



Arthritis News

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PREDNISONE MAY PROVE TO BE A HIGH RISK FACTOR FOR PNEUMONIA IN PATIENTS WITH RHEUMATOID ARTHRITIS

SAN ANTONIO, TEXAS—Rheumatoid arthritis patients taking the commonly-prescribed steroid, prednisone, run a significantly higher risk of contracting pneumonia than do those on biologic medications, according to research presented this week at the American College of Rheumatology Annual Scientific Meeting in San Antonio, Texas.

Biologic drugs, such as adalimumab (HUMIRA™), etanercept (Enbrel®) and infliximab (Remicade®), copy the effects of substances naturally made by the body's immune system. While beneficial, they have been associated with increased rates of infection during clinical trials.

To compare the risks of biologic therapy with prednisone use, researchers conducted a two and a half year-study of responses to semi-annual questionnaires, validated by medical and death records, from 15,966 long-term arthritis patients, average age 60.5 years. While participants who used biologic drugs were 30 percent more likely to get pneumonia, those on prednisone were 170 percent more likely. Therefore prednisone, the corticosteroid most often prescribed to treat inflammation, poses a much larger risk.

Between 35 percent and 45 percent of patients with rheumatoid arthritis currently use prednisone, but over 70 percent of patients will take the steroid at one time during their lifetime. The patient's functional status as well as the severity of their condition does play a role in predicting infection, but these results demonstrate that much larger attention should be paid to steroid therapy.

"It is reassuring to know that the increased rate of pneumonia in people taking biologics is relatively low, some of which may be attributed to arthritis severity," said Frederick Wolfe, MD, National Data Bank for Rheumatic Diseases, Wichita, Kansas, and an investigator in the study. "The risk associated with prednisone use, however, is substantial and suggests that, rather than being considered a relatively benign therapy, prednisone is likely a large part of the risk associated with pneumonia."

The American College of Rheumatology is the professional organization for rheumatologists and health professionals who share a dedication to healing, preventing disability and curing arthritis and related rheumatic and musculoskeletal diseases. For more information on the ACR's annual meeting, see www.rheumatology.org/annual.

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Editor's Notes: Dr. Wolfe will present this research during a scientific session at the ACR Annual Scientific Meeting from 3:00–3:15 PM CT (4:00–4:15 PM ET) on Wednesday, October 20, in Ballroom A of the Henry B. González Convention Center.

Rates and Predictors of Pneumonia in Patients with Rheumatoid Arthritis: Strong Association with Corticosteroid Therapy

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PURPOSE: Biologic therapy in rheumatoid arthritis (RA) is associated with increased rates of infection in controlled trials (RCT). However, the incidence of most infections in RA patients is not known, and it is likely that infections rates may vary with severity of illness and treatments for RA. The purpose of this study is to describe the incidence rate of pneumonia in RA and to identify and quantify risk factors for infection.

METHODS: 15,966 RA patients completed semi-annual questionnaires for up to a 2.5 years beginning in 2002. Pneumonia data were obtained from patient's self-reports, and then validated by medical and death records. Pneumonias were identified by etiologic agent, but combined for analysis. Predictors of infection were lagged variables using values from the previous 6-month period.

RESULTS: At the study onset, the mean (SD) age of patients was 60.5 (SD 13.2) years and 77.1% were women. The mean HAQ score was 1.15 (0.73) and median RA duration was 11.2 years. During the period of follow-up 53.0% used a biologic, 18.7% hydroxychloroquine (HCQ), 55.7% methotrexate, 32.4% a DMARD but no TNF, 10.2% no DMARD or biologic, and 38.4% prednisone with or without other treatments. Incidence rates for infection per 1,000 patient years (Table 1) were lowest in DMARD (21.6) and hydroxychloroquine (HCQ) users (22.1), followed by biologic users (27.3), and greatest in prednisone users (41.7). All variables in Table 2 were significantly associated with pneumonia in univariate analyses (Table 2). The strongest associations were noted for HAQ (OR 1.9) and prednisone (2.7). Slight protective associations were noted for DMARDs without biologics (OR 0.8) and for HCQ (OR 0.8). In a multivariate model that included all predictors in Table 2, significant predictors were prednisone (2.3 (95% CI: 1.9 to 2.7)), HAQ (OR 1.8 (95% CI: 1.6 to 2.0)), biologics (1.2 (95% CI: 1.0 to 1.5)), male sex (1.3 (95% CI: 1.1 to 1.6)) and age per 10 years (1.2 (95% CI: 1.1 to 1.3)).

CONCLUSIONS: In clinical practice, rates of pneumonia are slightly increased among biologic users but are substantially increased among those receiving corticosteroids. Functional status also plays a strong predictive role for pneumonia development. These data indicate an increased risk among biologic users, but also demonstrate a much larger risk from corticosteroids, and suggest more attention to should be paid to this commonly used but less safe therapy.

Table 1. Rates of Pneumonia in RA

Treatment	Incidence per 1000 pt-years
All patients	24.2 (22.4 to 26.2)
Biologics	27.3 (22.4 to 26.2)
DMARD (+), Biologics (-)	21.6 (18.6 to 24.9)
HCQ only	22.1 (14.1 to 33.3)
Prednisone	41.7 (37.4 to 46.4)

Table 2. Odds Ratios: Associations with Pneumonia

Predictor	OR (95% CI)
Age (10 years)	1.3 (1.2 to 1.3)
Sex (Male=1)	1.2 (1.0 to 1.4)
HAQ	1.9 (1.7 to 2.1)
Prednisone	2.7 (2.3 to 3.2)
Biologics	1.3 (1.1 to 1.5)
RA duration (10 yrs)	1.1 (1.0 to 1.1)
No DMARD, No Biologics	1.0 (0.6 to 1.6)
DMARD (no Biologics)	0.8 (0.7 to 1.0)
HCQ	0.8 (0.7 to 1.0)

Disclosure: F. Wolfe, Bristol-Meyers-Squibb 2; Centocor 2; K. Michaud, None

Author disclosure legend—Authors' disclosures of third-party relationships are listed in numeric format according to the following listing:

None—Nothing to disclose; 1—Stock options or bond holdings in a for-profit corporation or self-directed pension plan; 2—Research grants; 3—Employment (full or part-time); 4—Ownership or partnership; 5—Consulting fees or other remuneration (payment); 6—Non-remunerative positions of influence such as officer, board member, trustee or public spokesperson; 7—Receipt of royalties; 8—Speakers bureau.