ACR20 (20% clinical improvement) response (RR 2.3, 95% confidence interval (CI) 1.76 to 3.01). Similarly, patients in the ofatumumab group were 3.1 times more likely to achieve an ACR50 (RR 3.12, 95% CI 1.98 to 4.91). The number needed to treat to achieve an ACR50 response was six. Only one trial found improvement in ACR70 response. A significant reduction in disease activity was found in ofatumumab-treated patients as compared with those in the placebo group. Quality of life also significantly improved with the ofatumumab treatment, as measured by SF-36 summary score (MD 2.48, 95% CI 2.23, 2.73).

Harms
Total withdrawals and withdrawals due to adverse events were not statistically different in ofatumumab and placebo users. However, withdrawal due to lack of efficacy was four times higher in the placebo group as compared with patients treated with ofatumumab (RR 0.24, 95% CI 0.10 to 0.60). The risk of adverse events was 1.5 (95% CI 1.37 to 1.72) in the ofatumumab group as compared with the placebo group. The incidence of serious adverse events, however, was not significantly different in patients treated with ofatumumab and those who received placebo (RR 1.72, 95% CI 0.91 to 3.26). The heterogeneity of the trials was low (I²=0%).

Conclusion
This systematic review and meta-analysis suggests that ofatumumab is an efficacious and safe treatment for patients with RA as compared with placebo. The adverse events profile appears to be acceptable, but long-term trials and postmarketing surveillance are required to assess sustained efficacy and harms. MM

RESIDENT CLINICAL VIGNETTE WINNER
Pneumonia Masquerading as a Rash
BY CYRIL VARGHESE, MD, KOROSH SHARAIN, MD, MATTHEW KOSTER, MD, AND CLEMENT MICHE JR., MD, MAYO CLINIC

Mycoplasma pneumonia is a community-acquired infection that usually presents as an upper respiratory tract infection. A constellation of cough, pharyngitis with atypical dermatological and/or mucosal findings should prompt Mycoplasma antibody testing, even if chest X-ray is negative. In addition, having repeated pneumonias as a child or teenager should prompt testing for immunological disorders.

Case
A 34-year-old man developed a sore throat and productive cough followed by a one-week history of generalized rash, subjective fevers, injected eyes and intense myalgias. He did not report any sick contacts or recent travel outside the United States. The patient reported to an urgent care center with these symptoms two days later and was given a Medrol dose pack. His symptoms persisted, so he presented to the hospital for further evaluation two weeks after developing symptoms. His past medical history was significant for six episodes of pneumonia requiring hospitalization since childhood. Social history was significant for regular marijuana use.

On presentation, the patient was vitally normal and stable with a diffuse morbilliform rash over his face, torso and extremities. He had conjunctival injection and crackles at bilateral lung bases. He did not have any oral ulcers or tonsillar exudates. CBC was significant for leucocytosis (WBC: 23.4X10⁹/L with a left shift). However, infectious workup was negative for Anaplasma, Ehrlichia, ASO, Lyme ELISA, RMSF AB, GAS PCR, HIV, Babesia, Adenovirus, CMV, EBV, and measles virus. Rheumatological workup was negative for ANA, rheumatoid factor, PR3, CCP AB, SSA/SSB, Sm AB, Scl 70, Jo 1 AB, Myeloperoxidase. Chest X-ray did not show focal consolidation.

His constellation of symptoms, including cough with sore throat, injected cornea and atypical rash, prompted Mycoplasma pneumonia IgM and IgG antibody testing, both of which were positive. And his history of recurrent pneumonia in childhood and early adulthood warranted further investigation with Complement levels, including Clq, C2, C3 and C4, all of which were low. The patient was discharged on oral doxycycline and showed remarkable improvement of symptoms.

Discussion
Mycoplasma pneumonia usually presents as a self-limiting upper respiratory tract infection that has evolved into pneumonia, with the typical diffuse reticular interstitial findings on chest X-ray. In rare cases, Mycoplasma pneumonia can present with other manifestations including morbilliform rash or mucositis involving the eyes, genital, anal or oral mucosa. Although “walking pneumonia” is a common presentation among young adults, having had repeated bouts of pneumonia during childhood or young adulthood warrants further investigation. Dysregulation of complement activity can predispose patients to autoimmune or infective process. Our patient had a mixed complement deficiency. In general, deficiencies of the early components of the complement pathway (C1q, C4 and C2) result in autoimmune disorders like SLE. On the other hand, deficiencies in late complement components (C3-9) lead to recurrent infections. MM