Using Guidelines of Care to Lower Cardiovascular Risk in Patients with Psoriasis

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KEYWORDS

• Psoriasis • Psoriatic • Cardiovascular • Guidelines • Biologics • Statin • Mortality • Myocardial infarction

KEY POINTS

- Cardiovascular disease is the most important cause of excess mortality in patients with psoriatic disease, and cardiovascular risk factors are underdiagnosed and undermanaged in these patients.
- Dermatologists should perform at least baseline cardiovascular risk factor screening for all psoriasis patients in addition to educating patients about their increased risk of developing cardiovascular disease.
- Appropriate management of patients' psoriatic disease and cardiovascular risk factors can produce substantial morbidity and mortality benefits for patients.
- Dermatologists should establish relationships with primary care providers and/or preventive cardiologists in their community to facilitate multidisciplinary care aimed at identifying and managing modifiable cardiovascular risk factors in psoriasis patients.

INTRODUCTION

Psoriasis is a common, chronic disease affecting over 8 million people in the United States and millions more worldwide.[1–3] Advances in genetics, immunology, and epidemiology have redefined psoriasis as a systemic inflammatory disease with a substantial burden of major cardiovascular (CV) events and a reduced life expectancy.[4,5] Patients with psoriasis have an increased prevalence of major modifiable CV risk factors (hypertension, obesity, diabetes, dyslipidemia, and smoking)[6–8] as well as an increased risk of myocardial infarction, stroke, and CV mortality, independent of traditional risk factors routinely collected in medical practice.[9–11] Compared to other inflammatory diseases, patients with psoriasis are more likely to show signs of insulin resistance manifesting as metabolic syndrome and resulting in dyslipidemia and diabetes. In addition, genetic studies suggest a causal relationship between obesity and psoriasis.[12–14] Moreover, for every 10% increase in body surface area affected by psoriasis, there is a 20% increase in risk for developing diabetes.[15]

Patients with moderate-to-severe psoriasis die 5 years earlier than expected, independent of risk factors, and CV disease accounts for approximately 42% of this excess mortality.[11] Meta-analyses demonstrate that patients with psoriasis have an increased risk of CV death of more than 40% compared to similar patients who do not have psoriasis, and patients with psoriasis affecting greater than 10% of their body surface area have an 80% increased risk of death,

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independent of risk factors.[16,17] In fact, these risks are greater than the increased risk of CV mortality due to type 2 diabetes and similar to risks associated with rheumatoid arthritis.[18,19] Putting these risks in a clinical dermatology perspective, patients with moderate-to-severe psoriasis are 30 times more likely to experience a major CV event attributable to psoriasis than to develop a melanoma each year.[20] While it is thought that the pathophysiology of psoriasis contributes to the risk of CV disease, emerging genetic data suggest the relationship may be bidirectional, as the genetics of coronary artery disease and dyslipidemia are causally related to developing psoriasis.[21,22]

IMPACT OF PSORIASIS TREATMENT ON CARDIOVASCULAR RISK

Given that increasing severity of psoriasis translates into greater CV risk, it is logical to predict that controlling psoriasis should result in improved cardiometabolic outcomes. Several large observational studies suggest that patients with psoriasis who take systemic therapies, including tumor necrosis factor (TNF) inhibitors and methotrexate, have a reduced risk of major CV events and death compared to similar patients who do not take systemic therapies.[23–26] However, observational studies should be interpreted with caution due to a strong healthy user effect among psoriasis patients who use systemic agents.[27] Indeed, a recent large meta-analysis assessing the use of biologics for several immune-mediated diseases found that agents inhibiting interleukin (IL)-12/IL-23, Janus kinase (JAK), or TNFα were associated with a higher risk of major adverse CV events compared with placebo.[28] On the other hand, mechanistic studies suggest that many psoriasis treatments improve vascular and laboratory markers of inflammation and CV risk. For example, in patients with psoriasis, biologic therapies may reduce coronary inflammation and coronary plaque burden,[29,30] ustekinumab (an IL-12/IL-23 inhibitor) may reduce aortic vascular inflammation measured on imaging studies,[31] apremilast (a phosphodiesterase 4 inhibitor) may reduce visceral adiposity,[32] and adalimumab (a TNFα inhibitor) and phototherapy may reduce biomarkers of cardiometabolic risk, including IL-6 and C-reactive protein (CRP).[33] Nevertheless, biomarker-based studies frequently do not necessarily translate into clinical benefit and therefore need to be interpreted with caution.[34]

