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Book of Abstracts

O-1065**Characterization of a new albendazole resistant *Fasciola hepatica* isolate**

Maria Martinez-Valladares^{1,2}, Elora Valderas-García^{3,4}, Verónica Castilla Gómez de Agüero^{5,6}, Marta González-Warleta⁷, Laura Ceballos⁸, Juan Pedro Lirón⁸, Rodrigo Sanabria⁹, Cesar Pruzzo¹⁰, Luis Ignacio Alvarez⁸

¹Instituto de Ganadería de Montaña (CSIC-Universidad de León), Departamento de Sanidad Animal (Department of Animal Health), León, Spain. ²Departamento de Sanidad Animal (Department of Animal Health), Facultad de Veterinaria, University of Leon, León, Spain. ³Instituto de Ganadería de Montaña (CSIC-Universidad de León), Departamento de Sanidad Animal (Department of Animal Health), León, Spain. ⁴Departamento de Sanidad Animal (Department of Animal Health), Facultad de Veterinaria, University of Leon, León, Spain. ⁵Instituto de Ganadería de Montaña (CSIC-Universidad de León), Departamento de Sanidad Animal (Department of Animal Health), León, Spain. ⁶Departamento de Sanidad Animal (Department of Animal Health), Facultad de Veterinaria, University of Leon, León, Spain. ⁷Laboratorio de Parasitología, Centro de Investigaciones Agrarias de Mabegondo, AGACAL, A Coruña, Spain. ⁸Laboratorio de Farmacología, Centro de Investigación Veterinaria de Tandil (CIVETAN), UNCPBA-CICPBA-CONICET, Facultad de Ciencias Veterinarias, Tandil, Argentina. ⁹Laboratorio de Parasitología, Facultad de Ciencias Veterinarias, Universidad Nacional de la Plata (UNLP), La Plata, Argentina. ¹⁰Laboratorio de Parasitología, Facultad de Ciencias Veterinarias, Universidad Nacional de la Plata (UNLP), La Plata, Argentina

Abstract

The infection by *Fasciola hepatica* affects mainly ruminants although is present in a wide variety of species including humans. Fasciolosis control is mainly based on triclabendazole administration, the main drug indicated in humans. Albendazole (ABZ) is used against nematode and liver fluke infections in ruminants. The misuse of these drugs has led to the appearance of anthelmintic resistance. In this study, we characterized an ABZ resistant isolate and evaluate the use of a combined treatment to improve treatment efficacy. The isolate was collected from a slaughterhouse in Argentina, maintained under laboratory conditions and identified by means of the egg hatch test (EHT). Using these eggs metacercariae were produced to infect sheep artificially. When flukes reached the adult stage, animals were divided into two groups, one treated with ABZ (7.5 mg/kg bw) and another with a placebo. All sheep were slaughtered at day 14 post-treatment to collect and count the number of flukes. The resistance of ABZ was confirmed with a reduction of 44% of adult flukes in the treated group. At the necropsy, adult flukes from the livers and eggs from the gall bladders, both from sheep treated with the placebo, were collected. Adult flukes were maintained alive in RPMI medium to let them to excrete eggs for 24 hours. EHT was conducted and different results were observed with the two egg sets. The EHT performed with eggs collected directly from gall bladder confirmed the resistant status of the isolate. However, the EHT with eggs recovered from flukes resulted in a susceptible phenotype, showing that only previously laying eggs (in bile) can express the resistant phenotype. After producing more

metacercariae from this resistant isolate, we are testing *in vivo* the efficacy of a combined treatment to improve its efficacy. The results will be presented during the WAAVP meeting.

Presenting author biography

Senior Researcher working at the University of Leon, Spain, Institute for Mountain Stock Farming. My principal research is based on the study of methods for the control of helminth infectious, mainly in ruminant. Under this context I am focused on the study of anthelmintic resistance phenomenon including new methods for the early detection, mechanisms involved in its development and new strategies to avoid its spread. I am working also on the discovery of new molecules with anthelminitic activity. I was granted by WAAVP with the “Peter Nansen Young Scientist Award” in 2019.