Proactive infectious disease approach to dermatologic patients who are taking tumor necrosis factor–alfa antagonists

Part I. Risks associated with tumor necrosis factor–alfa antagonists

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3. Achievement of a 70% or higher on the online Case-based Post Test
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Learning Objectives
After completing this learning activity, participants should be able to describe the many infectious risks potentially associated with the use of biologic therapy for the treatment of psoriasis and obtain appropriate historical data specific to the risks of various infectious entities.

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Tumor necrosis factor—alfa levels are linked to disease severity in patients with inflammatory conditions, such as psoriasis. Inhibitors of this cytokine are commonly used with significant success in the treatment of such inflammatory disorders. Their use, however, can be plagued by infectious complications. An awareness of potential infections associated with these therapies is critical in order to maximize preventive efforts both before and during therapy. This review provides a guide for dermatologists caring for patients in need of this type of biologic therapy to preemptively address the infectious risks. Part I of this continuing medical education article reviews background information on the various infectious risks associated with tumor necrosis factor inhibitor therapy and appropriate historical data to obtain in the context of pretherapy evaluations. (J Am Acad Dermatol 2014;71:1.e1-8.)

Key words: biologic therapy; endemic mycoses; opportunistic infection; psoriasis; tuberculosis; tumor necrosis factor.

INTRODUCTION

Tumor necrosis factor—alfa (TNFα) antagonists have revolutionized our approach to patients with life-altering inflammatory conditions, such as inflammatory bowel disease, rheumatoid arthritis, and psoriasis. Levels of TNFα are increased in both the skin and serum of patients with psoriasis, correlate with disease severity, and return to normal after successful treatment.[1]

These therapies can be highly effective, but they can also be associated with significant infectious complications. Although relatively common illnesses predominate, such as upper respiratory tract infections, there are multiple infectious associations with pathogens, including bacteria, mycobacteria, fungi, viruses, and parasites. The tuberculosis risk for patients receiving tumor necrosis factor inhibitors (TNFIs) has prompted the addition of black box warnings to the labels of these agents.

The existing literature to guide dermatologists in their evaluation of patients who are beginning TNFI therapy is not comprehensive. Much of this relates to the fact that the quality of evidence quantifying infectious risk is limited, especially for infectious agents that are unusual causes of illness in normal hosts. Many pathogenic associations with these medications are reported in postmarketing case reports and in other clinical disease states, such as rheumatoid arthritis and inflammatory bowel disease. It is important that the clinician be cognizant of the potential for infectious complications of TNFIs before therapy begins so that appropriate preventive measures may be undertaken to prevent future morbidity and mortality. We provide a framework for the dermatologist to address the many potential infection-related concerns before the initiation of biologic therapy.

POTENTIAL PATHOGENS IN TUMOR NECROSIS FACTOR INHIBITOR PATIENTS: "WHAT I NEED TO KNOW"

Key points

- **Dermatologists who are considering treating patients with severe psoriasis with tumor necrosis factor inhibitor therapy may not be familiar with the complex and diverse potential infectious complications associated with such therapy**
- **Knowledge of the specific risk factors associated with such entities results in more comprehensive pretherapeutic evaluation and may result in reduced morbidity associated with these therapies by informing preventive strategies**
- **A comprehensive baseline history directed at specific epidemiologic and exposure risks is critical for minimizing infectious complications associated with tumor necrosis factor inhibitor therapy**

TNFα plays a critical role in the clearance of intracellular bacterial pathogens, such as *Streptococcus pneumonia* and *Listeria monocytogenes*.[3] Patients receiving TNFI therapy therefore have a significantly increased risk of developing a serious infection with such pathogens. Infections with typical organisms have been described, such as streptococcal and staphylococcal species, including invasive, severe manifestations, such as necrotizing fasciitis.[3,4]

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