Relevant evidence from randomized controlled trials (RCTs) assessing the impact of immune-targeted treatments on CV events as primary outcomes is sparse and mixed (**Table 1**). Methotrexate, despite evidence of a cardioprotective effect in observational studies of psoriasis and rheumatoid arthritis patients, had no effect on major CV events in a large randomized placebo-controlled trial of patients with previous myocardial infarction or multivessel coronary disease and either type 2 diabetes or metabolic syndrome (CIRT [Cardiovascular Inflammation Reduction Trial]).[35] Canakinumab, a biologic therapy not used for psoriasis but which lowers the same inflammatory biomarkers (IL-6 and CRP) as several psoriasis treatments,[36] has been shown in a large RCT of patients with previous myocardial infarction and elevated CRP to reduce the risk of major CV events by 17%, with no significant effect on all-cause mortality (the CANTOS [Canakinumab Anti-inflammatory Thrombosis Outcomes Study] trial).[37] Low-dose colchicine, which inhibits neutrophil extracellular trap formation[38,39] (one of the immune pathways thought to link psoriasis to CV disease[40]), was recently approved by the US Food and Drug Administration for reducing the risk of myocardial infarction, stroke, coronary revascularization, and CV death in adults with established atherosclerotic disease or with multiple risk factors for CV disease based on results from several RCTs (the COLCOT [Colchicine Cardiovascular Outcomes Trial] and LoDoCo2 [Trial of Low-Dose Colchicine] trials).[41,42] The studies on canakinumab and colchicine provide key proofs of principle that controlling inflammation lowers CV events, but the ability of currently available psoriasis therapies to prevent CV disease remains uncertain.[43]

IMPORTANCE OF TREATING MODIFIABLE CARDIOVASCULAR RISK FACTORS

Studies have conclusively demonstrated that treating modifiable CV risk factors improves CV health and significantly reduces CV morbidity and mortality. Smoking cessation reduces CV mortality by more than 30%, and mortality benefits increase proportionally with the duration of smoking cessation.[44] Successful blood pressure control reduces the risk for CV events and all-cause mortality by 20% to 40%.[45] Low-density lipoprotein (LDL)–lowering pharmacotherapies, especially statins, lower risk of myocardial infarction and all-cause mortality by 47% and 28%, respectively, and likely provide similar benefits in patients with psoriasis.[46,47] Furthermore, statins have pleiotropic anti-inflammatory effects and provocatively have been shown to improve psoriasis in small placebo-controlled trials and to be associated with a reduced risk of developing psoriatic arthritis among psoriasis patients in observational studies.[48,49] Given the abundance of CV risk factors in patients with psoriasis, the

Table 1
Randomized placebo-controlled trials evaluating the impact of immune-targeted therapies on cardiovascular events

	CANTOS (Canakinumab Antiinflammatory Thrombosis Outcomes Study)[37]	CIRT (Cardiovascular Inflammation Reduction Trial)[35]	COLCOT (Colchicine Cardiovascular Outcomes Trial)[42]	LoDoCo2 (Trial of Low-Dose Colchicine)[41]
Intervention	Canakinumab (interleukin-1b inhibitor)	Methotrexate (folate antagonist)	Colchicine (microtubule disruptor)	Colchicine (microtubule disruptor)
Dose(s)	50 mg, 150 mg, or 300 mg every 3 mo	18.8 mg weekly mean dose (low-dose)	0.5 mg once daily (low-dose)	0.5 mg once daily (low-dose)
Sample size	10,061	4786	4745	5522
Median follow-up period	3.7 y	2.3 y	1.9 y	2.4 y
Major inclusion criteria	Prior myocardial infarction and high-sensitivity C-reactive protein $\geq$2 mg/L	Prior myocardial infarction or multivessel coronary artery disease, and type 2 diabetes or metabolic syndrome	Prior myocardial infarction within 30 d	Chronic coronary disease
Cardiovascular events, *hazard ratio (95% confidence interval)*	0.85 (0.74, 0.98)	1.01 (0.82, 1.25)	0.77 (0.61, 0.96)	0.69 (0.57, 0.83)
Adverse events of interest	Increased risk of death due to infection or sepsis (0.13 additional events per 100 person-years, $P = .02$)	Increased risk of non–basal cell skin cancer (rate ratio 3.08, $P = .002$) and infection (rate ratio 1.15, $P = .02$)	Increased risk of pneumonia (absolute risk difference 0.5%, $P = .03$)	No significant differences

substantial benefits of treating modifiable CV risk factors, and the potential benefits of treatments such as statins for psoriatic disease, identifying and managing traditional CV risk factors in people with psoriasis is foundational to improving their health and lifespan.[50]

