



WINN FELINE FOUNDATION

For the Health and Well-being of All Cats

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EFFECTS OVER TIME OF STEM CELL THERAPY IN FELINE CHRONIC ALLERGIC ASTHMA

PROJECT STUDY:

Longitudinal effects of mesenchymal stem cells in feline chronic allergic asthma: Phase II

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Final report summary, W13-002

Asthma is a common inflammatory lower airway disease affecting up to 5% of the pet cat population. There has been recent interest in stem cells to treat lung diseases including asthma. Mesenchymal stem cells (MSCs) are thought to either suppress the immune system or restore a normal immune balance. These investigators examined the effects of intravenous MSCs on the airway inflammation and airway resistance/constriction in an experimental model of feline asthma.

Nine experimentally asthmatic cats were studied. These cats were chosen as they were the most reactive to Bermuda grass allergen (BGA). Cats were chronically exposed to BGA for 9 months prior to entry into the study to mimic the chronic exposure to allergens that our pet cats experience. Cats received either six intravenous infusions of stem cells or a placebo infusion every two weeks.

The results to date revealed that there was no difference noted in airway inflammation or airway hyperresponsiveness at any time point in the study. MSCs were effective in slowing pathologic lung changes. Thus while MSCs do not diminish all the abnormalities associated with feline asthma, they have potential to reduce pathologic structural changes, which no drug to date is capable of doing. The results suggest that feline MSC may be most effective in cases with severe disease as they may require specific signals to be maximally effective. Further studies into methods to enhance MSC function for treatment of chronic asthma by mimicking the specific cytokine signals of severe, acute asthma identified in these studies are warranted.

Summary prepared by Melissa A. Kennedy, DVM, PhD, DACVIM © 2014

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