Clinical Effect of Glucosamine and Chondroitin Contained Nutraceutical on Osteoarthritis in Dogs after Anterior Cruciate Ligament Rupture Surgical Repair

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Abstract - Glucosamine and chondroitin sulfates are key structural components of extracellular fluid in articular cartilage. From previous studies, glucosamine and chondroitin sulfates have several positive effects on cartilage homeostasis and are used in osteoarthritis patients. Although glucosamine and chondroitin sulfates have some positive effects on clinical treatment of osteoarthritis, clinical results still need to be investigated. The objective of this study was to investigate the clinical outcomes on lameness score, radiological score, serum WF6 level and serum HA level of glucosamine and chondroitin sulfates in osteoarthritic dogs, using anterior cruciate ligament rupture patients as study models of osteoarthritis (n=12). The results from this study show no statistical significance between the glucosamine/chondroitin (GsCn) (n=6) and placebo groups (Plab) (n=6) in weight bearing score, lameness score, serum level of hyaluronic (HA) and WF6 chondroitin epitope and radiological score throughout the 16-week study. In the GsCn group the serum WF6 level decreased more rapidly and the increase in serum HA level was slower, compared to the Plab group. Consequently, from these findings, glucosamine and chondroitin sulfate contained nutraceutical may provide some delay effects on the degradation process of cartilage and inflammation of synovial membrane. Moreover, glucosamine and chondroitin sulfates had a high safety index and did not show any adverse effect throughout the study period (16 weeks).

Keywords: anterior cruciate ligament rupture, chondroitin, glucosamine, osteoarthritis.

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