvania</td>
</tr>
<tr>
<td>December 13, 2014</td>
<td>*Dallas, Texas</td>
</tr>
</tbody>
</table>

* Live Activity and Simulcast
Taking the Sting Out of Injectable Therapies for Diabetes: Improving Communication and Breaking Barriers

• Part I: Rationale for Injectable Therapies for Diabetes – Breaking the Barrier
• Part II: Intensifying Diabetes Therapy – Making Injectables Work for Your Patient: A Case Based Approach

Patricia Munz, MSN, APN, CDE or Gary Scheiner, MS, CDE or Mark Stolar, MD

Alpha-1 Antitrypsin Deficiency (AAT): A Primary Care Opportunity for Patients with COPD

Susan Collazo, RN, MSN, ARNP-BC or Franck Rahaghi, MD, MHS, FCCP

Psoriasis: Connecting Science and Practice

• Part I: Psoriasis Here and Now: More than just a Skin Disease
• Part II: Treatment of Psoriatic Disease: Current and Evolving Strategies

Brad P. Glick, DO, MPH, FAOCD or Paul S. Yamauchi, MD, PhD

Inflammatory Bowel Disease: Risk Stratification and Treatment Strategies

Kimberly Carter, MS, PA-C or Gerald W. Dryden, MD, MSPH, MSc, AGAF, FASGE
Levels of Evaluation

Consistent with the policies of the ACCME, NACE evaluates the effectiveness of all CME activities using a systematic process based on Moore’s model. This outcome study reaches Level 5.

- Level 1: Participation
- Level 2: Satisfaction
- Level 3: Declarative and Procedural Knowledge
- Level 4: Competence
- Level 5: Performance
- Level 6: Patient Health
- Level 7: Community Health

Level 1: Participation

- 519 attendees in 8 cities
- 60% NPs; 28% PAs; 4% Physicians; 3% RNs; 5% Other
- 56% in community-based practice
- 60% Primary Care; 2% Cardiology 3% Gastroenterology; 35% Other or did not respond
- 97% provide direct patient care

Did we reach the right audience? Yes!
Level 2: Satisfaction

- 98% rated the activity as very good to excellent
- 100% indicated the activity improved their knowledge
- 97% stated that they learned new strategies for patient care
- 90% said they would implement new strategies that they learned in their practice
- 99% said the program was fair-balanced and unbiased

Sample Size: N = approximately 519

Were our learners satisfied? Yes! Data was collected across eight cities for the Clinical Updates for Nurse Practitioners and Physician Assistants program.
Psoriasis: Connecting Science and Practice

Patients seen each week in a clinical setting with psoriasis:

- None: 18%
- 1-5: 63%
- 6-10: 11%
- 11-15: 4%
- 16-20: 2%
- 21-25: 2%
- > 25: 1%

Sample Size: N = approximately 519
Did Learners Say They Achieved Learning Objective?

Upon completion of this activity, I can now – Discuss the most up-to-date treatment protocols based on the current understanding of psoriasis and its related disorders as T-cell mediated immune diseases; Define psoriatic disease and outline the clinical presentation and pathophysiology of psoriasis; Identify and discuss the ever-expanding numbers of co-morbid conditions associated with psoriatic disease; Interpret and apply evidence-based approaches for the treatment of patients with psoriatic conditions.

Yes! 99% believed they did. Data was collected across eight cities for the Clinical Updates for Nurse Practitioners and Physician Assistants program.
Outcome Study Methodology

Goal
To determine the effect this CME activity had on learners with respect to competence to apply critical knowledge, confidence in treating patients with diseases or conditions discussed, and change in practice behavior.

Dependent Variables

1. **Level 3-5: Knowledge, Competence, and Performance**
   Case-based vignettes and pre- and post-test knowledge questions were asked with each session in the CME activity. Identical questions were also asked to a sample of attendees 4 weeks after the program to assess retention of knowledge. Responses can demonstrate learning and competence in applying critical knowledge. The use of case vignettes for this purpose has considerable predictive value. Vignettes, or written case simulations, have been widely used as indicators of actual practice behavior.  

