

عنوان مقاله:

The Effects of Morphine on Tissue Structure of the Growth Plate in Male Rats

محل انتشار:

مجله علوم پایه پزشکی ایران، دوره 14، شماره 6 (سال: 1390)

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خلاصه مقاله:

Objective(s) Studies have shown that morphine, in addition to its analgesic properties, has several effects on cell proliferation and apoptosis. There is also evidence that opioid receptors are present on chondrocytes. Our main objective in the present study was to investigate the effects of morphine on rat femur growth cartilage. **Materials and Methods** This research was carried out on 18 4-week-old male rats. Animals were divided into four groups: groups 1 (n= 3) and 2 (n= 4) were non morphine-dependent and groups 3 (n= 6) and 4 (n= 5) were morphine- dependent. Groups 1 and 3 were followed up for 4 weeks and the others for 7 weeks. We prepared femur bone biopsies, fixed the samples in 10% formalin and 10% nitric acid and stained the samples with haematoxylin and eosin. The thickness of the growth cartilage and its proliferative zone (PZ) cell number were studied. In addition, the existence of necrosis, inflammation, fibrosis, and hyalinisation were evaluated. **Results** There were no signs of inflammation, fibrosis, necrosis or hyalinisation in the growth cartilages of all rats. The morphine-dependent groups had a statistically significant difference ($P < 0.001$) in the number of cells in the proliferative zone and thickness of the growth cartilage compared to other groups using ANOVA analysis. **Conclusion** It seems that morphine reduces the number of cell in the proliferative zone and decreases the thickness of the growth cartilage which may alter longitudinal growth of long bones.

کلمات کلیدی:

Cell Proliferation, Growth plate, Morphine

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