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CENTER FOR GLOBAL CLINICAL RESEARCH DATA

RHEUMATOID ARTHRITIS DATA REUSE

Investigating whether the efficacy of bDMARDs is different in people with seropositive and seronegative rheumatoid arthritis

BACKGROUND:

Rheumatoid arthritis (RA) is an autoimmune disorder, which primarily affects the joints and is characterized by inflammation and pain. RA most commonly affects the hands and wrists, but can also affect other parts of the body. There is currently no cure for RA, but treatment options have improved considerably in recent years with the development of new therapies and treatment strategies.

Rheumatoid factor (RF) and anticitrullinated protein antibodies (ACPA) are clinically valuable biomarkers for the diagnosis and prognosis of RA. Seropositive RA are known to have worse long-term clinical and radiographic outcomes than seronegative RA, which is an entity with a higher risk of misdiagnosis. Furthermore, based on differences in associations with genetic and environmental risk factors, seropositive and seronegative disease are presumed to have different underlying pathophysiological mechanisms. However, whether serological status may also affect treatment responses to biological disease-modifying anti-rheumatic drugs (bDMARDs) is not completely clear.

RESEARCHER QUESTION:

Kaoru Takase-Minegishi is an Assistant Professor at Yokohama City University, Japan. For this project, Dr. Takase-Minegishi's team performed a meta-analysis based on a systematic literature review including data from randomized controlled trials (RCTs) to investigate whether the efficacy of bDMARDs differs in autoantibody-positive RA patients (seropositive) compared to those without autoantibodies (seronegative).

"We would like to use the Vivli platform again in the future….Vivli has a lot of data and was very helpful." - Dr. Kaoru Takase-Minegishi

FINDINGS

In csDMARD-naive and csDMARD-IR patients, seropositivity was not associated with a better response to bDMARDs. Other outcomes mostly showed no significant difference between the groups, and efficacy was generally comparable between seropositive and seronegative patients for a range of treatment protocols.

IMPACT

This research includes previously unpublished data, the first opportunity to perform meta-analysis on this complete dataset. Previously unpublished data are included in the Supplementary Material, available online alongside the article recently published in the journal *Rheumatology*. This research provides a very important additional perspective to the data reported from observational studies thus far, uncovering essential differences.

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RESEARCH PROCESS:

To answer the question of whether there is a different efficacy of bDMARDs in seropositive patients compared to seronegative patients, the research team was able to access individual patient data (IPD) from 28 eligible RCTs. For trials comparing bDMARDs combined with conventional synthetic disease-modifying antirheumatic drugs (csDMARDs) versus csDMARDs alone, the team calculated relative risks (RR) comparing two groups (such as seropositive versus seronegative) for efficacy outcomes for each arm. Following this, they computed relative risk ratios (RRRs), as the ratio of RR of the bDMARD-arm and the RR from the non-bDMARD-arm, obtaining pooled effects with random effect meta-analyses.

NEXT STEPS:

READ MORE

Effect of rheumatoid factor and anticitrullinated peptide antibody on the efficacy of biological disease-modifying antirheumatic drugs in patients with rheumatoid arthritis (Vivli Research Requests 4922, 3274)

The Impact of Autoantibodies (RF and ACPA) on the Efficacy of Biological Disease-modifying Antirheumatic Drugs in Rheumatoid Arthritis: Meta-analysis of Randomized Controlled Trials (Abstract, American College of Rheumatology Convergence 2022)

The impact of autoantibodies (RF and ACPA) on the efficacy of biological disease-modifying antirheumatic drugs in rheumatoid arthritis: meta-analysis of randomized controlled trials (*Annals of the Rheumatic Diseases*)

The impact of autoantibodies on the efficacy of biological disease-modifying anti-rheumatic drugs in rheumatoid arthritis: meta-analysis of randomized controlled trials (*Rheumatology*)

Find out more about requesting data from Vivli.

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