Camila Marques de Araujo et al., Orthop Muscular Syst 2017, 6:3 (Suppl)
DOI: 10.4172/2161-0533-C1-036

Effect of collagen type-II oral supplementation on subchondral bone of traumatic knee osteoarthritis model

Camila Marques de Araujo and **Fernando A Vasilceac**
Federal University of Sao Carlos, Brazil

Statement of the Problem: Due to the restrictions on functionality and quality of life in osteoarthritis (OA), it is necessary to investigate new treatment options for the main tissues that are affected by OA. The purpose of this study is to evaluate the subchondral bone of knee osteoarthritis of rats after administrating undenatured collagen (UC-II) supplementation.

Methodology & Theoretical Orientation: 24 rats were divided into 4 groups: Control (C), Osteoarthritis (OA), Control with supplementation (CS) and Osteoarthritis with supplementation (OAS). The OA and OAS groups were submitted to surgical transection of the anterior cruciate ligament (ACL) bilaterally, as an animal model of osteoarthritis. After 2 weeks of induction, the CS and OAS groups began the oral supplementation protocol with 5 mg of UC-II diluted in 1 mL of water, daily for 2 weeks. In order to evaluate bone mineral density (BMD) and bone mineral content (BMC), a method developed for the study of Boudenot et al., 2014 was used to separate regions of interest specifically involved in knee OA: Proximal tibia (PT) and distal femur (DF).

Findings: The OA group presented lower BMC and BMD when compared to group C; therefore, initial OA affects the subchondral bone. The CS group had the same BMC and BMD values as group C, which agrees with other studies that no harm is caused to healthy junction after oral supplementation of UC-II. Finally, the OAS group shows the best value only in the BMC of FD when compared to the OA group. Among the 4 groups, no significant results were found in mineral density bone.

Conclusion & Significance: The effect of oral supplementation UC-II on the bone subchondral seems to be limited only to the BMC of the femur bone with no effects in tibia and in the bone mineral density the all knee joint.

Biography

Camila Marques de Araujo is an undergraduate student of Gerontology at the Federal University of São Carlos, Brazil. She has 3 years of experience in research working on two different projects in the area of rheumatology working with disease-modifying drugs for osteoarthritis and surgical transection of the anterior cruciate ligament in rats. She is currently conducting research at the Laboratory for Translational Research in Osteoarthritis in Chicago, USA.

marques.camila@outlook.com

Notes: