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The association of *Staphylococcus aureus* and mycosis fungoides/Sezary syndrome

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Mycosis fungoides (MF) and Sezary Syndrome (SS) are the two most common types of cutaneous T-cell lymphoma. They are both neoplastic diseases with the phenotype of a T-helper cell, expressing CD4+ and CD45RO+. The classic presentation of MF is patches and plaques on the skin that can evolve into tumors with visceral involvement being rare. Sezary syndrome generally presents with erythroderma, significant blood involvement and lymphadenopathy. While MF is an indolent disease in its early stages, histologic transformation to a large cell subtype (t-MF) is associated with an aggressive clinical course resulting in shortened survival as is Sezary Syndrome. However, due to the compromised skin barrier associated with erythroderma in general, infection is the leading cause of death rather than increased tumor burden. The most common infection is *Staphylococcus aureus*. However, not all causes of erythroderma are associated with an increased risk of infection. In particular, MF/SS has a TH2 cytokine profile and thus is associated with a decrease in antimicrobial peptides predisposing patients to *Staphylococcus aureus* colonization as seen in atopic dermatitis. While this bacterium is accepted as a dangerous pathogen in patients with CTCL, its role in causing T-cell expansion is not well accepted. Staphylococcal sepsis and colonization of the skin are associated with disease progression, including worsening erythroderma as well as pruritus, increased white blood cell counts and high lactate dehydrogenase. Staphylococcal enterotoxins may not only take advantage of the compromised immune barrier but stimulate the immune dysregulation leading to worsening disease as well.

Biography

Farah Rukhsana Abdulla has completed her MD from Northeastern Ohio Medical University, Dermatology Residency and Dermatopathology Fellowship at the University of Cincinnati, Cutaneous Lymphoma Fellowship at Stanford University School of Medicine and a Science and Technology Policy Fellowship with the American Association for the Advancement of Science. She is the Director of the Cutaneous Lymphoma Clinic at the University of Chicago.

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