

Department of Internal Medicine

Division of Rheumatology

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General Summary

An internist must aim to practice patient-oriented medicine that is well grounded in medical science. Therefore, our department encourages its staff members to do basic and clinical research. Major fields of research are clinical and experimental immunology.

Research Activities

Clinical and experimental studies of autoimmune disease were performed.

1. Analysis of the relationship of neovascularization in animal models of autoimmune disease

Several studies have reported the arthritis-inhibiting effects of neovascularization inhibitors administered in animal models of rheumatoid arthritis. We evaluated the effects of the neovascularization inhibitor endostatin in murine models of collagen-induced arthritis and bleomycin-induced pulmonary fibrosis.

Furthermore, we are investigating whether *Bombina variegata* peptide 8 is involved in angiogenesis in autoimmune arthritis.

2. Evaluation and analysis of synovial blood flow signals on power Doppler ultrasonography in patients with rheumatoid arthritis

To assess synovial neovascularization in patients with rheumatoid arthritis, we evaluated the synovial blood flow signals on power Doppler ultrasonography and analyzed the correlation of neovascularization-related factors (e.g., vascular endothelial growth factor) with serum or disease activity.

3. Histopathological comparison between dermatomyositis and polymyositis

We obtained muscle, fascia, and skin via en-bloc biopsy from patients with dermatomyositis or polymyositis under magnetic resonance-guidance and then histopathologically investigated the severity of inflammation in muscle, fascia, and subcutaneous tissue to find differences between dermatomyositis and polymyositis.

4. Clinical studies aimed at standardizing immunosuppressant therapy of autoimmune disease

Many immunosuppressant drugs have been used to treat severe autoimmune diseases, such as amyopathic dermatomyositis with interstitial pneumonia, but the efficiency and treatment strategies of these drugs have not been clarified. We performed a clinical trial to establish a strategy for treating severe autoimmune diseases. Clinical studies aimed at standardizing the immunosuppressant therapy of autoimmune diseases were performed.