Efficacy of Furosemide for Prevention of Exercise-Induced Pulmonary Hemorrhage in Thoroughbred Racehorses

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1. Introduction
The objective of this study was to evaluate the efficacy of furosemide for prevention of exercise-induced pulmonary hemorrhage (EIPH) in Thoroughbred racehorses under typical racing conditions.

2. Materials and Methods
This was a randomized, placebo-controlled, blinded, cross-over field trial using 167 Thoroughbred racehorses. Horses were randomly allocated to race fields of 9–16 horses each and raced twice, 1 wk apart, with each of the two races consisting of the same race field and distance. Each horse received furosemide (500 mg, IV) before one race and a placebo (saline solution) before the other race, and severity of EIPH was scored on a scale from 0 to 4 after each race by means of tracheobronchoscopy. Data were analyzed using several forms of multivariable logistic regression.

3. Results
Horses were substantially more likely to develop EIPH (severity score ≥ 1; odds ratio, 3.3–4.4) or moderate to severe EIPH (severity score ≥ 2; odds ratio, 6.9–11.0) after administration of saline solution than after administration of furosemide. In addition, 81 of the 120 (67.5%) horses that had EIPH after administration of saline solution had a reduction in EIPH severity score of at least 1 when treated with furosemide.

4. Discussion
Results of this study showed that prerace administration of furosemide decreased the incidence and severity of EIPH in Thoroughbreds racing under typical conditions in South Africa. As such, its use in racehorses might be justifiable, assuming that other regulatory and policy issues important to the integrity of the sport are adequately addressed.