Effect of isoflurane and halothane on myocardial function in healthy dromedary camels as assessed by cardiac troponin I

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Abstract:

The effect of general anaesthesia with isoflurane and halothane on serum concentration of cardiac troponin I (cTnI) in healthy dromedary camels was determined. Six healthy female camels were premedicated with xylazine and anaesthesia was induced with ketamine and maintained with either isoflurane (isoflurane group, n=6) or halothane (halothane group, n=6). A washout period of 2 weeks was allowed between the two anaesthetic protocols. Nine blood samples (T0-T8) were obtained from each camel in heparinised tubes to determine arterial and venous blood gases and pH, and in plain tubes to obtain serum for cTnI analysis. Blood samples were collected immediately before anaesthesia (T0), 20min after xylazine administration (T1), 20min after ketamine administration (T2), 60min of inhalation anaesthesia (T3), 40 and 80min during recovery (T4 and T5) and 24, 48 and 72h after recovery (T6-T8). In isoflurane group, serum cTnI concentrations did not rise above 0.04ng/mL. On the other hand, in halothane group, serum cTnI concentrations increased markedly after 40 and 80min of recovery to be 0.20 and 0.47ng/mL, respectively. Serum cTnI concentrations remained significantly elevated at 24h and 48h after recovery. Comparing halothane group to isoflurane group, mean serum concentration of halothane cTnI was significantly higher at 40 and 80min of recovery and at 24h and 48h after recovery. In conclusion this study proved that halothane has marked effect on cardiomyocytes in healthy camels compared to isoflurane. Therefore, the use of halothane should be restricted in camels with suspected cardiac diseases.

Keywords:

Anaesthesia, camels, cardiac troponin I, halothane, isoflurane

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