2. **Practitioner Confidence**
   Confidence with the information relates directly to the likeliness of actively using knowledge. Practitioner confidence in his/her ability to diagnose and treat a disease or condition can affect practice behavior patterns.

3. **Level 5: Self-Reported Change in Practice Behavior**
   Four weeks after CME activity, practitioners are asked if they changed practice behavior.

4. Readiness to Change Behavior (Prochaska and DeClemente Model)

CME activities can motivate providers to move through different stages of change which can ultimately lead them to take action and modify their practice behavior in accordance with the objectives of the education. Movement through these stages of change is an important dependent variable to consider in evaluating the impact of CME. Participants were asked to evaluate their stage of change with respect to specific topics being presented.

- **Pre-contemplation stage**: I do not manage (XXX illness), nor do I plan to this year.
- **Contemplation stage**: I did not manage (XXX illness) before this course, but as a result of attending this course I'm thinking of managing it now.
- **Pre-contemplation/confirmation stage**: I do manage patients with (XXX Illness) and this course confirmed that I do not need to change my treatment methods.
- **Preparation for action stage**: I do manage patients with (XXX illness) and this course helped me change my treatment methods.

Psoriasis: Connecting Science and Practice

Faculty
Brad P. Glick, DO, MPH, FAOCD
Paul S. Yamauchi, MD, PhD

Learning Objectives

1. Discuss the most up-to-date treatment protocols based on the current understanding of psoriasis and its related disorders as T-cell mediated immune diseases.

2. Define psoriatic disease and outline the clinical presentation and pathophysiology of psoriasis.

3. Identify and discuss the ever-expanding numbers of co-morbid conditions associated with psoriatic disease.

4. Interpret and apply evidence-based approaches for the treatment of patients with psoriatic conditions.
### Key Findings

**Psoriasis: Connecting Science and Practice**

<table>
<thead>
<tr>
<th>Category</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Knowledge/Competence</strong></td>
<td>Learners demonstrated improvement from pre to post-testing in their answers to <em>five</em> out of <em>five</em> of the case-based questions regarding treating patients with psoriasis.</td>
</tr>
<tr>
<td><strong>Confidence</strong></td>
<td>Whereas the majority of learners rated themselves as having very low confidence in their understanding of regarding treating patients with psoriasis before the education, most of the learners showed very high gains in confidence after the program.</td>
</tr>
<tr>
<td><strong>Intent to Perform</strong></td>
<td>As a result of this program, 27% of learners who did not treat patients with psoriasis before are considering doing so, while 46% who do, indicated that they will change their treatment methods.</td>
</tr>
<tr>
<td><strong>Change of Practice Behavior</strong></td>
<td>Over 84% of learners who responded to our four week survey indicated that they had changed their practice behavior to implement the learning objectives of this program within four weeks after they attended the activity.</td>
</tr>
</tbody>
</table>

*N= 26

*Four week case question survey is sent to one city per topic*
Case Vignette Knowledge and Competence Assessment Questions
(Presented before and after lecture. Boxed answer is correct.)

Which of the following represents the most accurate description of the current, and most accepted pathophysiologic mechanism responsible for psoriasis vulgaris:
(Learning Objective 1)

- B-cell immune mediated disease
- Upregulation of interleukins 3 & 8
- Downregulation of cytokines CCK-1 & CCK-3
- A primary disorder of keratinocyte function

P Value: < 0.001 – Significant

Green highlight indicates significant difference between pre and post testing.
A 38 y/o male with a 15 year h/o psoriasis presents with a flare involving his elbows, abdomen, lower back & scalp with worsening subungual hyperkeratosis and nail pitting. New onset R wrist arthralgia is reported with no h/o trauma. Which work-up and therapeutic protocol is most appropriate: (Learning Objective 1,4)

Pre N= 197
Post N= 211

Green highlight indicates significant difference between pre and post testing.
Evidence-based research indicates that the relative risk of myocardial infarction in psoriasis patients is highest in which patient subgroup? (Learning Objective 3)

- Young patients with severe psoriasis
- Older patients with mild psoriasis
- Older patients with severe psoriasis
- All patients with severe psoriasis, regardless of age

