Cloprostenol: Something More Than a Luteolytic Drug

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Mares with large follicles at the time of cloprostenol treatment may ovulate soon after induced luteolysis. If the interval from cloprostenol to ovulation is <7 days, pregnancy rates are lower than in those with longer intervals. In addition, cloprostenol-treated mares are more likely to twin ovulate than non-treated mares. Authors’ addresses: Warren House Farm Equine Fertility Clinic, Brownhills, WS8 6L5, United Kingdom (Cuervo-Arango, Newcombe); and Departamento de Cirugía y Medicina Animal, Facultad de Ciencias Experimentales y de la Salud, Universidad Cardenal Herrera-CEU, Moncada, 46113, Spain (Cuervo-Arango); e-mail: juan.cuervo@uch.ceu.es. © 2009 AAEP.

1. Introduction
Prostaglandin F₂₀ (PGF) and its analogs are widely used in equine reproductive practice. The interval from PGF treatment to ovulation (ITO) varies greatly, with a range from 2 to 16 days. Clinical observations suggest that mares mated and ovulated soon after PGF treatment may have poor fertility.

2. Materials and Methods
Reproductive records of 329 cyclic Thoroughbred mares were analyzed retrospectively. The following parameters were analyzed: (1) use of cloprostenol; (2) ITO; and (3) number of ovulations per cycle. According to these parameters, mares were classified into four groups: (1) mares with spontaneous ovulations (n = 57); (2) mares treated with cloprostenol and ITO = 4–7 days (n = 77); (3) ITO = 8–10 days (n = 89); and (4) ITO ≥ 11 days (n = 106). Differences in pregnancy (PR) and multiple ovulation (MO) rates among groups were analyzed using the chi-square test.

3. Results
PR for groups 1–4 were as follows: 73.7%, 46.7%, 64%, and 71.7%, respectively. PR for group 2 was significantly lower (p < 0.05) than PR for groups 1, 3, and 4. Groups 1 and 2 had lower (p < 0.05) MO rates (24.6% and 20.8%, respectively) than groups 3 and 4 (40.4% and 44.3%, respectively).

4. Discussion
Ovulation soon after PGF-induced luteolysis is detrimental to pregnancy rates. Although it cannot be substantiated by this study, the authors hypothesized that the lower PRs are probably caused by greater uterine inflammation and/or defective oocytes that may have aged during the longer development time of diestrous follicles. The drop in progesterone after PGF-induced luteolysis allows luteinizing hormone (LH) concentration to rise earlier during follicular development. This may explain the increased overall MO rate observed in cloprostenol-treated mares.

Research Abstract

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