

Summary of the DVM thesis No 15043 Factually of Veterinary Medicine, Urmia University .

The Academic year: 2024-2025

Author: Parham Ahmadi Parvin

Evaluation of pain following pelvic flexion incision in donkeys by measuring proinflammatory cytokine levels (TNF- α and IL-6).

Absrtact:

Identifying pain and behavioural changes in donkeys can be challenging due to their stoic behaviour, characterised by a lack of clear expressions of pain, coupled with poor knowledge of their normal habits. Interleukin-6 (IL-6) and tumor necrosis factor α (TNF- α) are the two main proinflammatory cytokines that increase during surgical interventions. The purpose of this study was to investigate the possible changes in serum interleukin-6 and tumor necrosis factor alpha following pelvic flexor colotomy and their relationship with the occurrence of clinical pain in donkeys. Seven apparently healthy (by clinical and CBC examinations) castrated male donkeys (*Equus assinus*) were used in this study. The animals were sedated by intramuscular acepromazine injection and anesthesia followed by intravenous chloral hydrate solution. The animals were positioned in dorsal recumbency and following aseptic preparation a pelvic flexure colotomy was performed through linea alba exploratory laparotomy. Flunixin meglumine, a non-steroidal anti-inflammatory drug, was used intravenously for three days after surgery to reduce pain. The occurrence of acute clinical pain was evaluated based on the score of composite pain and facial pain, as well as the amount of serum TNF- α and IL-6 changes before and 3 consecutive days after surgery. A significant increase in composite pain index and facial pain were observed on three days after surgery compared to the day before surgery. A significant increase in the mean levels of TNF- α and IL-6 was seen 3 days after surgery compared to the day before surgery. The specificity and sensitivity of the data for the occurrence of clinical symptoms of pain for TNF- α and IL-6 were 92% and 69% of cases, respectively. Therefore, serum TNF- α measurement can be considered as a reliable factor for evaluation of acute clinical pain in donkeys underwent colotomy.

Keywords:

Pain, Pelvic flexion, Surgery, TNF- α , IL-6