

عنوان مقاله:

Effects of estradiol on reduction of osteoarthritis in rabbits through effect on matrix metalloproteinase proteins

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تعداد صفحات اصل مقاله: 6

نویسندگان:

Weiguo Wang - *Research on ۲۰۱۳ Stage Doctoral Student of Shandong University of Traditional Chinese Medicine*

Lin Wang - *Department of Orthopedics, Affiliated Hospital of Taishan Medical University, Taian, China, ۲۷۱۰۰۰*

Zhanwang Xu - *Shandong University of Traditional Chinese Medicine, Jinan, China, ۲۵۰۰۱۴*

Yanxia Yin - *Department of Orthopaedic Surgery, General Hospital of Jinan Military Command, Jinan, China, ۲۵۰۰۳۱*

Jun Su - *Department of Orthopaedic Surgery, General Hospital of Jinan Military Command, Jinan, China, ۲۵۰۰۳۱*

Xiufeng Niu - *Department of Hepatobiliary Surgery, General Hospital of Jinan Military Command, Jinan, China, ۲۵۰۰۳۱*

Xuecheng Cao - *Department of Orthopaedic Surgery, General Hospital of Jinan Military Command, Jinan, China, ۲۵۰۰۳۱*

خلاصه مقاله:

Objective(s): Osteoarthritis (OA), as a known degenerative joint disease, is the most common form of arthritis. In this study, we aimed to elucidate unclear pathogenesis of OA. Materials and Methods: Rabbit models of OA were established by the transection of the anterior cruciate ligament. Rabbits were randomly divided into three equal groups: the experimental group (OA modeling, treated with estradiol), the control group (OA modeling, treated with normal saline) and the normal group (without OA modeling). The glycosaminoglycan (GAG) and hyaluronan (HA) content of knee joint were collected and assayed. In addition, gene expression of matrix metalloproteinase (MMP)-1, MMP-۱۳ and tissue inhibitor of metalloproteinase (TIMP)-۱ were evaluated by real-time PCR and Western blot analysis. Results: Animal models were developed successfully. GAG and HA concentrations were significantly increased in the experimental and the normal group compared with the control group ($PP < 0.01$, respectively). Significant increase of GAG level in ۶, ۹ and ۱۲ week-samples were found in the experimental group compared with the control group ($P < 0.01$). The expression level of MMP-1 and MMP-۱۳ in the experimental group were lower than the control group ($P < 0.01$), but still higher than those of the normal group ($P < 0.01$). TIMP-1 expression level was found to be higher in the experimental group than that of the control and normal group ($P < 0.01$). Conclusion: The results suggested the possible role of estradiol in the pathological process of OA via its effect on the MMPs. The results also implied the effect of estradiol intervention on OA.

کلمات کلیدی:

Estradiol, Matrix metalloproteinase, Osteoarthritis, Proteoglycan

