Translating the 2019 AAD-NPF Guidelines of Care for Psoriasis With Attention to Comorbidities

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PRACTICE **POINTS**

- Educating patients about psoriasis and its extracutaneous manifestations, available treatment options, and the impact of lifestyle choices is advised to maximize their patient's disease awareness and to promote a collaborative physician-patient partnership.
- Physicians are strongly recommended to screen patients with psoriasis for the presence of disease comorbidities to ensure comprehensive management of their disease.
- Managing psoriasis as a multisystem inflammatory disorder requires the combined effort of dermatologists and other specialists to prevent and treat disease comorbidities and enhance patients' quality of life.

In April 2019, the American Academy of Dermatology (AAD) and the National Psoriasis Foundation (NPF) released a set of guidelines regarding the management of psoriasis with a focus on its extracutaneous manifestations—comorbidities, mental health, psychosocial wellness, and quality of life (QOL). These guidelines provide the most up-to-date evidence on the screening and treatment recommendations for these disease comorbidities. The purpose of this review is to present the recommendations in a form that can be easily applied in clinical practice.

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Psoriasis is a chronic and relapsing systemic inflammatory disease that predisposes patients to a host of other conditions. It is believed that these widespread effects are due to chronic inflammation and cytokine activation, which affect multiple body processes and lead to the development of various comorbidities that need to be proactively managed.

In April 2019, the American Academy of Dermatology (AAD) and National Psoriasis Foundation (NPF) released recommendation guidelines for managing psoriasis in adults with an emphasis on common disease comorbidities, including psoriatic arthritis (PsA), cardiovascular disease (CVD), inflammatory bowel disease (IBD), metabolic syndrome, and mood disorders. Psychosocial wellness, mental health, and quality of life (QOL) measures in relation to psoriatic disease also were discussed.[1]

The AAD-NPF guidelines address current screening, monitoring, education, and treatment recommendations for the management of psoriatic comorbidities. The Table and eTable summarize the screening recommendations.

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The eTable is available in the Appendix online at www.mdedge.com/dermatology.

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Summary of Psoriasis Comorbidities Without Formal Recommendations[a]

Comorbid condition	Indications for screening	Screening recommendation
Renal disease	Renal disease should be considered with increasing age and when nephrotoxic medications such as cyclosporine and nonsteroidal anti-inflammatory drugs are used in patients with psoriasis; patients with severe psoriasis are at increased risk for renal disease	Patients with evidence of CKD should be referred to their PCP or a nephrologist; patients with severe disease should be evaluated with blood urea nitrogen, creatinine, and urine microalbumin
COPD	Patients with severe psoriasis are at increased risk for COPD; patients with COPD risk factors should be evaluated	Referral to appropriate health care provider for further evaluation
Sleep apnea	Patients who have risk factors for OSA should be referred to the appropriate health care provider for further evaluation	Referral to appropriate health care provider for further evaluation
Malignancy	Dermatologists should be aware of the increased risk for malignancy and should perform age-appropriate cancer screenings; atypical cutaneous lesions should prompt evaluation for skin cancer	Patients should follow all USPSTF/CDC-recommended guidelines for cancer screenings; atypical skin lesions should be biopsied to rule out malignancy

Abbreviations: CKD, chronic kidney disease; PCP, primary care physician; COPD, chronic obstructive pulmonary disease; OSA, obstructive sleep apnea; USPSTF, United States Preventative Services Task Force; CDC, Centers for Disease Control and Prevention.

[a]Strength of recommendation was not assessed for these comorbidities.

These guidelines aim to assist dermatologists with comprehensive disease management by addressing potential extracutaneous manifestations of psoriasis in adults.