P Value: < 0.001 – Significant

Green highlight indicates significant difference between pre and post testing.
A 34 y/o obese WF (BMI 32.4) with plaque psoriasis presents to get established. During this visit, you counsel her that her risks of developing all of the following conditions are increased except: (Learning Objective 3)

- Diabetes Mellitus
- Hashimoto's thyroiditis
- Ischemic Heart Disease
- Hypertension
- Hyperlipidemia

Pre N= 193  Post N= 222

Green highlight indicates significant difference between pre and post testing.
A 45 y/o male with long standing psoriasis has developed morning stiffness, fatigue and arthralgias involving the R hand. All of the following diagnostic tests and evaluation tools should be included in the patients work-up except: (Learning Objective 1)

- Body surface area evaluation utilizing the "rule of the palms"
- Cardiovascular assessment including blood pressure check, fasting blood sugar and evaluation of serum lipids
- Inspection and evaluation of the extent of potential joint involvement
- Placement of purified protein derivative (PPD) or use of Quantiferon Gold
- Psychiatric testing prior to the initiation of biologic therapy

P Value: < 0.001 - Significant

Green highlight indicates significant difference between pre and post testing.
George is a 36 y/o obese male who presents with complaints of a rash on his elbows and knees with really bad dandruff. He not only thinks he may have psoriasis, as does his father, but also is concerned about the possibility of developing severe arthritis in his hands since he is a musician. You advise him that if he is going to develop psoriatic arthritis, it most likely tends to occur: (Learning Objective 2)
Which of the statements below describes your approach to diagnosing and treating patients with psoriasis?

- Pre-Contemplation Stage
- Contemplation Stage
- Preparation for Action Stage
- Pre-Contemplation/Confirmation Stage

Change in Practice Behavior Question
(presented after the lecture)

I do not diagnosis and/or treat patients with psoriasis, nor do I plan to this year.

I did not diagnosis and/or treat patients with psoriasis before this course, but as a result of attending this course I'm thinking of doing this now.

I do participate in the diagnosis and treatment of patients with psoriasis and I now plan to change my treatment methods based on completing this course.

I do participate in the diagnosis and treatment of patients with psoriasis and this course confirmed that I don't need to change my methods.
Which of the following represents the most accurate description of the current, and most accepted pathophysiologic mechanism responsible for psoriasis vulgaris:

(Learning Objective 1)

- B-cell immune mediated disease
- Upregulation of interleukins 3 & 8
- Downregulation of cytokines CCK-1 & CCK-3
- T-cell immune mediated disease
- A primary disorder of keratinocyte function

Pre N= 182  Post N= 222  4 Weeks Post N= 26

*Four week case question survey is sent to one city per topic

Green highlight indicates significant difference between pre and post testing.
A 38 y/o male with a 15 year h/o psoriasis presents with a flare involving his elbows, abdomen, lower back & scalp with worsening subungual hyperkeratosis and nail pitting. New onset R wrist arthralgia is reported with no h/o trauma. Which work-up and therapeutic protocol is most appropriate: (Learning Objective 1,4)

Four Week Case Study Questions

Key Findings

Boxed answer is correct

H&P, Hydrocortisone 2.5% cream & moisturizer and follow up in 3 months
Calcipotriene cream 0.05% ointment, moisturizer, emollients & naproxen
H&P, clobetasol 0.05% ointment, moisturizer, check labs, tuberculosis testing, CXR (only if Tb is positive) - consider adalimumab therapy &/or Rheumatology consult
Begin UVB, tazarotene cream 0.05% & 2.5% HC cream
Check labs, tuberculosis testing, CXR (only if Tb is positive), prednisone, triamcinilone ointment 0.1% & calcipotriene/betamethasone suspension

Pre N= 197  Post N= 211  4 Weeks Post N= 26

*Four week case question survey is sent to one city per topic

Green highlight indicates significant difference between pre and post testing.
Evidence-based research indicates that the relative risk of myocardial infarction in psoriasis patients is highest in which patient subgroup? (Learning Objective 3)

- Young patients with severe psoriasis: 77% Pre, 41% Post
- Older patients with mild psoriasis: 3% Pre, 1% Post
- Older patients with severe psoriasis: 30% Pre, 9% Post
- All patients with severe psoriasis, regardless of age: 59% Pre, 49% Post

Green highlight indicates significant difference between pre and post testing.

