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**Preventive effect on bone loss in rats treated with GnRH agonist
and elevating effect of the serum estradiol levels of a herbal
medicine, Gamigongjindan (GMGJD)**

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The study was designed to evaluate the effects of a traditional Korean herbal medicine **Gamigongjindan (GMGJD)**, which was composed of **10 herbal medicines** and had been used for the treatment of oligospermia and as a postoperative medication in Korea, on bone loss in rats treated with a gonadotropin-releasing hormone (GnRH) agonist. Female rats were divided into 4 groups of 6 each at age 36 weeks. In the three experimental groups, each animal received **subcutaneous injections of long-acting GnRH agonist buserelin acetate** once every four weeks throughout the experiment. Beginning at 42 weeks of age, the experimental groups were given diets containing **conjugated estrogens or GMGJD** for 5 weeks. The administration of GnRH agonist reduced the bone mineral density in the whole femur to 92.5% of those in the control group. However, an administration of conjugated estrogens and **GMGJD** increased the serum concentrations of estradiol to 17.1- and 6.4-fold that in the GnRH agonist treated group, resulting in the augmentation of the bone mineral density to 118.4% and 111.4%. These findings indicate that **GMGJD enhances the reduced bone mineral density with slight elevation of the serum estradiol levels in the chemically castrated rats.**