Recurrent Salmonellosis Complicating Ofatumumab Therapy for Multiple Sclerosis

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Introduction: Multiple Sclerosis (MS) is an autoimmune disease characterized by destruction of neural myelin sheaths. Treatment involves anti-CD20 monoclonal antibodies, such as Ofatumumab. Anti-CD20 therapeutics function by reducing autoreactive B-cell populations. Although anti-CD20 therapeutics are associated with infection risk, the occurrence of recurrent Salmonella infection is novel.

Case Presentation: A 41-year-old male presents with watery diarrhea occurring over 10-days. Past medical history includes depression, MS, and Salmonella infection. Initial Salmonella infection was reported 12-weeks prior, while the patient was taking Ofatumumab for MS. Salmonella infection was resolved following 2-weeks of IV-ceftriaxone. Ofatumumab was discontinued 7-weeks prior to hospital admission due to leukopenia. Physical exam was unremarkable, with mild abdominal tenderness. Laboratory findings revealed decreased antibody titers and positive Salmonella cultures.

Patient underwent EGD and colonoscopy, with biopsies indicating infectious colitis. He was diagnosed with recurrent non-Typhi Salmonella (NTS) infection. For treatment, the patient underwent a cholecystectomy and was discharged on a 14-day course of Azithromycin.

Discussion: Anti-CD20 therapies are mainstays of MS treatment. However, anti-CD20 medications are associated with increased risk for moderate infection (e.g., respiratory tract infection or UTIs). Rare infections associated with anti-CD20 therapeutics include HBV reactivation and progressive multifocal leukoencephalopathy.

The development of recurrent NTS in response to anti-CD20 therapy has not been reported in the literature. Gastroenteritis caused by NTS is self-limiting in immunocompetent patients. Major risk

factors for recurrent NTS include young/old age, contaminated food, and immunosuppression. Although our patient discontinued Ofatumumab 7-weeks prior to admission, he presented with reduced antibody titers (i.e., hypogammaglobulinemia). B-cell reconstitution following termination of Ofatumumab takes 24 to 36-weeks, during which time patients are immunosuppressed. One of the side effects of anti-CD20 therapy is reduced antibody titers, which can increase the patient's risk for NTS. This case highlights anti-CD20 therapy as a novel risk factor for recurrent NTS.

