STUDIES ON USES OF QUINIDINE SULFATE FOR TREATMENT OF ATRIAL FIBRILLATION IN HEAVY HORSES

Yuriko OKA

Veterinary Hospital
Faculty of Veterinary Medicine
Hokkaido University, Sapporo 060, Japan

Heavy horses with atrial fibrillation were dosed with quinidine sulfate in accordance with a planning procedure based on pharmacokinetics, and the planning procedure was compared with the usual procedure of measuring serm quinidine concentrations by substrate-labelled fluorescent immunoassay (SLFIA).

Seventeen heavy horses of which the estimated time of atrial fibrillation was known before treatment were investigated to determine the total dosage of quinidine sulfate and the time demanded to induce defibrillation

1) Four heavy horses with atrial fibrillation were treated by the usual procedure. Patient no. 1 produced an adverse reaction. At the time of defibrillation in patients nos. 2, 3 and 4, the serum quinidine concentrations were 3.295, 4.170 and 5.265 μg/ml, respectively.

2) The movement of serum quinidine concentrations in 5 healthy horses without atrial fibrillation was analysed by the one-compartment model. By means of the pharmacokinetic parameters, the procedure of quinidine administration was planned.

3) Four heavy horses with atrial fibrillation were treated by the planning procedure. They were defibrillated between 3 and 5 hours after the first dosage without any adverse reaction. At the time of defibrillation in patients nos. 5, 6, 7 and 8, the serum quinidine concentrations were 2.507, 5.421, 3.729 and 3.744 μg/ml, respectively.

4) Concerning the relation between the length of time atrial fibrillation was present before treatment and the total dosage and time demanded to defibrillate, total dosage and the amount of time required to defibrillate heavy horses which had had atrial fibrillation more than one month before treatment were more than those of heavy horses which had had atrial fibrillation less than one month before treatment.