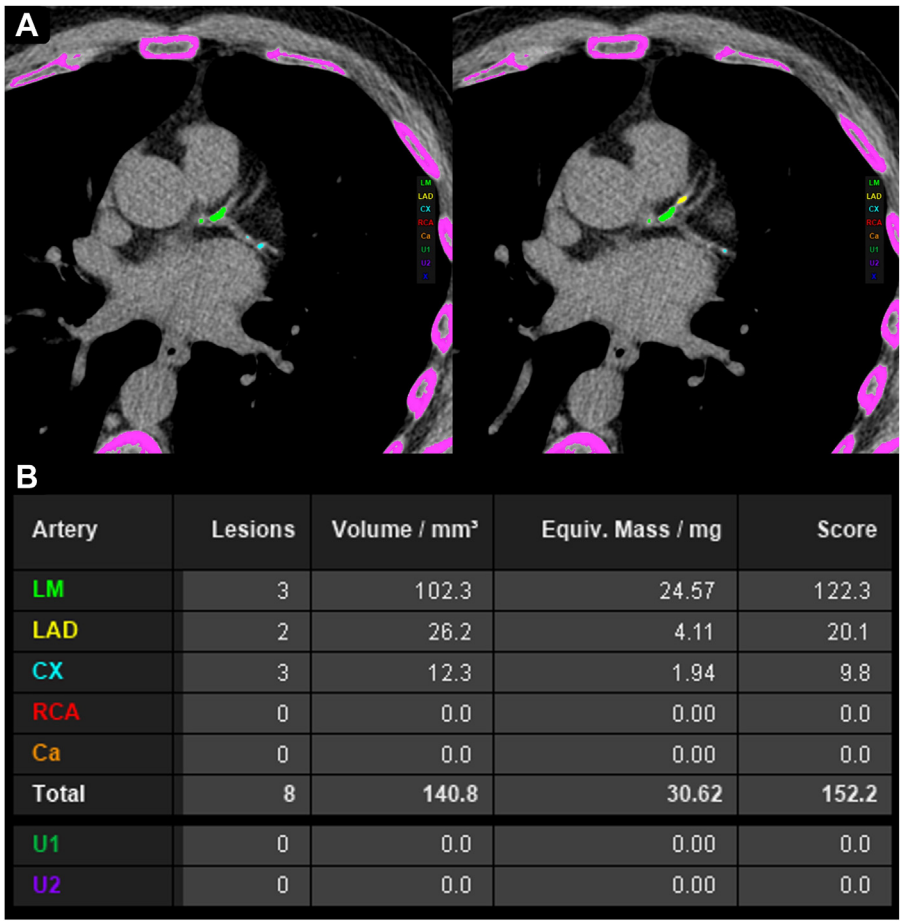
CURRENT US GUIDELINES ON CARDIOVASCULAR RISK IN PEOPLE WITH PSORIASIS

Prevailing United States guidelines recommend more stringent efforts to identify and manage traditional CV risk factors in people with psoriasis due to the increased prevalence of modifiable CV risk factors and their increased risk of major CV events and mortality.[4,5] Joint 2019 guidelines from the American Academy of Dermatology and National Psoriasis Foundation recommend earlier and more frequent screening for hypertension, diabetes, and dyslipidemia, as well as application of a 1.5x multiplier for any CV risk calculations for psoriasis patients with moderate-to-severe disease (ie, >10% body surface area involvement or candidates for systemic or phototherapy).[4] The 2018 multi-society cholesterol management guidelines define psoriasis as a CV risk enhancer, recommending more intensive management of CV risk factors and disease.[5] Specifically, patients with a calculated "borderline" risk (5% to <7.5%) of developing atherosclerotic CV disease in 10 years are recommended a moderate-intensity statin and/or further risk assessment if they have additional CV risk enhancers, which include psoriasis and common comorbidities of psoriasis such metabolic syndrome, dyslipidemia, renal insufficiency, and elevated CRP.[5,51,52]

