Orthop Muscular Syst 2016, 5:3(Suppl)
http://dx.doi.org/10.4172/2161-0533.C1.030

Effectiveness of MIPO on comminuted tibia or femur fractures

Andalib Ali
Isfahan University of Medical Science, Iran

Introduction: Treatment of comminuted fractures of long bones has long been a problem in orthopedic surgery. Recently fixation without opening the fracture site known as MIPO (minimally invasive plate osteosynthesis) has been used. We performed this study to assess the result, and complications of this treatment for comminuted fractures of tibia and femur.

Method: 49 patients with femoral and tibial comminuted fractures were treated with minimal invasive plate osteosynthesis. After biological fixation, joint motion was started but avoided weight bearing until radiographic evidence of union was occurred.

Results: 32 femoral fractures and 17 tibial fractures were evaluated. In 48 patients, union was completed but in one patient with femoral fractures, there was nonunion. After bone graft and giving 9 months to heal, full union achieved. Mean union time in all patients in this study was 18.57±2.42 weeks. According to the t-test exam, all of the results were statistically significant (p=0.09)

Conclusion: according to the result of this study and comparing it with others, MIPO is safe, simple and effective method of fixation for comminuted fractures of long bones. It has a high rate of union with minimal complication.

ali_andalib@yahoo.com

Histological and gene expression effects of platelet-rich gel supernatants in vitro system equine cartilage degeneration

Jorge U Carmona[1], **Diana L Ríos**[1], **Catalina López**[1], **María E Álvarez**[1], **Jorge E Pérez**[1] and **Mabel E Bohórquez**[2]
[1]Universidad de Caldas, Colombia
[2]Universidad del Tolima, Colombia

Introduction: Platelet-rich plasma (PRP) preparations are a common treatment in equine osteoarthritis (OA). However, there are controversies regarding the ideal concentration of platelets and leukocytes in these biological substances necessary to induce an adequate anti-inflammatory and anabolic response in articular cartilage.

Aims & Methods: The aims were to study the influence of leukocyte- and platelet-rich gel (L-PRG) and pure platelet-rich gel (P-PRG) supernatants on the histological changes of cartilage, the degree of chondrocyte apoptosis, the production of hyaluronan (HA) and the gene expression of nuclear factor kappa beta (NFκβ), matrix metalloproteinase 13 (MMP-13), a disintegrin and metalloproteinase with thrombospondin motifs 4 (ADAMTS-4), collagen type I alpha 1 (COL1A1), COL2A1 and cartilage oligomeric matrix protein (COMP) in normal cartilage explants (CEs) challenged with lipopolysaccharide (LPS).

Results: Overall, 25 % L-PRG supernatant (followed in order of importance by, 50% P-PRG, 25% P-PRG and 50% L-PRG) represented the substance with the most important anti-inflammatory and anabolic effect. 25% P-PRG supernatant presented important anabolic effects, but it induced a more severe chondrocyte apoptosis than the other evaluated substances.

Conclusions: 25% L-PRG supernatant presented the best therapeutic profile. Our results demonstrate that the biological variability of PRP preparations makes their application rather challenging. Additional in vivo research is necessary to know the effect of PRP preparations at different concentrations.

carmona@ucaldas.edu.co