Luc DUREL et al., J Vet Sci Technol 2018, Volume 9
DOI: 10.4172/2157-7579-C2-040

Hair cortisol concentration in dairy cows affected by bovine interdigital dermatitis, and impact of ketoprofen and ceftiofur on clinical signs and milk production preliminary results

Luc Durel[1], Bertha Clementina Hernandez[2], Apolo Adolfo Garcia[2], Marcela Gonzalez De La Vara[3], Susana Hernandez[3], Dionisio Garcia Carrasco[4] and **Alvaro Pedrosa Carillo[4]**

[1]Virbac GMBO, France
[2]Universidad Veracruzana, Mexico
[3]Universidad Nacional Autonomá de Mexico, Mexico
[4]Virbac Mexico, Mexico

Hair Cortisol (HC) is a relevant biomarker of the activation of the Hypothalamic-Pituitary-Adrenal (HPA) axis in clinically compromised cows. The objective of this exploratory study was to follow up the evolution of HC in dairy cows affected by interdigital dermatitis, and the impact of two injectable ceftiofur-based medicine (ACTINOXEL or CURACEF DUO, both Virbac Mexico), one of them being formulated with ketoprofen, on clinical signs and milk production. 20 cows from a commercial dairy herd in the state of Jalisco, Mexico, were enrolled in this study, based on locomotion score≥2 and diagnostic of footrot (d0). Animals were randomly allocated to groups ACT or CUR, and were dosed 1mL/50 kgBW, s.i.d., for 3 to 5 days. Animals were observed daily for lameness, and a final judgement was made on d+6. Milk records were later collected from d-5 to d+5. Hairs were collected on d0 and d+15. HC concentration was analyzed with a commercial ELISA test kit (DRG International Inc., USA). HC concentrations on d+15 vs. d0 did not significantly differ for group ACT, whereas HC tend to decrease in group CUR ($p=0.08$, Wilcoxon). On d+6, more (n.s.) animals were considered clinically cured in the CUR group than in the ACT group (9/10 vs. 7/10, respectively), and more (n.s.) animals recovered after a 3 day treatment course (8/10 vs. 5/5). Due to the premature culling of several animals for various causes, production data of all animals of group ACT, and of 2 animals of group CUR were no longer available for analysis. In this last group, individual daily milk production was significantly higher ($p<0.01$, Wilcoxson) on d5 than it was for the overall period d-5 to d0. Difference in median production was 2.2 L/day. The tested ceftiofur/ketoprofen combination tends to decrease HC concentration in cows with footrot, with promising clinical outcomes.

Recent Publications

1. Burnard, C. et al. (2017) Hair cortisol and its potential value as a physiological measure of stress response in human and non-human animals. Anim. Prod. Sci. 57(3):401-414
2. Burnett, T.A. et al. (2015) Relationship of concentrations of cortisol in hair with health, biomarkers in blood, and reproductive status in dairy cows. J. Dairy Sci. 98(7), 4414–4426.
3. Comin, A. et al. (2013) Hair cortisol as a marker of hypothalamic-pituitary-adrenal axis activation in Friesian dairy cows clinically or physiologically compromised. Livest. Sci. 152 (1), 36–41.
4. Gleerup, K.B. et al. (2015) Pain Evaluation in Dairy Cattle. Appl. Anim. Behav. Sci. 171, 25–32.
5. Shearer, J.K. et al. (2013) Assessment and management of pain associated with lameness in cattle. Vet. Clin. North Am. Food Anim. Pract. 29(1), 135–56.

luc.durel@virbac.com