Appropriate screening can uncover significant CV risk factors in patients with psoriasis, as in the following example: The authors cared for a 59-year-old male patient with several decades of severe plaque psoriasis (note that longer duration of psoriasis is further associated with greater CV risk)[53] that was managed with 7 different systemic therapies and currently under good control with brodalumab. One of the authors (JMG) screened him for risk factors and found that his blood pressure was 145/93, total cholesterol was 191 mg/dL, LDL-cholesterol was 136 mg/dL, and that he was a former smoker. Based upon multiple risk factors for atherosclerotic CV disease (ASCVD), he was referred to preventative cardiology (DES) for comanagement. His 10-year risk was calculated to be 10.7% and his coronary artery calcium (CAC) score was 152.2 (77th percentile for age), prompting prescription of preventive statin and low-dose aspirin therapy (**Fig. 1**). In the authors' experience routinely evaluating psoriasis patients for CV risk factors, such examples are common, and appropriate screening leads to frequent detection of asymptomatic atherosclerotic CV disease. **Table 2** describes established guidelines for screening traditional CV risk factors, including lipids, blood pressure, blood glucose, weight, smoking, and overall CV risk. **Fig. 2** displays an example of a risk calculator derived from pooled cohort equations (PCEs) that estimate 10-year risk of developing ASCVD.[54] These calculators are available in many electronic medical records and on desktop and mobile phone applications.

GAPS IN PRACTICE AND THE ROLE OF DERMATOLOGISTS

Despite the breadth of data linking psoriasis to CV disease and mortality and guidelines advocating for more aggressive screening and management of CV risk factors in this at-risk population, psoriasis patients are more likely to have undiagnosed and undertreated CV risk factors compared to patients without psoriasis, representing a major evidence-to-practice gap.[55–57] In the United States, dermatologists provide blood pressure and cholesterol or glucose screening to only 7% and less than 3% of patients with psoriasis, respectively.[55] A study of psoriasis patients recruited from primary care in the United Kingdom identified at least 1 previously undiagnosed CV risk factor in 48% of individuals, and, among those with known dyslipidemia or hypertension, 46% were inadequately controlled.[56] Similarly, a multinational clinical trial of 2899 participants with moderate-to-severe psoriasis found that only 24% of patients for whom statins would be recommended by guidelines were taking them.[57] In a study of 2254 patients with psoriatic disease from Canada, the United States, and Israel, 88% had at least 1 modifiable CV risk factor, and 59% of patients with hypertension and 66% of patients with dyslipidemia were undertreated.[58] Patients with moderate-to-severe psoriasis not only have greater CV risks than patients with mild disease, but they are also less likely to have appropriately managed CV risk factors, with 1 large population-based study in the United Kingdom finding that patients with moderate (ie, 3% to 10% body surface area affected) and severe (ie, >10% body surface area affected) psoriasis had a 1.20 and 1.48 greater odds, respectively, of having uncontrolled hypertension compared to matched hypertensive controls.[59] Collectively, these data demonstrate that failure



Artery	Lesions	Volume / mm³	Equiv. Mass / mg	Score
LM	3	102.3	24.57	122.3
LAD	2	26.2	4.11	20.1
CX	3	12.3	1.94	9.8
RCA	0	0.0	0.00	0.0
Ca	0	0.0	0.00	0.0
Total	8	140.8	30.62	152.2
U1	0	0.0	0.00	0.0
U2	0	0.0	0.00	0.0

Fig. 1. Example of coronary artery calcium imaging study used in cardiovascular risk assessment. Coronary artery calcium (CAC) imaging study for a 59-year-old male psoriasis patient with no clinically evident atherosclerotic cardiovascular disease and several cardiovascular risk factors, including age, smoking history, hypertension, and severe longstanding psoriasis. (*A*) Axial computed tomography images of the chest, heart, and coronary vessels are displayed, with plaques in 3 coronary vessels visualized in color. Plaques present in the left main (LM) artery are green, plaques in the left anterior descending (LAD) artery are yellow, and plaques in the left circumflex (CX) artery are cyan. (*B*) A total score for coronary calcium is calculated based on plaque volumes of individual coronary vessels. In this image, the total CAC score is 152.2, indicating that statin initiation is highly favored.

to adequately screen patients with psoriatic disease for CV risk factors and manage these risk factors effectively puts patients at risk for preventable CV disease and mortality.

SCREENING FOR CARDIOVASCULAR RISK FACTORS IN ROUTINE DERMATOLOGIC CARE OF PSORIASIS

According to dermatology guidelines, patients with psoriasis should be educated about their increased risk of CV disease and screened for traditional CV risk factors.[4,5] Because patients with psoriasis frequently need laboratory evaluation for systemic treatments and/or symptoms of inflammatory arthritis, dermatologists should aim to incorporate screening tests for dyslipidemia and diabetes into these evaluations and to screen patients for hypertension, obesity, and smoking in the office. In the United States, many patients with psoriasis do not have, or do not regularly visit, a primary care provider, making their dermatologist the only clinician evaluating the patient.[60] Moreover, the authors' recent studies demonstrate that psoriasis patients welcome education and screening related to CV risk factors from their dermatologist in the context of receiving care for psoriatic disease, and patients are just as likely to accept this evaluation from their dermatologist as from their primary care provider.[61,62] The authors interviewed psoriasis patients about strategies to improve CV disease prevention, and

