

**S.O. Mostovoy**<sup>1</sup>  
**O.V.Ostapenko**<sup>2</sup>

<sup>1</sup> State institution  
"S.I.Georgievsky Cri-  
mean State Medical  
University", Simfero-  
pol, Ukraine

<sup>2</sup> National  
O.O.Bohomolets  
Medical University,  
Kyiv, Ukraine

**Key words:**  
metaepifisate plate,  
pamired,  
chondrodystrophy.

*Received: 25.03.2013*

*Accepted: 07.05.2013*

UDC: 616.061-009.7:612.08:616.71-007.15:616.718.4:615.363

## **EXPERIMENTAL MODEL FOR CHON- DRODYSTROPHY OF LARGE BONES CAUSED BY AN OVERDOSE OF BISPHOSPHONATES**

**Summary.** The results of the influence of high doses of aminobifosfonate "Pamired" on condition of metaepifisate plates of long bones. The aim of investigation is to simulate and study the characteristics of lesions the morphostructure of organ with bisphosphonates. 48 laboratory rats at the age of 6 month were used during the investigation. The weight was about 120-150g. Femoral, humeral and tibial bones were studied with light microscopy. Degree of damage were studied with binocular microscope and photo nozzle "Canon" with enlargement 100, 800. Processes of calcification and dehydration of cartilage caused by overdosing of remedy are shown. It lead to decrease in capacity of proliferation of chondrocytes, non-uniform width of growth plate and loss of zones. Qualitative variations at the microscopic level, which can be used as one of the models chondrodystrophy are shown.

**Citation:** Mostovoy SO, Ostapenko OV. [Experimental model for chondrodystrophy of large bones caused by an overdose of bisphosphonates]. *Morphologia*. 2013;7(2):98-101. Russian.

© **Mostovoy S.O., Ostapenko O.V., 2013**

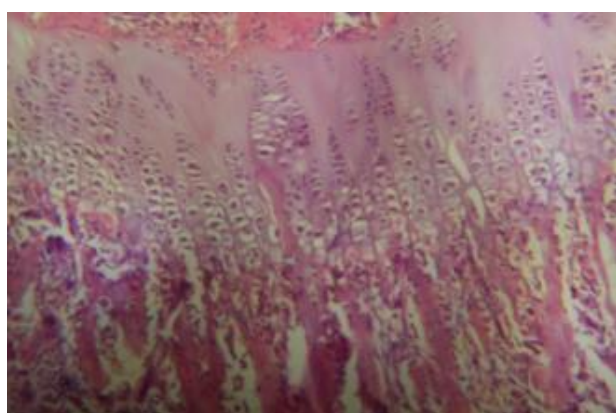


Fig. 1. Metaepiphyseal plate of control group of animals with the right histoarchitectonic (preserved zonality). Hematoxylin and eosin staining. × 100.

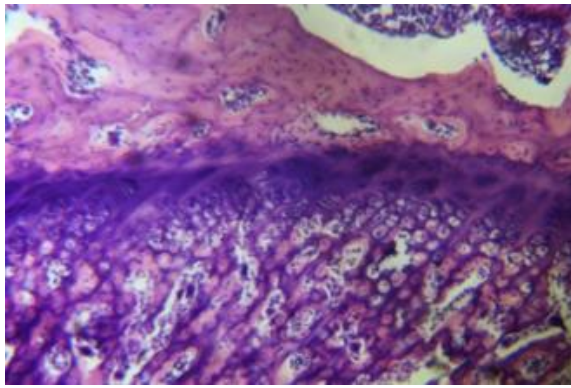


Fig. 2. Reducing the width of the zones and destructuring of metaepiphyseal plate in the experimental group. Hematoxylin and eosin staining.  $\times 100$ .

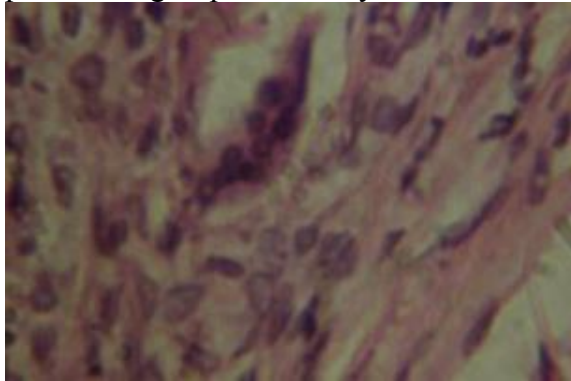


Fig. 3. Mature active chondroclasts in the area of rearranging trabeculi of primary spongiosa of control animals. Hematoxylin and eosin staining.  $\times 800$ .

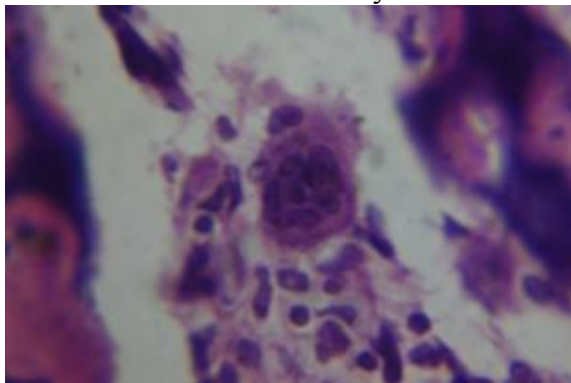


Fig. 4. Mature inactive chondroclasts in the area of calcified cartilage with trabecular structure. Hematoxylin and eosin staining.  $\times 800$ .

#### *References:*

Ivanovskaya TYe, Gusman BS. [Pathological anatomy of diseases of the fetus and child]. Moscow: Meditsina; 1981. Vol. 2. p. 56. Russian.

Koveshnikov VG, Abakarov MKh, Luzin VI. Skeletnyye tkani: khryashchevaya tkan', kostnaya tkan' [Skeletal tissues: cartilaginous, bone tissue]. Luhansk; 2000. p.69-72. Russian.

Moroz VA, Lanko LG. [Bisphosphonates in modern clinical practice]. Provizor. 2009;(8):18-22. Russian.

Kozhemyakin YuM, Khromov OS, Filonenko MA, Sayfetdinova GA, authors. Solovyov AI, editor. Naukovo-praktychni rekomendatsiyi z utrymannya laboratornykh tvaryn ta

roboty z nymy [Scientific and practical advice on the maintenance of laboratory animals and work with them]. Kyiv: Avitsenna; 2002. 156 p. Ukrainian.

Hauser PV, Collino F, Bussolati B, Camussi G. Nephric and endothelial injury. *Curr Opin Nephrol Hypertens*. 2009 Jan;18(1):3-8. doi: 10.1097/MNH.0b013e32831a4713. Cited in: PubMed; PMID: 19077682.

Engsig MT, Chen QJ, Vu TH, Pedersen AC, Therkidsen B, Lund LR, Henriksen K, Lenhard T, Foged NT, Werb Z, Delaissé JM. Matrix metalloproteinase 9 and vascular endothelial growth factor are essential for osteoclast recruitment into developing long bones. *J Cell Biol*. 2000 Nov 13;151(4):879-89. Cited in: PubMed; PMID: 11076971; PMCID: PMC2169432. Erratum in: *J Cell Biol* 2001 Jan 22;152(2):following 417.

D'Agati VD, Fogo AB, Bruijn JA, Jennette JC. Pathologic classification of focal segmental glomerulosclerosis: a working proposal. *Am J Kidney Dis*. 2004 Feb;43(2):368-82. Cited in: PubMed; PMID: 14750104.