Screening and Risk Assessment

Patients with psoriasis should receive a thorough history and physical examination to assess disease severity and risk for potential comorbidities. Patients with greater disease severity—as measured by body surface area (BSA) involvement and type of therapy required—have a greater risk for other disease-related comorbidities, specifically metabolic syndrome, renal disease, chronic obstructive pulmonary disease (COPD), obstructive sleep apnea, uveitis, IBD, malignancy, and increased mortality.[2] Because the likelihood of comorbidities is greatest with severe disease, more frequent monitoring is recommended for these patients.

Psoriatic Arthritis

Patients with psoriasis need to be evaluated for PsA at every visit. Patients presenting with signs and symptoms suspicious for PsA—joint swelling, peripheral joint involvement, and joint inflammation—warrant further evaluation and consultation. Early detection and treatment of PsA is essential for preventing unnecessary suffering and progressive joint destruction.[3]

There are several PsA screening questionnaires currently available, including the Psoriatic Arthritis Screening Evaluation, Psoriasis Epidemiology Screening Tool, and Toronto Psoriatic Arthritis Screen. No significant differences in sensitivity and specificity were found among these questionnaires when using the Classification Criteria for Psoriatic Arthritis as the gold standard. All 3 questionnaires—the Psoriatic Arthritis Screening Evaluation and the Psoriasis Epidemiology Screening Tool were developed for use in dermatology and rheumatology clinics, and the Toronto Psoriatic Arthritis Screen was developed for use in the primary care setting—were found to be effective in dermatology/rheumatology clinics and primary care clinics, respectively.[3] False-positive results predominantly were seen in patients with degenerative joint disease or osteoarthritis. Dermatologists should conduct a thorough physical examination to distinguish PsA from degenerative joint disease. Imaging and laboratory tests to evaluate for signs of systemic inflammation (erythrocyte sedimentation rate, C-reactive protein) also can be helpful in distinguishing the 2 conditions; however, these metrics have not been shown to contribute to PsA diagnosis.[1] Full rheumatologic consultation is warranted in challenging cases.

Cardiovascular Disease

The American Heart Association and the American College of Cardiology have identified chronic inflammatory states, such as psoriasis, as inducing factors that predispose patients to CVD. Many studies have found an association among psoriasis, coronary artery disease, myocardial infarction (MI), and stroke.[4-7] It is strongly recommended that dermatologists educate patients of their increased risk for CVD, given the association between psoriasis and major adverse cardiovascular events (eg, stroke, heart failure, MI) and cardiovascular health.

However, patients with congestive heart failure were found to have an increased risk of mortality associated with use of tumor necrosis factor (TNF) α inhibitors (P=.016).[8] Thus, TNF inhibitors are contraindicated in patients with New York Heart Association Class III or Class IV congestive heart failure.[9]

Primary care physicians (PCPs) are recommended to screen patients for CVD risk factors using height, weight, blood pressure, blood glucose, hemoglobin A_{1C}, lipid levels, abdominal circumference, and body mass index (BMI). Lifestyle modifications such as smoking cessation, exercise, and dietary changes are encouraged to achieve and maintain a normal BMI.

Dermatologists also need to give special consideration to comorbidities when selecting medications and/or therapies for disease management. Patients on TNF inhibitors have a lower risk for MI compared with patients using topical medications, phototherapy, and other oral agents.[10] Additionally, patients on TNF inhibitors have a lower risk for occurrence of major adverse cardiovascular events compared with patients treated with methotrexate or phototherapy.[11,12]

Metabolic Syndrome

Numerous studies have demonstrated an association between psoriasis and metabolic syndrome. Patients with increased BSA involvement and psoriasis area and severity index scores have a higher prevalence of metabolic syndrome.[13] Patients with psoriasis have an increased risk for the following conditions compared to controls: obesity (38% vs 31%; odds ratio [OR], 1.38; 95% CI, 1.29-1.48), elevated triglycerides (36% vs 28%; OR, 1.49; 95% CI, 1.39-1.60), hypertension (31% vs 28%; OR, 1.20; 95% CI, 1.11-12.9), and elevated glucose levels (22% vs 16%; OR, 1.44; 95% CI, 1.33-1.56).[14] Dermatologists are strongly recommended to inform patients about the risk for metabolic syndrome and to encourage the measurement of blood pressure, waist circumference, fasting blood glucose, hemoglobin A_{1C}, and fasting lipid levels with their PCP when indicated. Body mass index and waist circumference also should be measured annually in patients with moderate to severe psoriasis because of the association with disease severity.