Table 2
Cardiovascular risk factor screening guidelines by national organizations

Organization	Guidelines
Blood pressure (hypertension)	
American Academy of Dermatology & National Psoriasis Foundation	• Screen yearly in adults ages 40 and older and adults at increased risk (blood pressure 130–139/85–89 mm Hg, overweight or obese,[a] black). • Screen every 3–5 y in adults ages 18–39 with blood pressure <130/85 mm Hg and no risk factors. • *Consider screening more frequently for patients with moderat- to-severe psoriasis.*[b]
American College of Cardiology & American Heart Association	• Blood pressure pharmacotherapy is recommended for patients with sustained systolic blood pressure of 130 mm Hg or higher or diastolic blood pressure of 80 mm Hg or higher.
US Preventive Services Task Force	• Screen yearly in adults ages 40 and older and adults with risk factors for hypertension (black, elevated blood pressure, or overweight or obese). • Screen every 3–5 y in adults ages 18–39 without risk factors for hypertension. • Sustained blood pressure elevations>130/80 mm Hg or 140/90 mm Hg indicate hypertension.
Cholesterol (dyslipidemia)	
American Academy of Dermatology & National Psoriasis Foundation	• Screen every 4–6 y in adults ages 20–79. • *Consider screening earlier and more frequently for patients with moderate-to-severe psoriasis.*
American College of Cardiology & American Heart Association & multiple societies	• Screen every 4–6 y in adults starting age 20. • Consider statin therapy based on 10-y calculated risk of ASCVD in patients 40–75, LDL level, history of diabetes, and the presence of risk enhancers. • *Psoriasis is defined as a cardiovascular risk enhancer meriting statin initiation or further risk assessment for patients 40–75 with a 10-y risk of ASCVD of at least 5%.*
Glucose (diabetes)	
American Academy of Dermatology & National Psoriasis Foundation	• Screen every 3 y in adults ages 40–70 who are overweight or obese. • Begin screening at age 45 for adults without risk factors. • *Consider screening earlier and more frequently for patients with moderate-to-severe psoriasis.*
American Diabetes Association	• Screen yearly in patients with prediabetes.[c] • Screen every 3 y in all adults who are overweight and also have additional risk factors. • Screen every 3 y starting at age 35 for adults without risk factors.
US Preventive Services Task Force	• Screen adults ages 35–70 who are overweight or obese.
Body mass index (obesity)	
US Preventive Services Task Force	• All adults should receive screening for obesity. • No recommendations are made for screening frequency due to lack of evidence.
Smoking	
US Preventive Services Task Force	• All adults should be screening for smoking, and smoking cessation should be encouraged for all patients who smoke.

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Table 2
(continued)

Organization	Guidelines
Estimate cardiovascular risk	
American Academy of Dermatology & National Psoriasis Foundation	• In adults ages 40–79, estimate 10-y risk of developing ASCVD every 4–6 y. • *For patients with moderate-to- severe psoriasis, multiply risk calculations by 1.5 times and consider earlier and more frequent screening.*
American College of Cardiology & American Heart Association & multiple societies	• In adults ages 40–75, estimate 10-y risk of developing ASCVD every 4–6 y. • *Psoriasis is defined as a cardiovascular risk enhancer meriting statin initiation or further risk assessment for patients with a 10-y risk of ASCVD of at least 5%.*

Abbreviations: ASCVD, atherosclerotic cardiovascular disease; LDL, low-density lipoprotein.
[a] Body mass index ≥25 kg/m^2 is considered overweight, and body mass index ≥30 kg/m^2 is considered obese.
[b] Moderate-to-severe psoriasis is defined here as having greater than 10% body surface area involvement or being a candidate for systemic or phototherapy.
[c] Prediabetes is diagnosed with a hemoglobin A1C 5.7% and less than 6.5%, fasting plasma glucose ≥100 mg/dL and less than 126 mg/dL, or oral glucose tolerance test of ≥140 mg/dL and less than 200 mg/dL. Diabetes is diagnosed by at least 2 measurements of hemoglobin A1C ≥ 6.5%, fasting plasma glucose ≥126 mg/dL, oral glucose tolerance test ≥200 mg/dL, or random glucose ≥200 mg/dL.

