

Enrofloxacin to Control *Anaplasma marginale* Infections

A. A. GUGLIELMONE,^a O. S. ANZIANI,^a
A. J. MANGOLD,^a M. M. VOLPOGNI,^b AND
A. VOGEL^c

^aEstación Experimental Agropecuaria Rafaela
Instituto Nacional de Tecnología Agropecuaria
- CC 22

CP 2300 Rafaela, Santa Fe, Argentina

^bFacultad de Agronomía y Veterinaria
Universidad Nacional del Litoral
Kreder 2805

CP 3080 Esperanza, Santa Fe, Argentina

^cBayer Argentina S.A.

División Veterinaria

General Rivas 2466

CP 1417, Buenos Aires, Argentina

Anaplasmosis (*Anaplasma marginale*) is a common disease in South American cattle raised north to 33°S. Oxytetracycline or imidocarb is usually applied to treat clinical cases of anaplasmosis. It has been recently reported that the fluorquinolon enrofloxacin was effective in controlling infections with *A. marginale* in South Africa.¹ This report describes an experiment to control anaplasmosis in the increasing parasitemia phase of the disease.

Fifteen Holstein steers (15 months old), free of antibodies against *A. marginale* (card agglutination test)² were inoculated with 200 million erythrocytes infected with the *A. marginale* strain S1P (no appendages)³ of Argentinean origin. Eight steers were randomly allocated to the treated group (TG) and medicated with 10 mg of enrofloxacin per kg of body weight for two consecutive days when the parasitemia reached a minimum of 3% of the red cells. The other 7 steers formed the control group (CG). They were treated with 20 mg per kg of body weight of a long acting oxytetracycline when the hematocrit index reached a value of 15% to avoid deaths.

The steers of the TG developed a parasitemia of at least 3% of the red cells in a mean period of 22.9 ± 2.03 days, range: 21-27 days. The average parasitemia \pm SD and range on the day of the first treatment with enrofloxacin was $4.5 \pm 2.27\%$ (3.0-10.0%). Seventy-four hours after the second treatment, the parasitemia values were $0.9 \pm 0.76\%$ (0.1-2.0%) ($p < 0.01$, "t" test with angular transformation; the figures presented are nontransform values). The parasitemia found 72 h after the second enrofloxacin treatment was also significantly lower ($p < 0.01$) than that found in the CG ($10.0 \pm 6.14\%$, 1.0-20.0%) on the equivalent day. Six of the steers of the CG were treated with oxytetracycline due to severe anemia on days 25 to 30

after *A. marginale* inoculation. The hematocrit index had an average value of 27% on day 27 postinfection in the TG, while this value for the CG was 17% on days 29 and 30 postinfection.

Enrofloxacin was able to inhibit the parasitemia increase of *A. marginale* S1P, hence avoiding a drastic drop in the hematocrit level in the TG. This confirms that enrofloxacin may have a potential role to control *A. marginale* cattle infections. Additional studies are needed to know if enrofloxacin is useful to control anaplasmosis in cattle under peremptory risk of death (hematocrit 15% or lower).

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