Larvicidal Efficacy of Fenbendazole Against a Macrocyclic Lactone-Resistant Isolate of Parascaris equorum in Foals

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Five days of treatment with fenbendazolea (10 mg/kg) was 96.3% effective as an ascarid larvicide against a confirmed macrocyclic lactone (ML)-resistant isolate of Parascaris equorum. Adult ascarid infection was completely prevented in four of eight foals. Authors’ addresses: East Tennessee Clinical Research Inc. Rockwood, Tennessee 37854 (Reinemeyer and Prado); Intervet Schering-Plough Animal Health, Summit, New Jersey 07901 (Vaala); e-mail: wendy.vaala@sp.intervet.com. *Presenting author. © 2010 AAEP.

1. Introduction
Parascaris equorum, the most pathogenic parasite of juvenile equids, requires effective larvicidal anthelminitics to control all stages of ascarid infections. Failure of ML anthelmintics to reduce P. equorum egg counts in foals has been reported worldwide. This study evaluated the larvicidal efficacy of a 5-day regimen of fenbendazole (FBZ) against an ivermectin (IVM)-resistant population of P. equorum in foals.

2. Materials and Methods
Sixteen foals were infected orally with larvated eggs of an IVM-resistant isolate of P. equorum and randomly allocated to one of two treatment groups. Group 1 foals received oral FBZ (10 mg/kg) once daily for 5 days beginning on day 11 after infection. Group 2 foals received oral IVM (200 µg/kg) on day 15 after infection. Once fecal egg counts (FECs) confirmed patent ascarid infections, foals were euthanized, and Parascaris specimens were recovered. Treatment effect on P. equorum FECs over time and adult Parascaris worm burdens were evaluated by analysis of variance. Foals were euthanized following a protocol consistent with guidelines published in 2007 American Veterinary Medical Association (AVMA) Guidelines for Euthanasia and approved by the Institutional Animal Care and Use Committee (IACUC) for East Tennessee Clinical Research.

3. Results
The geometric mean egg count of FBZ-treated foals was significantly lower (p < 0.001) than that of IVM-treated foals and represented a 99.5% reduction in FECs. Mean numbers of adult Parascaris recovered after death were significantly lower (p < 0.0018) in FBZ-treated foals, resulting in 96.3% efficacy.

4. Discussion
Five consecutive days of FBZ at 10 mg/kg is highly effective as a Parascaris larvicide.

Acknowledgments
This study was funded by Intervet Schering Plough Animal Health (Summit, NJ) and conducted by Dr. Craig Reinemeyer, East Tennessee Clinical Research (Rockwood, TN).

Footnote
*Panacur PowerPak, Intervet Schering Plough, Summit, NJ.