patients responded positively to the involvement of their specialist, saying, "If [my dermatologist] made the suggestion, I would definitely take [their] consideration and concern," and "I would not have minded [my dermatologist] sending me for the blood work… if they had done the appropriate test, I would've been fine with it."[62] These qualitative data were reinforced in a pilot study testing a

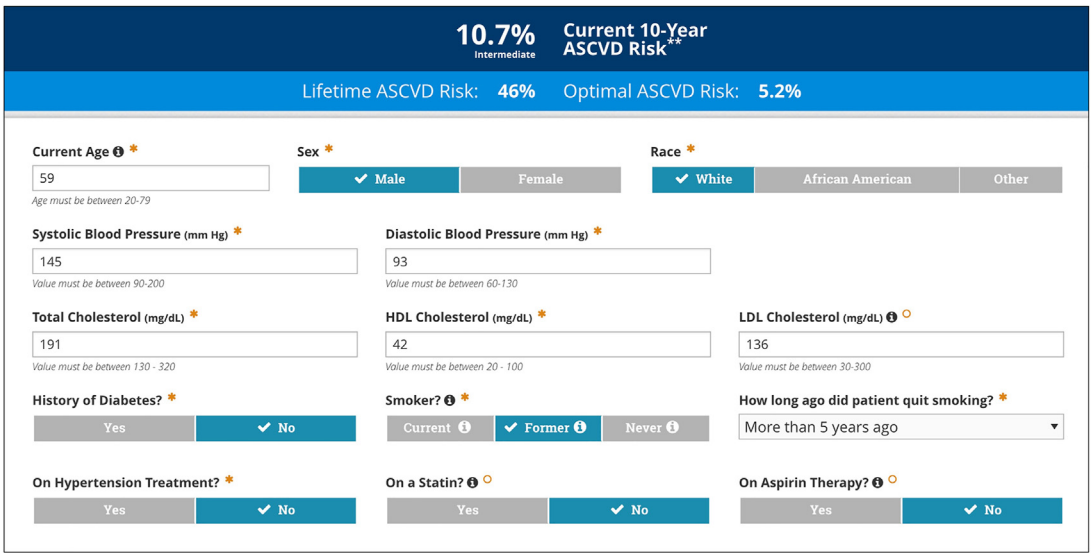

Fig. 2. Example of online calculator for 10-year risk of developing atherosclerotic cardiovascular disease. The American Heart Association and the American College of Cardiology provide convenient online calculators for estimating the risk of developing atherosclerotic cardiovascular disease (ASCVD) for patients without ASCVD. In this example, a 59-year-old, white, male patient with several risk factors and without clinically evident ASCVD has an estimated 10.7% risk of developing ASCVD in 10 years. **10-year risk for ASCVD is categorized as:Low-risk (<5%)Borderline risk (5% to 7.4%)Intermediate risk (7.5% to 19.9%)High risk (≥20%)* Indicates a field required to calculate current 10-year ASCVD risk for patients age 40-79 or Lifetime risk for patients age 20-59. Risk will automatically calculate once these fields are populated.o Indicates additional questions required to determine individualized patient advice for patients age 40-79. Answering these questions in addition to the indicated risk fields will activate the Therapy Impact and Advice tabs.

care coordination model designed to improve screening and management of CV risk factors for psoriasis patients. The authors found that 94% of patients completed necessary laboratory tests ordered by dermatologists during routine psoriasis care, suggesting that patients with psoriasis are highly motivated to engage in CV screening.[63]

These findings suggest that dermatologists have an opportunity to improve identification and management of traditional CV risk factors by leveraging their existing relationships with their patients with psoriatic disease. Just as dermatologists are encouraged to work closely with a rheumatologist in managing psoriatic arthritis, the authors encourage dermatologists to work closely with a primary care provider or preventative cardiologist for the seamless management of CV risk factors in patients with psoriatic disease. A step-wise guide for performing baseline, age-appropriate, guidelines-based CV risk screening in psoriasis patients is provided in **Fig. 3**. This baseline screening is ideally performed as part of the patient's initial visit, though some clinicians may find the screening more acceptable to patients during a follow-up visit after the patient's skin disease has improved.

