

Cortisol Levels and Colic Survival in Horses

Cortisol, which is often termed the "stress hormone" because its levels rise in response to stress in horses and other species, might offer veterinarians another tool for assessing and developing prognoses for horses with colic. At the 2009 American Association of Equine Practitioners Convention, held Dec. 6-10 in Las Vegas, Nev., one study examined cortisol levels in 29 colicking horses referred to a United Kingdom clinic for exploratory surgery.

"In all mammals there is a large individual variation in cortisol concentrations in response to stress," wrote the researchers, led by Tim Mair, BVSc, PhD, DEIM, DESTS, Dipl. ECEIM, MRCVS, of the Bell Equine Veterinary Clinic, United Kingdom. "The large individual variation makes interpretation of individual cortisol concentrations recorded at one time point confusing; however, this may be overcome by examination of serial cortisol concentrations (measurements taken repeatedly over time) from other species."

Of the 29 horses included in the study, about half were Thoroughbreds or crosses, while the remainder were Warmbloods/crosses, ponies/Arabians, and Shires. Twenty-two horses survived to be discharged from the hospital, and these horses exhibited significantly lower concentrations of cortisol at admission than horses that did not survive (410 nmol/l vs. 764 nmol/l).

The authors also noted that in survivors, cortisol concentrations gradually decreased whereas in nonsurviving horses, cortisol levels remained high until the horses died or were euthanized.

"This preliminary study shows that there are differences in cortisol concentrations in surviving and non-surviving horses after exploratory celiotomy (surgical incision into the abdominal cavity) for colic," the research concluded. "Future studies with more case numbers are warranted to further investigate the use of serial cortisol concentrations as an aid in assessment and prognostication for horses after colic surgery."