

Anti-nociceptive and physiologic effects of cannabidiol in horses

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Cannabidiol (CBD), is a nutraceutical proven to modulate pain in some species. Horses possess cannabinoid receptors but efficacy of CBD as an anti-nociceptive has not been investigated (Galliazzo et al 2021). The aim of this study was to investigate the effect of CBD on thermal and mechanical thresholds and physiologic variables in horses. Six horses (3 geldings and 3 mares) were enrolled in a prospective, randomized, masked cross-over design. Horses received CBD oil 3 mg kg⁻¹ or placebo (sesame oil) orally every 24 hours for 3 days. Thermal and mechanical thresholds were determined at baseline, 4 hours, and 12 hours post treatment administration on each day. Physiologic variables including HR, f_R , and rectal temperature were also recorded at the same time points. Data were analyzed using a generalized mixed model with significance set at $p < 0.05$. A student's t test was used to compare time points. Thermal threshold was elevated in the CBD group above baseline and placebo on Day 2 at 12 hours and on Day 3 at 4 hours ($p \leq 0.036$ for all). There was no effect of treatment on mechanical threshold. Overall least squares mean (LSM) (95% CI) f_R was 17 (15 - 20) and 18 (15 - 21) breaths per minute in the CBD and placebo groups, respectively ($p = 0.033$). There was no effect of treatment on HR or rectal temperature. CBD provided anti-nociception as measured by thermal threshold. Oral administration of CBD appears safe and well tolerated at the dose studied.

References

Galliazzo G, De Silva M, Giancola F, et. al. (2021) Cellular distribution of cannabinoid-related receptors TRPV1, PPAR-gamma, GPR55, and GPR3 in the equine cervical dorsal root ganglia. Equine Vet J. 54, 788-98.