Approach to Psoriasis Patients Under 40 Years of Age

For adult patients under the age of 40, clinicians should focus on educating the patient about their risk of developing CV disease due to psoriasis and its common comorbidities, as well as the importance of healthy behaviors related to diet, exercise, and lifestyle (**Table 3**).[5] Clinicians should screen for CV risk factors by measuring patients'

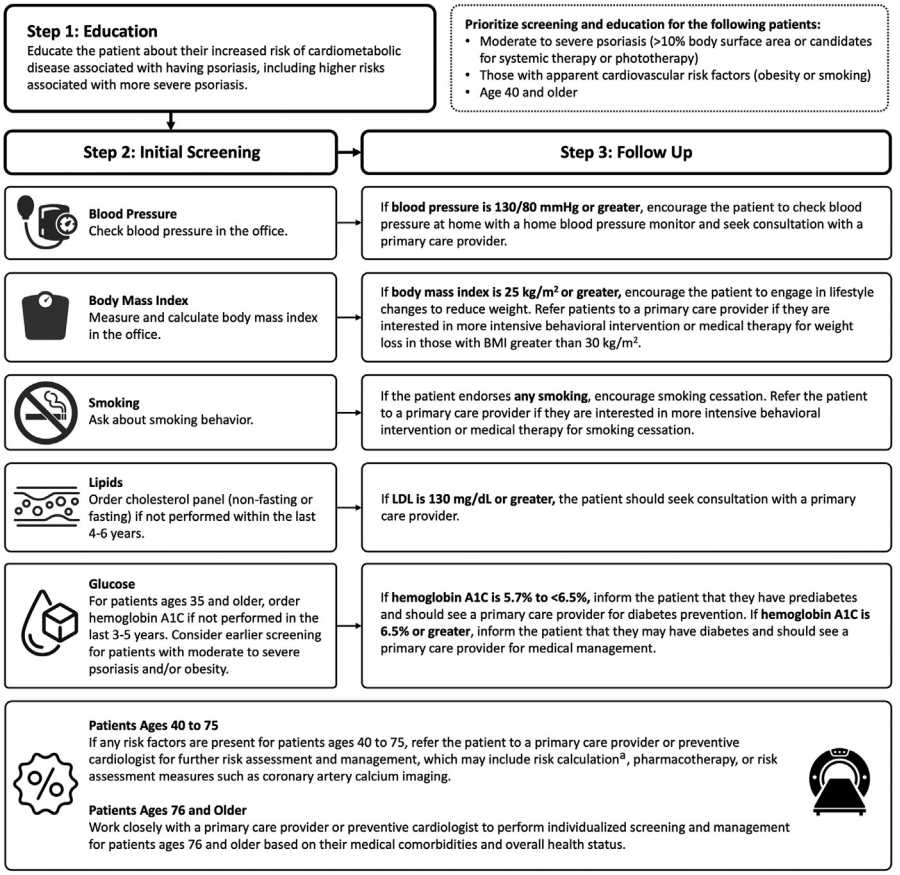

Fig. 3. Approach to implementing guidelines-based cardiovascular risk screening for psoriasis patients in routine dermatologic practice. [a]The American Heart Association and the American College of Cardiology provide convenient online calculators for estimating risk of developing atherosclerotic cardiovascular disease (ASCVD) for primary prevention, which are found at https://tools.acc.org/ascvd-risk-estimator-plus/#!/calculate/estimate/ and are based on pooled cohort equations from Yadlowsky S, Hayward RA, Sussman JB, McClelland RL, Min YI, Basu S. Clinical Implications of Revised Pooled Cohort Equations for Estimating Atherosclerotic Cardiovascular Disease Risk. *Ann Intern Med*. Jul 3 2018;169(1):20-29. https://doi.org/10.7326/M17-3011.

Table 3
Diet, exercise, and lifestyle recommendations to improve cardiovascular health from the American Heart Association[64,65]

Diet	• Adjust energy intake and expenditure to achieve and maintain a healthy body weight. • Prioritize eating a variety of vegetables, fruits, legumes, nuts, whole grains, and minimally processed foods. • Choose healthy protein options, including plant proteins, fish and seafood, low-fat dairy products, and lean and unprocessed meats. • Minimize ultra-processed foods, sugary foods, sugary beverages, red meat, and salt.
Exercise	• For substantial health benefits, adults should engage in either moderate exercise for 150–300 min per week, vigorous exercise for at least 75–150 min per week, or an equivalent combination, preferably spread throughout the week. • Adults should engage in muscle-strengthening activities of at least moderate intensity ≥2 d per week for additional health benefits. • Any amount of physical activity is better than none.
Lifestyle	• Avoid smoking, or cease smoking if currently smoking. • Avoid alcohol, or limit alcohol intake if currently drinking alcohol.

blood pressure and body mass index, inquire about smoking, and evaluate for dyslipidemia and diabetes with appropriate laboratory tests (see **Fig. 3**). At minimum, baseline screening of traditional CV risk factors should be performed on all patients with psoriasis. Continued screening by dermatologists is encouraged, and screening frequency can be adjusted based on previous screening results or other risk factors (see **Table 2**). If any of these measures or behaviors are abnormal, clinicians should either provide further guidance about managing these risk factors or make a prompt referral to a primary care provider.

