USE OF REMIFENTANIL IN SHEEP ANESTHESIA

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Introduction: Surgical procedures in sheep as an experimental species is actually common; the need of simple anesthetic protocols and to keep patients in the correct anesthetic level with a hemodynamic stability for surgeries, this means hypnosis, muscle relaxation, analgesia and autonomous nervous system protection justifies the study. Remifentanil is a µ agonist therefore it is more analgesic than other opioids, latency period is ultra short (50 seconds) and half-life is 6 minutes, that’s why it must be used intravenously by infusion pump or continuous drop. This drug does not store in fat or muscle, which also differs from other opioids. Combined with Ketamine and Midazolam it allows to reduce 50% of the dose approximately, decreasing recovery time and increasing analgesic potency.

Objective: The aim of this study was to describe the effect of Remifentanil in SMALL RUMINANTS through the evaluation of physiological parameters.

Material and methods: Ten 6 - 7 years-old female crossbreed sheep (Corriedale-Merino) were used. All were premedicated with 0.04 mg/kg Atropine and 0.1 mg/kg Xylazine (2%) IM. Rectal temperature, heart and respiratory rates, pulse, mucous color and capillary refill time were evaluated every 10 minutes during surgical procedures. All of them had food and water suppression before surgery. Induction was done with Ketamine (5 mg/kg) and Midazolam (0.5 mg/kg) both IM., later sheep were intubated. Post-induction Remifentanil was used at an initial dose of 0.5 µg/kg, followed by 3-5 minutes of continuous infusion with 0.25 µg/kg/minute. Maintenance dose was infused with 50% of Ketamine and Midazolam every 20-30 minutes in response to physiological parameters. Rumen and abomasum surgeries, laparotomy and foot amputation were possible using this protocol.

Results: With a significance level of 95%, the heart rate mode was 100 beats/minute (CI: 89.3-109.3) during induction, intubation and after visceral handling. Respiratory rate mode was 28 beats/minute (CI: 27.3-47.3) with higher values during induction and intubation. Oxygen saturation rate mode was 95% (CI: 89.3-97.1) during surgery. Rectal temperature rate variations occurred during visceral handling, mode 39.8 ºC (CI: 38.3-39.3).

Conclusions: Remifentanil proved to be a safe and effective drug when used in anesthetic combinations in surgeries of SMALL RUMINANTS where visceral pain management or visceral handling is important.

Keywords: Remifentanil, sheep, anesthesia, opioid, surgery, pain.