The association between psoriasis and weight loss has been analyzed in several studies. Weight loss, particularly in obese patients, has been shown to improve psoriasis severity, as measured by psoriasis area and severity index score and QOL measures.[15] Another study found that gastric bypass was associated with a significant risk reduction in the development of psoriasis (P=.004) and the disease prognosis (P=.02 for severe psoriasis; P=.01 for PsA).[16] Therefore, patients with moderate to severe psoriasis are recommended to have their obesity status determined according to national guidelines. For patients with a BMI above 40 kg/m^2 and standard weight-loss measures fail, bariatric surgery is recommended. Additionally, the impact of psoriasis medications on weight has been studied. Apremilast has been associated with weight loss, whereas etanercept and infliximab have been linked to weight gain.[17,18]

An association between psoriasis and hypertension also has been demonstrated by studies, especially among patients with severe disease. Therefore, patients with moderate to severe psoriasis are recommended to have their blood pressure evaluated according to national guidelines, and those with a blood pressure of 140/90 mm Hg or higher should be referred to their PCP for assessment and treatment. Current evidence does not support restrictions on antihypertensive medications in patients with psoriasis. Physicians should be aware of the potential for cyclosporine to induce hypertension, which should be treated, specifically with amlodipine.[19]

Many studies have demonstrated an association between psoriasis and dyslipidemia, though the results are somewhat conflicting. In 2018, the American Heart Association and the American College of Cardiology deemed psoriasis as an atherosclerotic CVD risk-enhancing condition, favoring early initiation of statin therapy. Because dyslipidemia plays a prominent role in atherosclerosis and CVD, patients with moderate to severe psoriasis are recommended to undergo periodic screening with lipid tests (eg, fasting total cholesterol, low-density lipoprotein cholesterol, high-density lipoprotein cholesterol, triglycerides).[20] Patients with elevated fasting triglycerides or low-density lipoprotein cholesterol should be referred to their PCP for further management. Certain psoriasis medications also have been linked to dyslipidemia. Acitretin and cyclosporine are known to adversely affect lipid levels, so patients treated with either agent should undergo routine monitoring of serum lipid levels.

Psoriasis is strongly associated with diabetes mellitus. Because of the increased risk for diabetes in patients with severe disease, regular monitoring of fasting blood glucose and/or hemoglobin A_{1C} levels in patients with moderate to severe psoriasis is recommended. Patients who meet criteria for prediabetes or diabetes should be referred to their PCP for further assessment and management.[21,22]

Mood Disorders

Psoriasis affects QOL and can have a major impact on patients' interpersonal relationships. Studies have shown an association between psoriasis and mood disorders, specifically depression and anxiety. Unfortunately, patients with mood disorders are less likely to seek intervention for their skin disease, which poses a tremendous treatment barrier. Dermatologists should regularly monitor patients for psychiatric symptoms so that resources and treatments can be offered.

Certain psoriasis therapies have been shown to help alleviate associated depression and anxiety. Improvements in Beck Depression Inventory and Hamilton Depression Rating Scale scores were seen with etanercept.[23] Adalimumab and ustekinumab showed improvement in Dermatology Life Quality Index compared with

placebo.[24,25] Patients receiving Goeckerman treatment also had improvement in anxiety and depression scores compared with conventional therapy.[26] Biologic medications had the largest impact on improving depression symptoms compared with conventional systemic therapy and phototherapy.[27] The recommendations support use of biologics and the Goeckerman regimen for the concomitant treatment of mood disorders and psoriasis.