*Four week case question survey is sent to one city per topic
A 34 y/o obese WF (BMI 32.4) with plaque psoriasis presents to get established. During this visit, you counsel her that her risks of developing all of the following conditions are increased except: (Learning Objective 3)

<table>
<thead>
<tr>
<th>Condition</th>
<th>Pre %</th>
<th>Post %</th>
<th>4 Weeks Post %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diabetes Mellitus</td>
<td>12%</td>
<td>2%</td>
<td>8%</td>
</tr>
<tr>
<td>Hashimoto's thyroiditis</td>
<td>2%</td>
<td>8%</td>
<td>86%</td>
</tr>
<tr>
<td>Ischemic Heart Disease</td>
<td>10%</td>
<td>5%</td>
<td>5%</td>
</tr>
<tr>
<td>Hypertension</td>
<td>17%</td>
<td>5%</td>
<td>4%</td>
</tr>
<tr>
<td>Hyperlipidemia</td>
<td>19%</td>
<td>2%</td>
<td>0%</td>
</tr>
</tbody>
</table>

Green highlight indicates significant difference between pre and post testing.

*Four week case question survey is sent to one city per topic.
A 45 y/o male with long standing psoriasis has developed morning stiffness, fatigue and arthralgias involving the R hand. All of the following diagnostic tests and evaluation tools should be included in the patients work-up except: (Learning Objective 1)

1. Body surface area evaluation utilizing the "rule of the palms"
2. Cardiovascular assessment including blood pressure check, fasting blood sugar and evaluation of serum lipids
3. Inspection and evaluation of the extent of potential joint involvement
4. Placement of purified protein derivative (PPD) or use of Quantiferon Gold
5. Psychiatric testing prior to the initiation of biologic therapy

Pre N = 186  
Post N = 195  
4 Weeks Post N = 26

*Four week case question survey is sent to one city per topic
George is a 36 y/o obese male who presents with complaints of a rash on his elbows and knees with really bad dandruff. He not only thinks he may have psoriasis, as does his father, but also is concerned about the possibility of developing severe arthritis in his hands since he is a musician. You advise him that if he is going to develop psoriatic arthritis, it most likely tends to occur: (Learning Objective 2)
Describe/list any other educational activities that you attended in the last month concerning the treatment of psoriasis.

Intention to Change Practice Behavior and Implement Learning
Psoriasis: Connecting Science and Practice

85% None
12% Live Conferences
0% Enduring webcasts or monographs
4% Journal activities

4 Weeks Post N= 26
What specific skills or practice behaviors have you implemented for patients with psoriasis since this CME activity? (Comments received from attendees at 4 week follow up)

- More comfortable in performing a thorough examination of painful joints
- Increased knowledge of how to perform complete work-up and develop a treatment plan focused on psoriasis
- Implemented lab protocol for my office to improve evidence based treatment
- Improved knowledge / More aware of the overall workup
- Able to provide better education for patients on therapeutic options for psoriasis
- Now consider referral to rheumatology, dermatology, and cardiology earlier in treatment plan
- Encourage patients to take/apply medications as prescribed
- Understand the use of biologic agents
- Treat patients with mild-to-moderate plaque psoriasis initially with topical corticosteroids and emollients
- More aware of need to monitor for psoriatic arthritis and common sites or presenting states
- Using alternative skin moisturizers not commonly recommended such as Crisco or Vaseline
Psoriasis: Connecting Science and Practice

What specific barriers have you encountered that may have prevented you from successfully implementing strategies for patients with psoriasis since this CME activity? (Comments received from attendees at 4 week follow up)

- Lack of current knowledge regarding biologics-how to initiate, whom to start on biologics and why
- Unaware of cost of treatment and insurance coverage so not used to prescribing medications
- Unaware of the extent and the systemic complications of psoriasis
- Do not see many patients with psoriasis
Changes in Confidence from Pre to Post-Testing
Psoriasis: Connecting Science and Practice

On a scale of 1 to 5, please rate how confident you would be in treating a patient with psoriasis?

