Why the research is needed

Dantrolene is a muscle relaxant commonly used to prevent and/or treat horses with muscular disorders (specifically azoturia or 'Monday morning disease'). There is no preparation specifically licensed for use in horses but under the prescribing rules ('cascade') equine veterinarians are able to use a preparation licensed in man, ‘Dantrium’ (Proctor & Gamble Pharmaceuticals). The aim of these studies was to develop advice for veterinarians and trainers on the use of this medication.

Overview of the studies

We worked collaboratively with a group in the United States led by Dr. Rick Arthur DVM (Equine Medical Director, School of Veterinary Medicine, University of California) to accelerate the provision of this advice. In essence, the horse part of the work, the 'animal administration', was carried out in the US with samples shipped to HFL Sport Science in the UK for analysis. It is important to note that this study was subject to and approved by standard ethical review process http://safetyservices.ucdavis.edu/IACUC. The work also formed part of the 2012 programme to develop advice for 'priority substances' by the European Horserace Scientific Liaison Committee (EHSLC). Working as a member of the EHSCLC we reduce the overall number of animal studies needed and prevent spending unnecessary time and money through pooling of information. We work towards harmonisation on the output, usually a Detection Time, 'DT', and it’s underlying screening limit both within Europe and beyond, via our input into the IFHA’s International Screening Limits. Each of 12 horses involved, maintained as an exercised herd, were administered an oral dosing regimen of 3 consecutive daily doses of dantrolene at a dose rate of 500 mg per dose. This dose was selected followed consultation with UK and overseas vets.

Outcome

Samples were shipped from the study in March 2012 and were analysed at HFL. After extensive discussion at the EHSCLC, a Detection Time of 96 hours for 3 consecutive oral daily doses of 500 mg dantrolene, ‘Dantrium’ was agreed by the BHA Board in December 2013 and published. This DT and accompanying screening limit was proposed to the International Federation of Horseracing Authorities’ Advisory Council on Equine Prohibited Substances and Practices in May 2014.