Renal Disease

Studies have supported an association between psoriasis and chronic kidney disease (CKD), independent of risk factors including vascular disease, hypertension, and diabetes. The prevalence of moderate to advanced CKD also has been found to be directly related to increasing BSA affected by psoriasis.[28] Patients should receive testing of blood urea nitrogen, creatinine, and urine microalbumin levels to assess for occult renal disease. In addition, physicians should be cautious when prescribing nephrotoxic drugs (nonsteroidal anti-inflammatory drugs and cyclosporine) and renally excreted agents (methotrexate and apremilast) because of the risk for underlying renal disease in patients with psoriasis. If newly acquired renal disease is suspected, physicians should withhold the offending agents. Patients with psoriasis with CKD are recommended to follow up with their PCP or nephrologist for evaluation and management.

Pulmonary Disease

Psoriasis also has an independent association with COPD. Patients with psoriasis have a higher likelihood of developing COPD (hazard ratio, 2.35; 95% CI, 1.42-3.89; $P<.01$) than controls.[29] The prevalence of COPD also was found to correlate with psoriasis severity. Dermatologists should educate patients about the association between smoking and psoriasis as well as advise patients to discontinue smoking to reduce their risk for developing COPD and cancer.

Patients with psoriasis also are at an increased risk for obstructive sleep apnea. Obstructive sleep apnea should be considered in patients with risk factors including snoring, obesity, hypertension, or diabetes.

Inflammatory Bowel Disease

Patients with psoriasis have an increased risk for developing IBD. The prevalence ratios of both Crohn disease (2.49) and ulcerative colitis (1.64) are increased in patients with psoriasis relative to patients without psoriasis.[30] Physicians need to be aware of the association between psoriasis and IBD and the effect that their coexistence may have on treatment choice for patients.

Adalimumab and infliximab are approved for the treatment of IBD, and certolizumab and ustekinumab are approved for Crohn disease. Use of TNF inhibitors in patients with IBD may cause psoriasiform lesions to develop.[31] Nonetheless, treatment should be individualized and psoriasiform lesions treated with standard psoriasis measures. Psoriasis patients with IBD are recommended to avoid IL-17–inhibitor therapy, given its potential to worsen IBD flares.

Malignancy

Psoriasis patients aged 0 to 79 years have a greater overall risk for malignancy compared with patients without psoriasis.[32] Patients with psoriasis have an increased risk for respiratory tract cancer, upper aerodigestive tract cancer, urinary tract cancer, and non-Hodgkin lymphoma.[33] A mild association exists between PsA and lymphoma, nonmelanoma skin cancer (NMSC), and lung cancer.[34] More severe psoriasis is associated with greater risk for lymphoma and NMSC. Dermatologists are recommended to educate patients on their risk for certain malignancies and to refer patients to specialists upon suspicion of malignancy.

Risk for malignancy has been shown to be affected by psoriasis treatments. Patients treated with UVB have reduced overall cancer rates for all age groups (hazard ratio, 0.52; $P=.3$), while those treated with psoralen plus UVA have an increased incidence of squamous cell carcinoma.[32,33] Adalimumab was correlated with increased risk for NMSC in patients with psoriasis but did not have an increased risk for all cancers collectively when used for various immune-mediated inflammatory diseases.[35] In contrast, a meta-analysis of randomized clinical trials found no association with TNF inhibitor use and NMSC.[36] Ustekinumab had no association with malignancy.[37] Treatment history should be elucidated because of higher rates of squamous cell carcinoma in patients with prior psoralen plus UVA, cyclosporine, or methotrexate use.[33] To address malignancy risk, patients with psoriasis should undergo regular screenings for skin cancer and follow national guidelines for age-appropriate cancer screenings.

