

CATEGORY: CARDIOVASCULAR

Comparative Assessment of Electrocardiographic Parameters of Some Birds in Ilorin

Azeez O.M¹, Basiru Afisu¹, Adah AS¹, Olaifa FH¹, AmeenSA², Ambali HA², Bolaji M³ and Balogun RB¹

1. Department of Veterinary Physiology and Biochemistry, University of Ilorin, Ilorin, Nigeria

2. Department of Veterinary Medicine, University of Ilorin, Ilorin, Nigeria

3. Department of Veterinary Pathology, University of Ilorin, Ilorin, Nigeria

Corresponding Author: Dr O.M Azeez misibisol@yahoo.com

Introduction: Cardiovascular disease is an important cause of death in commercial turkeys, meat-type chicken and other birds. Spontaneous turkey cardiomyopathy (STC; round heart), ruptured aorta and sudden death account for over 50% of the "normal" mortality in tom turkeys. Flip-over (sudden death syndrome) and pulmonary hypertension, leading to right ventricular failure, cause high losses in broiler and roaster chickens. In both chickens and turkeys these condition are related directly to growth rate. The diagnosis is usually based on history and gross examination. This work was designed to assess the electrocardiographic (ECG) parameters of various birds as alternative/additional means of clinical diagnosis.

Objective: To identify every aspect of the Lead II ECG wave form. The electrocardiogram is a useful tool in avian medicine as it can be utilized to measure heart rate and to detect arrhythmias, cardiac chamber enlargement, and electrical conductance abnormalities

Method: EDAN 10 Veterinary electrocardiographic equipment made in China; with a 200 mm/s paper speed and a sensitivity of 100 mm/mV was used to measure the ECG. The five alligator clip electrodes were fixed directly to the skin under the feather- on the forearms (muscular part of the wing), on the hind limbs above the stifle joint, and the heart as described earlier by Azeez et al, (2017). The EDAN was connected to the laptop and information about each bird was recorded and saved. Birds considered include

Turkey, Chinese geese, Laying birds (chicken), point of lay birds and domestic ducks. They were all carefully restrained. 5 birds from each group was used

Results: The ECG exhibited positive P wave, inverted (Q) RS and positive T wave in all of them. S-S interval was regular in turkey and duck, irregular in chicken and Chinese geese. The PR interval in the Laying birds and Broilers were very longer with overlap by QRS. The (Q) RS was shorter (29-44ms) in the chicken with very short amplitude, longer (50-65ms) in turkey and duck with longer amplitude. No significant difference in the QRS within the groups. QT interval was longer in turkey, geese and duck (297-456ms) but shorter in chicken.

Conclusions: In birds, the mean electrical axis is negative (and thus the QRS wave is inverted in lead II); however, in many other respects the avian ECG is similar to mammals. We suspect that turkey geese and duck are heavier birds and require more calcium ion which have an effect on the heart compared with chicken. As expressed by their prolonged QT and higher heart rate.

Keywords: Electrocardiographic parameters, birds, cardiovascular disease