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Could diagnostic biomarkers be used to predict the response to biologic therapy in Rheumatoid Arthritis?

Gavrilă B I¹, Claudia Ciofu¹, Carina Mihai¹, Bojincă M¹, Stoica V¹, Gabriela Udrea¹, Ciotaru D², Mihaela Surcel², Adrina Munteanu², Ursaciuc C² and Eugenia Panaitescu¹

¹Carol Davila University of Medicine and Pharmacy, Romania

²INCD, Romania

Background: Biologic therapies have revolutionized the treatment of Rheumatoid Arthritis (RA). Despite these advances, 20-40% of the patients are declared nonresponders to at least one of the therapies. The patient exposure to the potential side effects and high costs requires the discovery of a biomarker that could identify those who can benefit from the pretreatment of a certain therapy. We proposed to test the predictive role for the response to biologic therapy of diagnostic biomarkers used in RA: rheumatoid factor (RF) isotypes IgM and IgA, anti-cyclic citrullinated peptide (anti-CCP) and auto-antibodies against mutated citrullinated vimentin (anti-MCV). We also followed the evolution of serum levels of these biomarkers under biologic therapy.

Methods: Prospective and observational study including 64 patients followed 12 months with active RA, uncontrolled by conventional synthetic DMARDs or declared non-responders to one of the biologic DMARDs.

Results: Lower baseline titres of RF type Ig M (51.36 ± 95.359 U/ml, $p=0.01629$), Ig A (22.45 ± 61.256 U/ml, $p=0.03336$) and anti-CCP (60.82 ± 26.331 ng/ml, $p=0.00011$) had predictive value for achieving a good EULAR response at 6 months. Regarding anti-MCV baseline titres, there were no differences between groups at 6 months ($p=0.45914$) or at 12 months ($p=0.11354$). Grouping patients in 2 categories (responders/non-responders), we identified significant differences between groups only for anti-CCP and response at 6 months (responders 96.04 ± 50.355 ng/ml, non-responders 146.16 ± 41.68 ng/ml, $p=0.02834$). For the EULAR response at 12 months, lower baseline titres for RF type Ig M (92.93 ± 120.22 U/ml, $p=0.01032$) and Ig A (49.96 ± 98.08 U/ml, $p=0.00247$) had predictive value for achieving a good response at 12 months. We didn't obtain other information grouping patients in 2 categories. Regarding the evolution of serum levels, we noticed a reduction for all four biomarkers tested, statistically significant at 6 and / or 12 months from baseline.

Conclusion: Besides from their diagnostic role, these biomarkers could be used for other purposes in Rheumatoid Arthritis.

Biography

Gavrilă B I completed his PhD in 2016 from University of Medicine and Pharmacy, Bucharest (Romania). Currently, he is working as an Assistant Professor at Department of Internal Medicine and Rheumatology, Bucharest.

bogdang135@yahoo.com

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