

Anti-CD20 antibody for the treatment of autoimmune diseases

○Yoshiya Tanaka

(1st Dept of Internal Med, U of Occupational and Environmental Health, Japan)

Rheumatoid arthritis (RA) and systemic lupus erythematosus (SLE) are an autoimmune disease involved by multiple organs. Although corticosteroids and immunosuppressants are widely used, we have experiences of patients with SLE and RA who are refractory to conventional treatments, and innovative approaches to newer therapeutic agents aimed at more specific targets need to be developed. B-cells initiate and perpetuate the disease processes of SLE and RA, by which B cells play a pivotal role in the pathological processes has been emerging, which imply the significance of B-cells as a target to control of the diseases. Rituximab is a monoclonal antibody against CD20 on B cells. We have reported refractory SLE patients were treated by rituximab, and that high efficacy of rituximab was obtained in both a pilot study and a phase 1/2 clinical examination. Thus, we document that reduction of interactions of B cells by rituximab could improve the disease course in refractory SLE. Biologics targeting TNF have brought about a paradigm shift in the treatment of RA. However, recent controlled trials have shown that B cell-targeted therapies are also effective in RA patients who had active disease despite TNF inhibitors. Taken together, biologics targeting B-cells have potentials by bringing about a breakthrough in treatment of SLE and RA and also provides important insights into pathogenesis of these systemic autoimmune diseases.