HHS Public Access

Author manuscript

Am J Gastroenterol. Author manuscript; available in PMC 2016 March 09.

Published in final edited form as:

Am J Gastroenterol. 2012 August ; 107(8): 1268–1269. doi:10.1038/ajg.2012.118.

Mycobacterium Marinum: An Increasingly Common Opportunistic Infection in Patients on Infliximab

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To the Editor

The introduction of infliximab over a decade ago revolutionized the treatment of Crohn's disease, but as experience with the drug has grown, physicians have observed an increased risk of serious and opportunistic infections associated with its use. The following case describes the course of a Crohn's patient on infliximab who developed a cutaneous mycobacterium marinum infection.

A 50 year old male with ileocolonic fistulizing Crohn's disease diagnosed in his early 20s whose disease course has been complicated by multiple abdominal surgeries and poor adherence with oral immunosuppressives, presented to his primary care physician for evaluation of right hand pain, swelling, and purulent discharge shortly after receiving his third infliximab infusion. He did not report any fevers or chills, but was noted to have a warm, indurated, erythematous lesion on his right palm with evidence of erythematous streaking to his elbow concerning for lymphangitic spread. He is an avid gardener, owns a home saltwater aquarium, and recalled suffering a puncture wound to his right hand a week prior to noticing the symptoms.

Shortly after receiving his fourth infliximab dose, he was seen in the gastroenterology clinic for routine follow-up and was noted to have multiple indurated lesions on the thenar surface

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Disclosure/Conflict of Interest Statement

1. Adam S. Cheifetz, MD is acting as the submission's guarantor.
2. Jason Ferreira, MD researched the topic and wrote the manuscript. Jared Grochowsky, MD and Douglas Krakower, MD were involved in editing the manuscript. Peter Zuromskis, MD, Rachel Baden, MD, and Adam S. Cheifetz, MD all helped to edit the manuscript as they were all involved in this patient's care.
3. There was no financial or outside editorial assistance to support the article or prepare the article.
4. There are no significant conflicts of interest to report.

of his right palm with two subcutaneous nodules also seen on his right wrist and forearm despite having completed a ten day course of cephalexin. Further infliximab therapy was held and he was referred to dermatology where a culture and biopsy was performed to differentiate between mycobacterium marinum infection and sporotrichosis. He was started empirically on minocycline and his physical exam remained unchanged upon follow-up in the infectious disease clinic one week later, at which point his antibiotic regimen was changed to ethambutol and clarithromycin with results of his culture still pending.

Six weeks from his original dermatology visit, the culture returned positive for mycobacterium marinum and his antibiotic regimen was continued. It took three months before the infection began to recede and he self-discontinued the antibiotics after a total of seven months of treatment despite having persistent skin lesions.

This case adds to the growing body of literature opportunistic infection with anti-TNF therapy, including atypical mycobacterial infections. Since TNF-α plays an integral part in the pathway leading to granuloma formation and maintenance[1], blockade of this factor would logically lead to an increased risk of mycobacterial infections. In fact, post-marketing FDA surveillance through January of 2007 has noted 239 atypical mycobacterial infections in patients taking anti-TNF-α biologic therapy[2] and twelve different species of mycobacterium have been implicated[3].

Most mycobacterium marinum infections stem from aquarium exposure, fish or shellfish associated injuries, and injuries associated with salt or brackish water[4]. A recent review of all mycobacterium marinum infections in patients receiving anti-TNF therapy from January 2000–October 2009 performed by Ramos et al[3] revealed two such infections in patients taking etanercept and four infections in patients on infliximab. A previous case of mycobacterium marinum infection described by Chopra et al[5] involved tenosynovitis of the wrist in a patient on etanercept and another case reported by Danko et al[6] revealed disseminated mycobacterium marinum in the form of abscesses and osteomyelitis.

Atypical mycobacterial infections in immunosuppressed patients on anti-TNF therapy may show delayed response to therapy and portend serious morbidity. In addition to routine screening with hepatitis serologies, PPD, and close follow-up with the prescribing physician, a complete social history should be obtained looking for any red flags that would predispose a patient to infectious complications.

References

1. Ehlers S. Tumor necrosis factor and its blockade in granulomatous infections: differential modes of action of infliximab and etanercept? Clinical Infectious Diseases: an official publication of the Infectious Diseases Society of America. 2005; 41:S199–S203. [PubMed: 15983900]
2. Winthrop KL, Chang E, Yamashita S, Iademarco MF, LoBue PA. Nontuberculous mycobacteria infections and anti-tumor necrosis facto- alpha therapy. Emerging Infectious Diseases. 2009; 15:1556–1561. [PubMed: 19861045]
3. Ramos J, Garcia-Sepulcre M, Rodriguez J, Padilla S, Gutierrez F. Mycobacterium marinum infection complicated by anti-tumour necrosis factor therapy. Journal of Medical Microbiology. 2010; 59:617–621. [PubMed: 20133411]

4. Jernigan J, Farr B. Incubation Period and Sources of Exposure for Cutaneous Mycobacterium marinum Infection: Case Report and Review of the Literature. Clinical Infectious Diseases. 2000; 31:439–443. [PubMed: 10987702]

5. Chopra N, Kirschenbaum AE, Widman D. Mycobacterium marinum tenosynovitis in a patient on etanercept therapy for rheumatoid arthritis. Journal of Clinical Rheumatology: Practical Reports on Rheumatic & Musculoskeletal Diseases. 2002; 8:265–268. [PubMed: 17041383]

6. Danko J, Gilliland W, Miller RS, Decker C. Disseminated Mycobacterium marinum infection in a patient with rheumatoid arthritis receiving infliximab therapy. Scandinavian Journal of Infectious Diseases. 2009; 41:252–255. [PubMed: 19266397]