

ANTIOXIDANT EFFECTS OF THE NOVEL HERBAL FORMULATION, KH-204 IN ANDROGEN DEPRIVATION INDUCED BLADDER

Hypothesis / aims of study

Androgen deficiency in men causes various clinical symptoms including sexual problem. In addition, a recent study demonstrated that it plays pathologic role in bladder dysfunction. Previous study demonstrated that the Korean herbal formulation, which has been used to treat late-onset hypogonadism, can be developed as a therapeutic alternative medicine to improve erectile dysfunction via the restoration or activation of the nitric oxide (NO) pathways with the synergistic effects of the activation of NO synthase (NOS). We investigated the antioxidant effects of KH-204 in androgen deprivation induced male rat bladder.

Study design, materials and methods

We investigated either sham-operated or leuprorelin 0.5mg/kg, which was subcutaneously administered once to the back of rats. Male rats were divided into four groups (n = 8 in each): a normal control group, an androgen-deprived control group and two androgen-deprived groups treated p.o. with either 200 or 400 mg/kg, KH-204 for 4 weeks. After rats were sacrificed, the bladder tissues were collected and histological studies were employed to determine the degree of bladder fibrosis. Oxidative stress was assessed by measuring 8-hydroxy-20-deoxyguanosine (8-OHdG) and superoxide dismutase (SOD).

Results

The results showed that KH-204 treatment significantly improved SOD activity, and raised plasma testosterone levels compared with an androgen-deprived control group. It had a dose-dependent protective effect against DNA oxidative damage. In addition, we demonstrated that androgen deprivation induced the induction of TGF-beta mRNA level, and KH-204 decreased androgen deprivation-induced bladder fibrosis.

Interpretation of results

Androgen deficiency induced bladder fibrosis and KH-204 provided a protective effect against the androgen deficiency.

Concluding message

This study suggests that the antioxidant effect of KH-204 contribute to the improvement of serum testosterone levels. It may be useful for prevention and treatment of bladder dysfunction associated with androgen deficiency.

Disclosures

Funding: none **Clinical Trial:** No **Subjects:** ANIMAL **Species:** Rat **Ethics Committee:** Institutional Animal Care and Use Committee in School of Medicine, The Catholic University of Korea