Feline Advisory Bureau (FAB)

Pain Management in Cats study

Domestic cats are one of the most common domestic pets, but, as a result of their unique behavioural and physiological makeup, they have been somewhat neglected in development of appropriate techniques for managing pain. Within the last decade a number of studies in feline analgesia, in both laboratory and clinical settings, have addressed this deficiency. This has already led to considerable improvement in clinical pain management in the cat, in particular through better understanding of the use of opiates (morphine-like drugs) in this species. The other major group of analgesic drugs, the non steroidal anti inflammatory drugs or NSAIDs (aspirin-like drugs), also have a role to play in feline analgesia. These have proven more difficult to study in a controlled manner: both clinical and laboratory studies are necessary to characterise any analgesic in order to develop optimum dosing schedules.

Studies funded by the BVA AWF have enabled the development of a humane system for laboratory testing of NSAIDs in cats. Previous studies have demonstrated that NSAIDs are better investigated non-invasively in cats in the laboratory by using a pressure stimulus rather than the thermal stimulus which has proved effective for investigation into opiates. This is probably because pressure produces pain more akin to “incident pain” (pain induced by movement), which is closer to surgical and traumatic pain. There is evidence suggesting that incident pain is, at least in part, modulated by prostaglandins in the spinal cord and should therefore respond to NSAID-type drugs. The investigation was designed to develop a pressure-testing device for feline analgesia studies so that NSAID treatment protocols could be developed specifically for use in the cat, in the way that the thermal testing has been used for opiates.

The first part of the investigation successfully developed a device for the application of a pressure stimulus. This was tested and validated using a group of well handled laboratory cats who cooperated willingly with the daily activity. The process was then developed further using a technique of producing a small focus of local inflammation in the skin which would respond to NSAID treatment. Carprofen, the first NSAID to be tested in this system, and to some extent buprenorphine (an opiate-type drug), prevented inflammatory hyperalgesia (increase in pain from the inflammation), showing the method to be an effective and humane means of laboratory testing of NSAID analgesia in cats. The technique is undoubtedly more acceptable than older methods employing much more invasive methods of producing inflammation.

The aim of the study was met, in that a humane method for laboratory study of NSAID analgesia in cats was developed and validated. It is suitable for further study of analgesics of this type in cats.

Full peer reviewd papers published from this project:

Dixon MJ, Taylor PM, Steagall PVM, Brondani JT, Luna SPL (2007) Development of a pressure nociceptive threshold testing device for evaluation of analgesics in cats. *Research in Veterinary Science* 82, 85-92. doi:10.1016/j.rvsc.2006.03.010

Taylor PM, Steagall PVM, Dixon MJ, Luna SPL, (2007) Carprofen and buprenorphine prevent hyperalgesia in a model of inflammatory pain in cats. *Research in Veterinary Science* (in press). doi:10.1016/j.rvsc.2007.01.007