

雌激素对去卵巢大鼠骨 I 型胶原表达及基质金属蛋白酶活性的影响

The Effects of Estrogen on Type I Collagen Expression and the Metalloproteinases Activities in Ovariectomized Rats Bone Tissue

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中文摘要:

为了探讨绝经后骨质疏松胶原代谢异常的分子机制. 采用RT-PCR和Gel-SDS-聚丙烯酰胺凝胶电泳(PAGE)分别检测卵巢切除大鼠骨组织 I 型胶原mRNA水平及基质金属蛋白酶(matrix metalloproteinase, MMPs)的活性, 免疫组化观察骨组织 I 型胶原蛋白量. 卵巢切除大鼠骨组织 I 型胶原mRNA表达降低约26.3%, pro-MMP-9活性明显提高($P<0.05$), 应用雌激素治疗后 I 型胶原mRNA表达较卵巢切除组增加34.1%, pro-MMP-9活性的增加明显降低. 卵巢切除后骨组织MMP-9明胶酶活性明显提高, 应用雌激素后MMP-9明胶酶活性明显降低($P<0.05$)表明骨 I 型胶原mRNA表达减少和pro-MMP-9活性升高是绝经后骨质疏松的机理之一.

英文摘要:

To Investigate the mechanism of postmenopausal osteoporosis in the metabolism of bone organic matrix, the levels of type I collagen mRNA in ovariectomized rats bone tissue were detected by RT-PCR. The activities of bone metalloproteinases(MMPs) were determined by Gel-SDS-PAGE. The amounts of type I collagen in bone tissues were estimated by immuno-histochemistry. The expression levels of type I collagen mRNA decreased about 26.3%, and the activities of pro-MMP-9 increased markedly in ovariectomized group compared with Sham group. Estrogen increased the levels of type I collagen mRNA about 34.1% and obviously reduced the pro-MMP-9 activities compared with OVX group. Ovariectomizing in rats resulted in the decrease of type I collagen mRNA expression and the increase of pro-MMP-9 activity, both contributed to the decrease of bone organic matrix and ovariectomized osteoporosis.

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