

# EquineReview

**Introduction:** This month's Equine Review presents papers on a large prospective European study of the efficacy and safety of the glucocorticoid prodrug ciclesonide, changes in the faecal microbiota of horses hospitalised for colic and the comparison of chlorhexidine and alcohol-based antiseptics of the equine distal limb.

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**Kate McGovern** BVetMed CertEM (Int.Med) MS DACVIM DipECEIM MRCVS, Clinical Director, Donnington Grove Veterinary Group, Oxford Road, Newbury, Berks, RG14 2JB. [katemcgovern@donningtongrove.com](mailto:katemcgovern@donningtongrove.com)

## Efficacy and safety of inhaled ciclesonide for the treatment of severe equine asthma

Ciclesonide is a glucocorticoid prodrug that is registered for treatment of allergic rhinitis and asthma in humans. It is de-esterified in the lungs to desisobutyryl-ciclesonide, which has a 12 times higher binding affinity for glucocorticoid receptors than dexamethasone. Inhaled corticosteroids are desirable in treating equine asthma as they lower the potential for systemic side effects.

Pirie et al's (2021) study hypothesis was that inhaled ciclesonide, with a novel inhalation technology (Aservo, Equihaler), would improve clinical signs of asthma compared with a placebo, and would have a good safety profile. A multicentre prospective randomised double-blinded clinical trial was performed at 24 separate sites, using client owned horses that had moderate to severe equine asthma. Horses received inhaled ciclesonide or an inhaled placebo solution.

Asthma was assessed using a previously described scoring system with 224 horses enrolled. Primary analysis revealed a treatment response rate of 73.4%, compared with 43.2% for the placebo group. The reduction in score was greater in horses with severe clinical signs at the time of enrolment, compared with horses with moderate clinical signs. There was no such difference in the placebo group. The Equihaler® was well tolerated. The number of adverse effects was low and equally distributed between groups. The authors concluded that the treatment was efficacious and safe.

## Changes in the faecal bacterial microbiota during hospitalisation of horses with colic

Stewart et al (2021) compared faecal bacterial microbiota of horses presenting to an equine hospital with colic at their admission, on day 1 and on day 3 when discharged. The sample of horses contained varieties in causes of colic, duration and lesion locations.

A prospective observational clinical study was performed. Client-owned horses presenting for colic evaluation were included. Faecal samples were extracted for genomic DNA, polymerase chain reaction amplified, sequenced and analysed using QIIME. This technique was previously described by Stewart et al (2019). Samples from 17 horses with colic were analysed. There was a significant difference in the number of bacterial species observed from admission to day 3 of hospitalisation (when discharged).

There was a significant difference in bacterial community composition for horses with different colic durations and lesion location. Differences in bacterial phyla and genera were observed at different time points and with different types of colic. Horses with colic for >60 hours had a decrease in species richness and diversity and a distinct bacterial population, compared with horses with colic for <60 hours.

Horses with large intestinal lesions had a distinct bacterial population compared with horses with small intestinal lesions, although they showed no significant difference in species richness or diversity.

## Comparison of chlorhexidine and alcohol-based antiseptics of the distal limbs of horses

Doyle et al (2021) aimed to determine whether ethanol-based antiseptics reduces bacterial counts, compared with chlorhexidine scrub, on the equine distal limb in a randomised trial of 41 horses.

A further objective was to determine the most effective application technique. The World Health Organization recommends the use of alcohol-based hand rubs in the human healthcare setting. It has been demonstrated that a 90 second ethanol-based antiseptics was well tolerated by equine skin and was effective at reducing bacterial counts over the jugular groove of horses.

There were four treatment groups used, one on each limb of each horse. These included a 5-minute chlorhexidine scrub with gauze sponges, a 90 second wet contact application using gauze sponges with ethanol (Hartmann, Sterilium®), a 90 second wet contact application time using an ethanol spray and a 90 second wet contact time with ethanol using gauze sponges and an unclipped site.

There was a significant difference in bacterial load between chlorhexidine and the unclipped ethanol treated site in the hindlimbs, but not the forelimbs. The same response was seen when ethanol was applied as a spray, but the authors were unable to explain this finding. Otherwise, there were no significant differences in bacterial counts on the distal limb between chlorhexidine and ethanol when applied as a scrub to a clipped site. **EQ**

## References

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