



Evaluating Preventive Therapy for Ligament Disease

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Result: Stem-cell early interventional therapy not beneficial for pre-clinical cranial cruciate ligament disease

The most common cause of lameness and ongoing knee arthritis in pet dogs is rupture of the cranial cruciate ligament. Because the injury typically occurs during normal activities, veterinary surgeons suspect that progressive deterioration and weakening of the ligament manifests over time. Pet owners spend thousands of dollars annually for the medical and surgical management of this condition. Following the initial diagnosis of CCL rupture, rupture of the opposite CCL is common, with some studies suggesting a 60 percent rupture rate of the opposite knee CCL within two years.

Morris Animal Foundation-funded researchers from Colorado State University wanted to see if stem cell therapy can be used to reduce the rate of injury in the opposite at-risk knee. The team enrolled 40 medium to large breed, client-owned dogs with unilateral CCL in a randomized, blinded and placebo-controlled clinical trial. The study objective was to determine if injecting stem cells into the remaining “good” joint would slow or prevent further degeneration of the CCL and decrease the risk of a second injury.

Researchers followed the enrolled dogs with periodic clinical rechecks until each patient had confirmed progressive CCL disease or reached 18 months post-treatment. Over the 25-month study period, the stem-cell-treated group had a significantly higher incidence of contralateral CCL rupture in their opposite knee (50 percent versus 15 percent) than the placebo-treated group. These findings suggest that stem cell therapy is not beneficial as an early interventional treatment for pre-clinical CCL disease. In continued research, the team will analyze the study data to determine if stem cell therapy resulted in a significant difference in patient recovery post-knee surgery.

Although stem cell therapy did not prove useful for the specific application tested in this study, the findings are an invaluable addition to our ever-growing knowledge on use of stem cell therapy in our companion animals.
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