

인위적으로 유도된 자가면역성 관절염 흰쥐모델에서 우슬과 초음파의 치료효과
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Therapeutic Effects of *Achyranthes Radix* and Ultrasound Therapy on Type II collagen Induced Autoimmune Arthritis in Rat Model

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Objectives

This study was to obtain the basal data on their incidence patterns of Type II collagen Induced Autoimmune Arthritis diseases for the establishment of efficient control strategy.

Materials

Achyranthes Radix, US Machine(Rich-Mar corpr Model V, USA), Sprague-Dawley 25 Rats, Freund's incomplete adjuvant(Sigma, USA), Type II collagen(Sigma, USA), Tissue-Tex 4701, (Sakura Co. Japan), Rotary Microtome 2040(Sakura Co. Japan)

Methods

Thirty-five Sprague-Dawley rats which was divided into five group ; Sham group was daily administered DW 0.5 ml to normal rats during 28 days, Control group was daily administered DW 0.5 ml to arthritic rats during 28 days, experimental group I was daily administered with *Achyranthes Radix* extract 500 mg/kg 0.5 ml to arthritic rats during 28 days, experimental group II was evaluated with pulsed mode(duty cycle 1:9) at 1MHz, 0.5 W/cm², 6 min/days during 28 days, experimental group III was daily administered with *Achyranthes Radix* extract 500 mg/kg 0.5 ml to arthritic rats and was evaluated with pulsed mode(duty cycle 1:9) at 1MHz, 0.5 W/cm², 6 min/days during 28 days.

Results and Discussion

The results were as follows : 1. Group I, II, III was significantly inhibited the rate of hind paw volume compared with control group. Group III was most significantly increased the volume inhibition rate. 2. Group I, II, III was significantly decreased CRP, WBC, arthritis index, and the time of heat threshold compared with control group, and group III was most significantly decreased. 3. Group I, II, III was significantly decreased the mass of IL-6 in synovia compared with control group. 4. Group I, II, III was relieved and reproduced the erosion of arthritic site compared with control group, and group III was most effective compared with group I, II with naked eye on the histopathologic findings. 5. In radiologic findings, Group I, II, III was improved on the radiological degree, and group III was most effective compared with group I, II.

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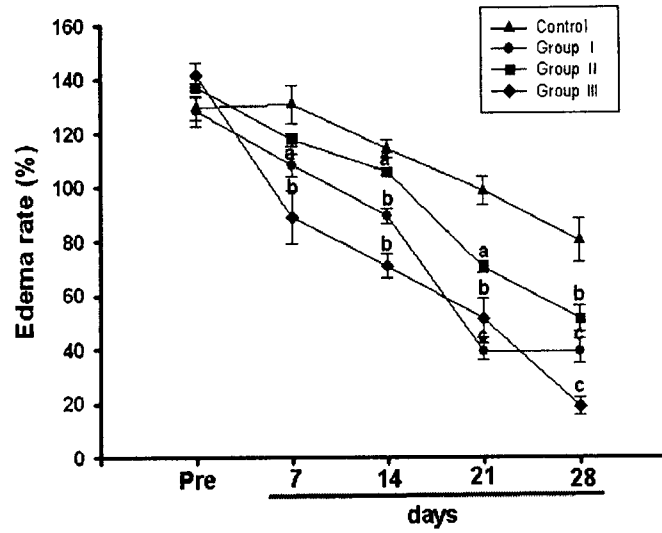


Fig. 1. Effect of AR and US Therapy on the edema rate in arthritic rats

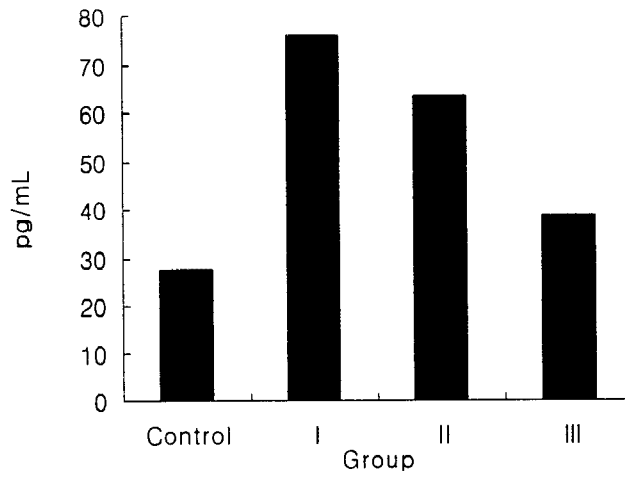


Fig. 2. The effect of AR and US Therapy on the interleukin-6 expression by western blotting analysis