A high oxfendazole dose to control porcine cysticercosis: Pharmacokinetics and tissue residue profiles


Oxfendazole (OFZ) is efficacious for porcine cysticercosis at 30 mg/kg. OFZ is not registered to be used at this dose. The assessment of the OFZ and metabolites [(fenbendazole sulphone (FBZSO2), fenbendazole (FBZ)] plasma pharmacokinetic and tissue residue profiles after its oral administration to pigs and the withdrawal period for human consumption were reported. Forty-eight pigs allocated into two groups received OFZ (30 mg/kg) orally as a commercial (CF) or as experimental formulation (SMF). Samples (blood, muscle, liver, kidney and fat) were collected over 30 days post-treatment and analyzed by HPLC. OFZ was the main compound recovered in plasma, followed by FBZSO2 and low FBZ concentrations. OFZ AUC0-LOQ (209.9±33.9 μg·h/ml) and Cmax (5.40±0.65 μg/ml) parameters for the CF tended to be higher than those for the SMF (AUC0-LOQ: 159.4±18.3 μg·h/ml, Cmax: 3.80±0.35 μg/ml). The highest total residue (OFZ+FBZSO2+FBZ) concentrations were quantified in liver, followed by kidney, muscle and fat tissue. FBZSO2 residue levels were the highest found in liver, followed by kidney, muscle and fat tissue. FBZSO2 residue levels were the highest found in muscle (0.68±0.39 μg/g) and fat (0.69±0.39 μg/g). In liver and kidney the highest residues corresponded to FBZ (5.29±4.36 μg/g) and OFZ (2.86±0.75 μg/g), respectively. A withdrawal time of 17 days post-treatment was established before tissues are delivered for human consumption.

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