Effect of Oral Gallium Nitrate on the Fecal Shedding of Virulent Rhodococcus equi

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1. Introduction
Attempts to reduce fecal shedding of Rhodococcus equi by the mare and effects of the mare’s fecal R. equi concentration on airborne concentrations in the foaling stall have not been previously reported.

2. Materials and Methods
Twenty-one mares were treated with oral gallium nitrate (9.2 mg/kg) or placebo in a randomized double-blind study. Fecal samples were collected at day 320 of gestation, the week before foaling, and the week after foaling, and air samples were collected in the stall within 6 h post-foaling. The concentration of virulent R. equi was determined for each sample.

3. Results
There were significant (p < 0.05) effects of treatment. At sample times 1 and 2, there were no significant differences between groups. At time 3, concentrations of virulent R. equi were significantly lower in the treatment group (p < 0.05) compared with control. Effects of time depended significantly on groups. For the control group, there were no significant effects of time. For the treatment group, concentrations tended to decrease over time, and concentrations at time 3 were significantly (p < 0.05) lower than those concentrations at time 1. Virulent R. equi was detected in 12 of 39 samples in concentrations ranging from 1 to 4 cfu/m³. No significant differences were determined between groups for airborne concentrations of virulent R. equi.

4. Discussion
Treatment of mares with oral gallium nitrate significantly reduced fecal concentrations of virulent R. equi over time, but it had no impact on airborne concentrations of R. equi shortly after foaling. Financial support was provided by the ACVIM Foundation. Financial and technical support was provided by the Link Equine Research Endowment. Part of this data was presented at the 2011 ACVIM Symposium in Denver, Colorado.