Approach to Psoriasis Patients Ages 40 to 75

Patients ages 40 to 75 should receive a more thorough assessment of CV risk (see **Fig. 3**). Similar to patients under 40 years of age, clinicians should educate the patient about their risk of developing CV disease due to psoriasis and its common comorbidities, as well as the importance of healthy behaviors related to diet, exercise, and lifestyle (see **Table 3**), and then initiate screening for hypertension, dyslipidemia, and diabetes. The patient should then see their primary care provider who can evaluate and manage the risk. The primary care provider will likely calculate the patient's 10-year risk of developing ASCVD using an online risk calculator derived from validated PCEs that use patients' age, sex, race, blood pressure, cholesterol levels, history of diabetes and smoking, and current medications to estimate risk.[54] The American Heart Association and the American College of Cardiology created one such calculator (https://tools.acc.org/ascvd-risk-estimator-plus/#!/calculate/estimate/) that is conveniently accessible online. Treatment with pharmacotherapy (usually statins) as an adjunct to heart-healthy lifestyle changes is based upon these results. For example, in people with psoriasis, statins are recommended for patients with a 10-year risk of ASCVD of 5% or higher. Further risk stratification can be performed in asymptomatic moderate-risk (ie, 5% to <20% 10-year risk) adults by completion of a CAC score by computed tomography (see **Fig. 1**).

Approach to Psoriasis Patients Ages 76 and Older

For patients ages 76 and older, less evidence is available on the net benefits and risks of standard recommendations. However, CV disease risk is highest in this age group, and preventive strategies should be considered and managed by the primary team with or without intervention by preventive cardiology.

SUMMARY

Screening and managing CV risk factors are essential to caring for people with psoriasis, not only because of their increased CV risk due to psoriasis and comorbidities but also because of the widespread underdiagnosis and undermanagement of risk in this patient population. Dermatologists have an opportunity to improve the gaps in CV screening for patients by providing basic screening for common risk factors such as hypertension, dyslipidemia, diabetes, obesity, and smoking and by helping psoriasis patients connect with appropriate primary care providers or preventive cardiologists to manage these risks. Screening and management that aligns with national guidelines can significantly reduce CV morbidity and mortality and improve the health and lifespan of people with psoriasis.

CLINICS CARE POINTS

- Dermatologists should educate patients about the risk of CV disease associated with psoriasis and perform baseline, age-appropriate CV risk factor screening for all psoriasis patients, including evaluation of blood pressure, body mass index, blood glucose, cholesterol, and smoking.
- Dermatologists should establish relationships with primary care providers and/or preventive cardiologists in their community to facilitate multidisciplinary care aimed at identifying and managing modifiable CV risk factors in psoriasis patients.
- Psoriasis patients ages 40 to 75 should undergo a CV risk assessment and, if their 10-year risk is 5% or greater, should be encouraged to take a statin and/or undergo additional CV risk assessment with noninvasive imaging.

DISCLOSURE

J.M. Gelfand served as a consultant for Abbvie, Artax (DSMB), BMS, Boehringer Ingelheim, Celldex (DSMB), FIDE (which is sponsored by multiple pharmaceutical companies) GSK, Inmagene (DSMB), Twill, Lilly (DMC), Leo, Moonlake (DSMB), Janssen Biologics, Novartis Corp, UCB (DSMB), Neuroderm (DSMB), and Veolia North America receiving honoraria; receives research grants (to the Trustees of the University of Pennsylvania) from Amgen, United States, BMS, United States, and Pfizer Inc., United States; received payment for continuing medical education work related to psoriasis that was supported indirectly by pharmaceutical sponsors; is a co-patent holder of resiquimod for the treatment of cutaneous T-cell lymphoma; is a Deputy Editor for the Journal of Investigative Dermatology receiving honoraria from the Society for Investigative Dermatology; is the Chief Medical Editor for Healio Dermatology (receiving honoraria); and is a member of the Board of Directors for the International Psoriasis Council and the Medical Dermatology Society, receiving no honoraria. D.E. Soffer has served as consultant for Akcea, Amgen, Amryt, Ionis, Novartis, and Partnership for Health Analytics Research; was an investigator for Akcea, Amgen, Amryt, Ionis, Novartis, Regeneron, and Verve Therapeutics; and did data monitoring for Amgen.

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