





 **Current Issue**


 **Browse Issues**


 **Search**



 **About this Journal**

 **Instruction to Authors**

 **Online Submission**

 **Subscription**

 **Contact Us**



 **RSS Feed**

Acta Medica Iranica

2009;47(4) : 122-128

Implantation of Octacalcium Phosphate Stimulates both Chondrogenesis and Osteogenesis in the Tibia, but Only Osteogenesis in the Rat Mandible

F. Sargolzaei Aval, MR. Arab, AG. Sobhani, GH. Sargazi

Abstract:

Statement of problem: It is not known whether endochondral and intramembranous bones have distinct biological characteristics. Octacalcium Phosphate (OCP), a hydroxyapatite precursor, has been reported to stimulate bone formation after being implanted in parietal bone defects of rats. Purpose: The present study was designed to investigate the response of endochondral and intramembranous bones to OCP implantation and to compare their biological characteristics. Materials and Methods: Full-thickness standardized trephine defects were made in rat tibiae and mandibles and synthetic OCP was implanted into the defects. The biologic response was examined histologically to identify bone and cartilage formation. Results: Both chondrogenesis and osteogenesis were initiated in the tibia, 1 week after implantation of OCP and most of the cartilage was replaced by bone at week 2. However, the mandible only showed osteogenesis in response to OCP implantation at week 2, and no cartilage formation was associated with the osteogenesis. Conclusions: According to the results obtained in the present study, endochondral and intramembranous bones exhibit different biological responses to OCP implantation in rats.

Keywords:

[Endochondral bone](#) . [Intramembranous bone](#) . [Chondrogenesis](#)

TUMS ID: 3363

Full Text HTML  Full Text PDF  448 KB

top ▲

[Home](#) - [About](#) - [Contact Us](#)

TUMS E. Journals 2004-2009
Central Library & Documents Center
Tehran University of Medical Sciences

Best view with Internet Explorer 6 or Later at 1024*768 Resolutions