COMPARATIVE STUDY OF THE B CELL SUBSETS DISTURBANCE IN NEWLY DISCOVERED VERSUS WELL ESTABLISHED RHEUMATOID ARTHRITIS

Thesis
Submitted for partial fulfillment
Of the Master degree in Medical Microbiology and Immunology

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2017

Thesis Title: Comparative Study Of The B Cell Subsets Disturbance In Newly Discovered Versus Well Established Rheumatoid Arthritis

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Abstract

Background:

Rheumatoid arthritis (RA) is a chronic, progressive inflammatory systemic disease, affecting primarily the small joints of the hands and feet symmetrically and characterized by joint destruction, progressive disability, and premature death. The hypotheses most ideally accepted propose that RA results from abnormal immunological response to unidentified triggering agents (possibly a virus) in a genetically susceptible individual.

The involvement of B cell in systemic autoimmune disease has emerged as a new concept over the past ten years, leading to new avenues for innovative therapeutic strategies. B cell maturation and activation are under control of soluble and membrane-bound B cell-activating factors that belong to the tumor necrosis factor (TNF) superfamily: the cytokine B cell Activating Factor (BAFF) and another cytokine namely a Proliferation-Inducing Ligand (APRIL).

Objective:

To investigate the B cell homeostasis disturbance as well as B cell activation markers namely BAFF and APRIL in patients with rheumatoid arthritis comparing newly discovered patients with those who receive disease modifying antirheumatic drugs in 60 Egyptian patients with RA and 30 healthy control.

Methods:

Blood samples were collected in (EDTA) sterile, absolute number of blood CD19 B cells was determined by flow cytometry using the CD19-PE Kit (Immunotech, France) according to the manufacturer's instructions. BAFF and APRIL blood concentration was measured using commercially available ELISA kits (Bosterbio, USA)

Results:
According to the manufacturer's recommendations, we found:
*As regard to B cell count
There was statistically significant difference between different study with low mean among well-established RA group and high mean among controls. Which meaning that the B cell count was diminished in the two groups of RA either well established or the newly discovered but it more decreased among well-established RA group than the newly discovered one.
*As regard to BAFF concentration
There was statistically significant difference between different study groups with high mean among well-established rheumatoid arthritis group and low mean among control. This means that BAFF concentration was increased in the two groups RA either well established or newly discovered but with more increase among well-established group.
*As regard to APRIL concentration
There was statistically significant difference between different newly discovered rheumatoid arthritis and control groups with low mean among newly discovered rheumatoid arthritis group and high mean among controls. On the other hand, there was no statistical significant difference between each of well-established rheumatoid arthritis group and controls or with new discovered rheumatoid arthritis group. This means that APRIL concentration was slightly decreased in the two groups of RA but decreased more among newly discovered group.
Conclusion:
Broader insight into B-cell pathologic reactions could help generating novel biomarkers of disease diagnosis, prognosis, and response to therapy in patients with RA.
Keywords: Disease modifying anti-rheumatic drugs (DMARDs), a proliferation-inducing ligand (APRIL), B-cell activating factor (BAFF), rheumatoid arthritis (RA)