

MEETING ABSTRACTS

THE EFFECT OF KETAMINE, AN NMDA-RECEPTOR ANTAGONIST, ON GASTRIC MYOELECTRIC ACTIVITY IN EXPERIMENTAL PIGS

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Preclinical studies in experimental pigs are carried out mostly under general anaesthesia. Ketamine is commonly used for introduction to anaesthesia. However, concerns exist, whether ketamine, an NMDA-receptor antagonist, influences gastric motor function. The aim of this study was to investigate porcine gastric myoelectric activity by means of electrogastrography (EGG). Seventeen female animals (mean weight 36.2±3.8 kg) were enrolled. Drugs used as an introduction to anaesthesia were: Group A (n=5): medetomidine 0.1 mg/kg i.m.; butorphanol 0.3 mg/kg i.m.; midazolam 0.3 mg/kg i.m.; Group B (n=6): azaperon 2.2 mg/kg i.m.; Group C (n=6): ketamine 20 mg/kg i.m.; azaperon 2.2 mg/kg i.m., all groups followed by i.v. propofol (repeated one-mL-boluses, 10-12 mL in total). EGG recording started 15 min. after the introduction administration and lasted 30 min. Results were evaluated as dominant frequency of gastric slow waves (DF) and EGG power (areas of amplitudes). In total, 510 one-minute EGG intervals were assessed. DFs were (mean ± standard deviation): 1.4±0.4 (Group A), 1.3±0.3 (Group B) and 0.2±0.1 cycles per min. (Group C). The difference between group C and groups A and B was statistically significant (p<0.001). Median power (IQR) was 0.13 (0.02-0.44; Group A), 0.13 (0.03-0.54; Group B) and 0.30 V² (0.07-1.44; Group C). The difference between groups A and C was of borderline significance (p=0.066; type 2 error beta 0.295). In conclusion, ketamine, even in a single low-dose, affected myoelectric function of the porcine stomach. Therefore, it should be avoided in gastrointestinal motility studies in experimental pigs.

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