USE OF TWO SMARTPHONE-BASED DEVICES TO MONITOR ECG IN FALLOW DEER (*DAMA DAMA*)

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Short Abstract

Smartphone ECG devices are valuable tools to detect some common arrhythmias in dogs, cats, horses and cattle (BONELLI *et al*., 2018; KRAUS *et al.*, 2016; VEZZOSI *et al*., 2018). They also allowed to assess heart rate and rhythm in Sika deer, although ECG waveforms were slightly different from standard ECG (GONZALES-JASSI *et al.*, 2021). This study aims to evaluate cardiac electrical activity through two smartphone instruments, Kardia (Alivecor Inc., U.S.A) and 1-lead ECG eKuore (Chip Idea Electronics SL, Spain), in 16 fallow deer (*Dama dama*) chemically immobilised by intramuscular injection of detomidine 0.2mg/kg (Sedaquick 10mg/ml, Fatro, Italy), ketamine 2mg/kg (Nimatek 100mg/ml, Dechra, Italy) and azaperone 0.3mg/kg (Stresnil 40mg/ml, Elanco, Italy). At least 3-minutes ECGs were simultaneously acquired by both devices on animals positioned in right lateral recumbency. Recordings were considered acceptable if isoelectric line and waveforms were clearly identified, without artifacts. Rhythm, heart rate, duration, amplitude of P wave and QRS complex, and duration of each interval were manually measured. Acceptable Kardia and eKuore recordings were 16 out of 16 cases (100%) and in 13 out of 16 (81%), respectively. In fallow deer, ECG recording was feasible and easily acquired with both instruments, and Kardia seems to perform better than eKuore. Given to their compact size and their use with a smartphone, these devices seem to be promising tools for ECG monitoring in wild species even in field condition. Since they enable fast and easy ECG monitoring, they could be an additional tool for evaluating cardiac activity during field anaesthesia.

References

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