<table>
<thead>
<tr>
<th>Level</th>
<th>Pre %</th>
<th>Post %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not at all confident</td>
<td>32%</td>
<td>3%</td>
</tr>
<tr>
<td>Slightly confident</td>
<td>44%</td>
<td>17%</td>
</tr>
<tr>
<td>Moderately confident</td>
<td>18%</td>
<td>46%</td>
</tr>
<tr>
<td>Pretty much confident</td>
<td></td>
<td>30%</td>
</tr>
<tr>
<td>Very confident</td>
<td>5%</td>
<td>2%</td>
</tr>
</tbody>
</table>

Pre N= 182  Post N= 178
The need for continued education in Psoriasis was demonstrated based on literature reviews and surveys completed prior to the conference series. Attendee knowledge was assessed at 3 points for this intensive 2 hour program: prior to the lecture, immediately following the lecture and again at 4 weeks after the conference using the case vignettes and knowledge questions listed above. The results indicated a statistically significant improvement in knowledge in all 5 of the areas tested. Specifically, as a result of this lecture, participants: are aware that psoriasis vulgaris is a T-cell immune mediated disease; understand that the workup categorizes a patient for topical or systemic therapy and implementation of appropriate treatment plans in treating moderate to severe psoriasis; recognize that psoriatic disease is an independent risk factor for co-morbid conditions such as cardiovascular disease which is greatest in young patients with severe psoriasis; know that psoriasis increases the psoriatic patients risk for diabetes, ischemic heart disease, hypertension and hyperlipidemia but does not influence the patient's risk for Hashimoto’s thyroiditis; recognize that prior to initiation of biologic therapy the diagnostic and evaluation testing required includes assessing body surface area, cardiovascular assessment, evaluation of joint involvement, placement of PPD or use of Quantiferon Gold but psychiatric testing is not required; and are aware that psoriatic arthritis tends to develop 10 yrs after the onset of psoriasis vulgaris.

Data obtained from participants 4 weeks after the program demonstrated some decay, and even improvement in 1 area of learning from the post-test scores. Several gaps in knowledge were evident with the following findings: 23% of participants still don’t realize that psoriasis vulgaris is a T-cell mediated disease; 12% of participants remain unclear on the recommended workup and implementation of treatment plans for patients with moderate to severe psoriasis; 23% of participants are still unaware that the risk of cardiovascular disease is increased particularly in young patients with severe psoriasis.
Discussion and Implications
Psoriasis: Connecting Science and Practice

19% of participants still do not realize that psoriasis increases risk for diabetes, hypertension, ischemic heart disease and hyperlipidemia but not Hashimoto’s thyroiditis; 35% of participants are unaware of the pre-treatment workup required to initiate biologic therapy; 43% of participants are unaware that that psoriatic arthritis tends to develop 10 yrs after the onset of psoriasis vulgaris.

Moderate to very confident levels rose from 24% to 81% by the end of the program. As a result of this program, 27% of learners who did not treat patients with psoriasis before are considering doing so, while 46% who do, indicated that they will change their treatment methods. 84% of learners who responded to our four week survey indicated that they actually had changed their practice behavior after they attended the activity.

Attendees indicated multiple new, specific, practice behaviors they implemented as a result of this program that included greater comfort with the evaluation and treatment of a patient with psoriasis, more confidence in educating patients, understand the role and use of biologic therapy and referring patients for Dermatology, Cardiology and Rheumatology evaluation earlier in the treatment plan. Nearly 85% of participants had no other exposure to an educational activity on this topic in the month after this conference indicating their behavioral changes were most likely related to this program.

Barriers to care included lack of experience with biologic therapies, lack of knowledge of the systemic impact of psoriasis, and limited patient exposure.

The notable changes in post test scores signify a clear gap in knowledge and an unmet need among primary care clinicians. It continues to be an important area for future educational programs.