The Editor's Roundtable: Psoriasis, Inflammation, and Coronary Artery Disease

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Disclosure

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Objectives

Upon completion of the activity, the physician should be able to:

1. Identify cardiac risk factors associated with psoriasis.
2. Describe the relation of inflammation to psoriasis.
3. Understand the possible relation of inflammation to atherosclerosis.
4. Diagnose and treat cardiac risk factors in patients with psoriasis.

Needs Assessment: The need for this activity for cardiologists and other health care specialists in cardiovascular medicine is based on the following premises:

1. Psoriasis is associated with increased risk factors for atherosclerotic cardiovascular disease.
2. Patients with severe forms of psoriasis have an increased incidence of acute cardiovascular events.
3. Cardiovascular risk factors in patients with psoriasis are undertreated.
4. The exact role of inflammation in atherosclerotic cardiovascular disease is unproved but may become an important factor in disease prevention.

Target Audience: This activity is designed for cardiologists and all other health care specialists caring for patients with acute and chronic coronary heart disease.

CME Credit: The A. Webb Roberts Center for Continuing Medical Education of Baylor Health Care System, Dallas, designates this educational activity for a maximum of 1 AMA PRA Category 1 Credit.™ Physicians should only claim credit commensurate with the extent of their participation in the activity.

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CME Instructions: After reading this article, go online at www.AJConline.org to register, complete a post-test with a minimum score of 80%, complete an evaluation, and print a certificate.

Combination of Media: Print and Internet

Computer Requirements: Windows 2000, Pentium 3 or greater, 512 ram, 80 gigabytes storage

Estimated Time to Complete: 1 hour

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Introduction

Although psoriasis primarily affects cutaneous tissue, it is now regarded by many experts as a systemic, immune-mediated disease,[1] often with nondermatologic manifestations. These include arthritis in about 10% of patients with psoriasis,[2] Crohn's disease,[3] lymphoma,[4] diabetes mellitus,[4]

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and depression.[5] Although first described >30 years ago,[6–8] the association between psoriasis and cardiovascular disease has received increasing attention in recent years,[5,9,10] with a risk for acute myocardial infarction >3 times for 30-year-old patients with severe psoriasis than for similarly aged subjects without psoriasis.[1] The reason for the greatly increased incidence of coronary artery disease in young patients with psoriasis appears to be due at least in part to increased atherosclerotic risk factors in these patients, including abnormal lipids, smoking, obesity, diabetes mellitus, and hypertension.[11–14] There is also a possibility that psoriasis itself is an independent risk factor for cardiovascular disease.[1]

Systemic inflammation manifested by elevated C-reactive protein (CRP), which is commonly detected in patients with psoriasis and in patients with atherosclerosis, may be an important link between these 2 disorders.[15,16] Finally, as discussed in this Editor's Roundtable, psoriasis may provide valuable insight into the possible role of inflammation in atherosclerotic disease.

Discussion

Dr. Friedewald: How common is psoriasis?

Dr. Gordon: Two to three percent of the 300 million persons in the USA have psoriasis. That is about 5 to 6 million persons.

Dr. Friedewald: What about in other countries?

Dr. Gordon: Psoriasis is most common in the Scandinavian countries and northern Russia, but every population has psoriasis. Its prevalence is 0.5% to 1% in persons of Asian heritage. In blacks, it is about 1%.

Dr. Roberts: At what age does it first appear?

Dr. Gordon: The initial presentation of psoriasis can occur at any age. There are 2-year-olds with psoriasis and there are people who have psoriasis for the first time at age 85 years. The highest presentation time, however, is between 15 and 35 years, with a second peak at 55 to 70 years. People who get psoriasis at an early age tend to have more severe disease, more often have a positive family history for psoriasis, and have a greater incidence of psoriatic arthritis.

Dr. Friedewald: What causes psoriasis?

Dr. Gordon: In the last 15 years we have come to regard psoriasis as a systemic disease driven primarily by an immune reaction of the skin. It is clearly a genetic disease, with a 1 in 6 chance that the child of a parent with psoriasis will also have psoriasis. The genetics, however, are not completely understood, as it is associated with multiple candidate genes in a multigenic inheritance pattern. We used to think of psoriasis as strictly an adaptive immune, T-cell-mediated disease. Then there was a period in which psoriasis was thought of as primarily inflammatory, with the T cells and the adaptive immunity playing an important but secondary role. Our current understanding is that there is a population of immune cells that might play a very important role in psoriasis that transcends both innate and adaptive immunity. For that reason, we are investigating many new antipsoriasis medications that might attack new, novel targets, like interleukin-23.

Dr. Friedewald: Is psoriasis a systemic disease with skin manifestations or a skin disease with some systemic components?

Dr. Gordon: The answer differs according to whom you ask and where they received their dermatologic training. There is a distinction between the general severity of psoriasis in patients seen in referral centers, who have more severe disease, and patients seen in community medical offices that treat more persons with mild psoriasis, which is regarded primarily as an immune disease of the skin. Dermatologists who treat more serious forms of psoriasis, i.e., those involving large areas of body surface that greatly impact overall health, generally regard psoriasis as a systemic disease.

Dr. Cather: I agree. The younger physicians view psoriasis as an immune-mediated systemic disease with an assortment of associated co-morbidities that might be cytokine mediated.

Dr. Friedewald: How is psoriasis treated?

Dr. Gordon: Psoriasis in the past has been mainly treated topically with creams, ointments, and topical corticosteroids. Although these are still the mainstay of treatment of most cases, systemic agents—cyclosporine, methotrexate, oral retinoids, and biologic immunotherapy—are now used frequently. Methotrexate and cyclosporine are used only intermittently due to cumulative side effects, especially hepatic and renal toxicity. As we move to therapies with fewer dose-dependent side effects, there has been a greater acceptance of *chronic* treatment of the disease with the goal of decreasing or even eliminating recurrences.

Dr. Friedewald: Does the severity of psoriasis correlate with nondermatologic manifestations such as arthritis?

Dr. Gordon: There are theoretical relations between the severity of psoriasis and the presence and severity of psoriatic arthritis, but the data are unclear. Patients with very mild psoriasis can have significant joint disease, and persons with very bad psoriatic joint disease can have minimal or no psoriasis. The risk of lymphoma and cardiovascular disease, however, *do* correlate with the amount of body surface area involved by psoriasis.

Dr. Cather: Joint disease does not always flare when the skin disease does. It is easier to control psoriatic arthritis than skin manifestations with current treatment.

Dr. Roberts: Do you treat psoriatic arthritis with the same medications used for the skin disease?

Dr. Cather: Some of the systemic medications, the TNF (tumor necrosis factor) antagonists, cover both, but in lower doses for psoriatic arthritis.

Dr. Kavanaugh: Tonsil biopsies in psoriasis patients have shown increased expression of E-selectin and other evidence that support the concept of psoriasis as a systemic disease. Most patients I see with joint disease do not have a lot of skin psoriasis, but they cover the whole spectrum from mild skin disease and severe joint disease to severe skin disease with mild joint involvement. Why the expressions of psoriasis are so variable is unclear.

Dr. Cather: The duration of skin disease correlates with the presence of psoriatic arthritis.

Dr. Kavanaugh: In 80% to 90% of people with psoriatic arthritis, the skin disease precedes it, often by 10 years.

Dr. Roberts: How do you quantitate dermal psoriasis?