

E-E3-05

The effect of *Achyranthes Radix* and regulatory treadmill exercise on SD rats with type II collagen induced arthritis

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The roots of *Achyranthes Radix*(AR) have been known to have diuretic, emmenagogic, hypoglycemic and antineuralgic activities in traditional folk medicine. In this study, we investigated the therapeutic effects of AR gel and regulatory treadmill exercise in collagen induced arthritis(CIA) in rats. CIA in rat is a widely studied animal model of inflammatory polyarthritis with similarities to rheumatoid arthritis(RA). Immunization of male Sprague-Dawley rats with type II collagen emulsified in incomplete Freund's adjuvant, followed by booster injection 14 days later induced CIA. Thus, in this study are observed the change of arthritis index, hind paw volume, heat threshold, analysis of blood chemistry(WBC), histopathologic findings.

The conclusions obtained from this study were as follows;

1. The treatment with AR gel and regulatory treadmill exercise groups was significantly restored than control group on hind paw volume and arthritic index(p<.05).

2. The treatment with AR gel and regulatory treadmill exercise groups was significantly restored than control group on heat threshold, WBC(p<.05).

3. The treatment with AR gel and regulatory treadmill exercise groups was relieved and reproduced the erosion of arthritic site compared with control group with naked eye on the histopathologic findings.

Therefore, it was shown applied AR gel and regulatory treadmill exercise was found to be effective in alleviating the arthritic symptoms and anti-inflammatory in adjuvant-induced arthritis rats.

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The effect of *gastrodia elata blume* and treadmill exercise on diabetic rat

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The aims of this investigation was to examine the effects of treadmill exercise and *gastrodia elata blume* on the diabetic rat. It is to analysis changes in blood glucose, AST, ALT, expression and histological findings.

Diabetic rats were divided into 5 different experimental groups including an control group (n=9), experimental groups I (STZ-induced diabetic rat; n=9), experimental group II (*Gastrodia elata blume* supplement; n=9), experimental group III (Treadmill exercise; n=9), experimental group IV; n=9)

In the experimental group I, the blood glucose concentration was increased and experimental group II, III, IV was decreased by *Gastrodia elata blume* supplement and exercise. AST and ALT activities of diabetic experimental groups were significantly lower than that of experimental group I (p<.05). Histopathological studies of liver and kidney shown decrease in the intensity and incidence of vacuolizations, cellular infiltration and hypertrophy of STZ-induced diabetic rat.

This results suggested that the treadmill exercise and the *Gastrodia elata blume* supplement made the increase of anti-diabet effect in type I diabetic rat. Also, *Gastrodia elata blume* supplement and exercise could play an important role in the long term management of diabetic mellitus.

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