Public Abstract
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Title:EVALUATION OF THE ANTIENDOTOXIN EFFECTS OF POLYMYXIN B IN A FELINE MODEL OF ENDOTOXEMIA

Introduction: Sepsis, the systemic inflammatory response to infection, is a significant problem in pet cats. Directed, effective therapies for feline sepsis are needed to reduce the high morbidity and mortality associated with this disease. Given that much of the deleterious sequelae of sepsis in cats are due to the release of bacterial endotoxin, a drug which would block the effects of endotoxin may be an effective treatment strategy.
Materials and Methods: We investigated the antiendotoxin effects of an antibiotic called polymyxin B (PMB) in a blinded, placebo controlled fashion, both ex vivo in a feline whole blood culture system and in vivo, using a low-dose endotoxin infusion model of sepsis in cats. Serial measures of systemic inflammation, and cardiovascular stability, were compared between groups.
Results: Ex vivo, PMB significantly decreased endotoxin-induced pro-inflammatory mediator production (notably tumor necrosis factor, TNF) from whole blood. In vivo, endotoxin infusion resulted in the development of fever, low blood pressure, low white blood cell counts and increased circulating activity of TNF. Polymyxin B treatment significantly decreased peak plasma TNF activity and increased white blood cell count, with no adverse effects.
Conclusions: Polymyxin B administration resulted in decreased peak plasma TNF activity and increased white blood cell count in this feline model of endotoxemia, with no adverse effects. Given the apparent safety and anti-endotoxin effects of PMB in this endotoxemia model, a carefully designed, randomized, blinded, placebo controlled clinical trial evaluating the use of PMB in naturally occurring Gram negative feline sepsis should be considered.