

Comparative Study of Tiletamine/Zolazepam Combination with Xylazine or Medetomidine in Pigs

**Jae–Yeon Lee, Hyun–Chul Jee, Seong Mok Jeong, Chang–Sik Park
and Myung–Cheol Kim***

*College of Veterinary Medicine and Division of Animal Science & Resources,
Research Center for Transgenic Cloned Pigs, Chungnam National University,
Daejeon 305–764, Korea*

Purpose: To compare the quality of anesthesia and cardiorespiratory effects of two intramuscular (IM) anesthetic combinations in pigs.

Materials and Methods: Six Landrace and Yorkshire mixed pigs were used in this study: two females and four males, with a mean body mass of 37.7±8.8. The six animals were used on 8 occasions. Each received two anesthetics in a randomized cross-over design, with an interval of at least 2 weeks before reused. Each group was composed of four pigs. The pigs in the XTZ group received 2.2 mg/kg xylazine hydrochloride IM, and 4.4 mg/kg tiletamine/zolazepam IM. The pigs in the MTZ group received 0.04 mg/kg medetomidine IM, and 4.4 mg/kg tiletamine/zolazepam IM. Cardiopulmonary parameters (heart rate, arterial blood pressure, respiratory rate, rectal temperature and arterial blood gases) were monitored pre-anesthesia, 5, 10, 15, 30, 45, 60 and 70 minutes after administration of drugs. Induction time, anesthesia time, standing time and walking time were recorded for each pig. Score of anesthetic effects (sedation, analgesia, muscle relaxation, posture and auditory response) were evaluated every 15 minutes during anesthesia.

Results: The anesthesia of all pigs was successful. Both drug combinations provided a smooth induction and good immobilization. In both groups, mean HR significantly decreased after 5 minutes and remained consistently baseline for 70 minutes, but there was no significant difference between the XTZ group and the MTZ group. The arterial pressure was significantly higher in the MTZ group compared with the XTZ group. RR significantly increased with time in both groups. The arterial oxygen (PaO₂) and the SO₂ was significantly decreased from baseline in both groups. In the RR and blood gases, there was no significant difference between the XTZ group and the MTZ group.

There was no significant difference between the XTZ group and the MTZ group in score of anesthetic effects, induction time, anesthesia time and recovery times.

Conclusions: Anesthetic effects between the XTZ group and the MTZ group were similar. However, the cardiovascular effects was greater in the MTZ group than those in the XTZ group.

Keywords: anesthesia, pig, xylazine, medetomidine, tiletamine/zolazepam

* Corresponding author: mckim@cnu.ac.kr