周期性单轴压力对大鼠髁突软骨细胞结缔组织生长因子表达的影响

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【摘要】 **目的**　探讨在髁突软骨细胞受到周期性单轴压力后，结缔组织生长因子（connective tissue growth factor，CTGF）表达的影响，为正畸治疗中髁突软骨受力后的改建提供生物学依据。**方法**　选取 1 周龄 SD 大鼠，提取并培养髁突软骨细胞，免疫组化鉴定。利用四点弯曲细胞力学加载仪对第 3 代细胞进行力值为 2000u strain、0.5Hz 的体外周期性单轴压力加载，分别在加力 0min、30min、60min 和 120min 后继续培养 24h，应用蛋白印迹法检测在不同加力时间 CTGF 蛋白表达的变化。应用 SPSS18.0 软件对数据进行统计学分析。**结果**　CTGF 的相对蛋白量在加力 0min、30min、60min 和 120min 后，分别为 0、1.59、2.34 和 3.16，随着加载时间的增加，表达呈逐渐上升趋势。且组间差异具有统计学意义（$P < 0.05$）**结论**　周期性单轴压力可刺激大鼠髁突软骨细胞 CTGF 的表达。

【关键词】 结缔组织生长因子　髁突软骨　周期性单轴压力

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Effect of cyclic compressive stress on the expression of connective tissue growth factor in rat mandibular condylar chondrocytes

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【**Abstract**】 **Object**　To investigate the effect of cyclic compressive stress on the expression of connective tissue growth factor (CTGF) in rat mandibular condylar Chondrocytes. **Methods**　Condyle chondrocytes were isolated from rat condylar cartilage. The third generation of Mandibulae Condyle chondrocytes were subjected to 0.5Hz frequency with 2000u strain strength for 0, 30, 60 and 120 min using a Four Point Bending system. The cells were then collected after 24 hours. The expression of CTGF was detected by western blot. All data obtained were analyzed by SPSS 18.0. **Results**　The relative amount of protein CTGF after 0 min, 30 min, 60 min and 120 min of cyclic compressive stress loading were respectively 0, 1.59, 2.34, and 3.16. With the increasing time of cyclic compressive stress loading, the expression of CTGF increased. There were significant differences among those groups (P<0.05). **Conclusions**　Cyclic Compressive Stress induced the increased expression of CTGF in rat mandibular condylar Chondrocytes. As a cytokine, CTGF may mediate the morphological changes by cyclic compressive stress in condylar cartilage.

【**Key words**】 Connective Tissue Growth Factor　Condylar Chondrocytes　Cyclic Compressive Stress

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