

A New Protocol of Inhalatory Induction of Anaesthesia in Experimental Swine Surgery. A Pilot Study

Mihai Popescu^{1,2}, Corina David², Mihail Pautov³, Radu Ionescu⁴, Dana Tomescu^{1,2}

¹“Carol Davila” University of Medicine and Pharmacy, Department of Anaesthesia and Critical Care, Bucharest, Romania

²Department of Anaesthesia and Critical Care III, Fundeni Clinical Institute, Bucharest, Romania

³„Dan Setlacec” Department of General Surgery and Liver Transplantation, Fundeni Clinical Institute, Bucharest, Romania

⁴Istravet Veterinary Clinic, Bucharest, Romania

Abstract

Induction of Anaesthesia in swine may prove to be difficult because of the differences in anatomy and physiology. Intubation of large animals is especially difficult due to the length of the snout and the relative difficulty of obtaining adequate relaxation. The present study is aimed to compare two induction techniques for tracheal intubation in pigs. The secondary aim was to assess the effectiveness of a new anaesthetic protocol for experimental surgery. For this, six female pigs underwent two liver surgeries each. Induction of anaesthesia was performed either using intravenous propofol and fentanyl (IV intravenous group) or by using Sevoflurane (inhalatory group). The attending anaesthesiologist was asked to grade the ease of intubation from a scale between 1 and 5. Orotracheal intubation was easier to obtain in the inhalatory group ($p=0.00$) and a smaller number of attempts were necessary ($p=0.00$). A lower End-tidal CO₂ after intubation was observed in the inhalatory group ($p=0.05$). There were no differences in both systolic ($p=0.11$) and diastolic ($p=0.72$) arterial pressure and heart rate ($p=0.16$) after induction of anaesthesia between the two groups. Maintenance of anaesthesia was made using Sevoflurane and boluses of fentanyl for adequate analgesia while no muscle relaxants were used. Intravenous morphine and ketoprofen were used for postoperative analgesia. In conclusion, volatile induction of anaesthesia is safe and offers a better view of the larynx in large swine, while the proposed anaesthetic protocol provides adequate anaesthesia for the surgeons and assures comfort to the animals.

Key words: experimental surgery, Swine surgery, volatile induction, intubation