Lifestyle Choices and QOL

A crucial aspect of successful psoriasis management is patient education. The strongest recommendations support lifestyle changes, such as smoking cessation and limitation of alcohol use. A tactful discussion regarding substance use, work productivity, interpersonal relationships, and sexual function can address substantial effects of psoriasis on QOL so that support and resources can be provided.

Final Thoughts

Management of psoriasis is multifaceted and involves screening, education, monitoring, and collaboration with PCPs and specialists. Regular follow-up with a dermatologist and PCP is strongly recommended for patients with psoriasis given the systemic nature of the disease. The 2019 AAD-NPF recommendations provide important information for dermatologists to coordinate care for complicated psoriasis cases, but clinical judgment is paramount when making medical decisions. The consideration of comorbidities is critical for developing a

comprehensive treatment approach, and this approach will lead to better health outcomes and improved QOL for patients with psoriasis.

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APPENDIX

eTABLE. Summary of Psoriasis Comorbidities and Recommendations Regarding Screening

Comorbid condition	Recommendation	Level of recommendation[a]	Indications for screening	Screening recommendation
PsA	Patients with signs suspicious for PsA should be fully evaluated for PsA	A	Patients should be screened for PsA at every visit	Physicians may consider using a formal screening tool of their choice to facilitate early detection of PsA
	PsA should be considered in all patients with psoriasis, and patients should be informed about the association between psoriasis and PsA	B		
CVD	CV risk assessment (screening for hypertension, diabetes, and hyperlipidemia) with national guidelines is recommended in all patients	B	At-risk patients should be evaluated, particularly those with hypertension, history of CVD, diabetes, or more severe psoriatic disease	Screening intervals may vary among patients depending on individual risk factors and overall health
Metabolic syndrome	Patients with psoriasis should have their BP checked according to national guidelines; those with abnormal BP should be referred to their PCP	A	Patients should be screened at regular intervals for signs of metabolic syndrome, especially those with more severe psoriatic disease	Patients should be screened for hypertension (every 3–5 y), diabetes (every 3 y), and CV risk (every 4–6 y)
	Patients should be informed about increased risk for metabolic syndrome and be evaluated according to national guidelines by an appropriate health care professional	B		
Mood disorders	Patients with mood disorders should be referred to an appropriate health care professional for assessment and management	A	Patients showing signs or symptoms of anxiety, depression, or suicidal ideation should be screened and referred for treatment	Any patient showing signs/symptoms consistent with mental health disease should be seen by an appropriate health care professional for further assessment and management
	Patients should be informed about the association between psoriasis and anxiety and depression	B		
IBD	Patients with psoriasis found to have concerns for IBD should be referred to their PCP or gastroenterologist for evaluation	A	The physician should be aware of the signs and symptoms of IBD and refer for management if they arise	Patients should be educated about the risk for IBD and should have their bowel disease assessed and managed by their PCP or gastroenterologist
	Patients with psoriasis should be informed about the association of psoriasis and IBD	B		

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eTABLE. (continued)

Comorbid condition	Recommendation	Level of recommendation[a]	Indications for screening	Screening recommendation
Lifestyle choices	Patients with nicotine or alcohol dependency should be referred to expert health professionals	A	Counseling is indicated in patients who are previous or active tobacco and/or alcohol users	Resources, therapeutics, and support for successful discontinuation or moderation of alcohol and tobacco are indicated; referral to appropriate specialists is recommended
	Patients should be educated regarding the association between psoriasis and smoking/alcohol use	B		

Abbreviations: PsA, psoriatic arthritis; CVD, cardiovascular disease; CV, cardiovascular; BP, blood pressure; PCP, primary care physician; IBD, inflammatory bowel disease.

[a]Strength of Recommendation Taxonomy (SORT): A, recommendation based on consistent and good-quality, patient-oriented evidence; B, recommendation based on inconsistent or limited-quality, patient-oriented evidence; C, recommendation based on consensus, opinion, case studies, or disease-oriented evidence.