RA Flare Risk Not Predicted by Adalimumab Trough, Antibody Levels

TNFi treatment optimization should be explored with further RA drug monitoring studies.

In patients with [**rheumatoid arthritis**](https://www.rheumatologyadvisor.com/rheumatoid-arthritis/rheumatoid-arthritis-rituximab-biosimilar-safety-assessed/article/813411/) (RA) with long-term low disease activity (LDA) who discontinued adalimumab (ADA) therapy, neither ADA serum trough levels nor ADA antibody levels predicted flare risk over the course of 1 year of follow-up, according to findings published in *Rheumatology*. However, sufficient ADA levels were linked to a delay in time until flare in those who had a disease flare within 1 year.

When sustained remission or LDA of RA is achieved, clinicians often consider tapering or stopping patients' biologic medications, including tumor necrosis factor inhibitors (TNFi). Investigators of this study sought to determine whether trough or antibody levels predicted RA flares after stopping ADA.

In a secondary study using data from the Potential Optimalisation and Effectiveness of TNF-blockers clinical trial, 210 patients with RA (mean age, 59 years; 69% women) who stopped ADA were enrolled and followed for 1 year. All participants had been taking ADA 40 mg every 2 weeks for >1 year and had LDA, which was defined as a 28-joint Disease Activity Score with erythrocyte sedimentation rate (DAS28-ESR) <3.2 or a clinical assessment of LDA with C-reactive protein <10 mg/L for ≥6 months before stopping ADA therapy. The mean DAS28-ESR for all individuals was 1.96.

Between 12 and 17 days after ADA cessation, ADA trough levels were measured. When the ADA trough level was low, ADA antibody levels were also measured. The area under the receiver operating curve (AUC) and regression analysis were used to determine any association between ADA trough levels and time to flare. Patients were evaluated at baseline and every 3 months, as well as during suspected flares.

After discontinuing ADA, 106 patients (51%) had disease flare within the follow-up year. The AUC for ADA trough levels and flare was 0.50 (95% CI, 0.42-0.58; *P* =.92), while the flare hazard ratio (HR) for adequate (≥5 µg/mL) vs inadequate (<5 µg/mL) ADA trough level was determined to be 0.93 (95% CI, 0.63-1.36). The 6-month flare HR for ADA trough level <5 µg/mL vs ≥5 µg/mL was 1.60 (95% CI, 0.96-2.66), and the HR for adequate ADA trough levels was 0.39 (95% CI, 0.63-1.36; *P* = 0.70).

Of the 4 patients who had elevated ADA antibody levels, 2 experienced flare. Compared with those who did not have disease flare, patients who had disease flare had significantly higher baseline DAS28-ESR and body mass index (2.10 vs 1.82; *P* =.008 and 27 vs 25 kg/m2; *P* =.003, respectively). Adequate ADA trough levels were correlated with an increased time to flare (*P* =.02).

Study limitations included extended disease duration (mean, 9 years) and a possibility that study results might not fully represent the RA population examined.

The study authors recommend that TNFi treatment optimization be explored with further RA drug monitoring studies.

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**Reference**

Lamers-Karnebeek FBG, Jacobs JWG, Radstake TRDJ, van Riel PLCM, Jansen TL. [**Adalimumab drug and antidrug antibody levels do not predict flare risk after stopping adalimumab in RA patients with low disease activity**](https://academic.oup.com/rheumatology/advance-article-abstract/doi/10.1093/rheumatology/key292/5152317?redirectedFrom=fulltext) [published online October 31, 2018]. *Rheumatology (Oxford)*. doi:10.1093/rheumatology/key292