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## IS THIS A CRITICAL CASE OF COLIC?

Critical cases of abdominal pain (colic) are defined here as those in which the horse requires:

- Euthanasia on humane grounds or
- Hospitalisation for intensive medical or surgical treatment.

It is important to identify critical cases of colic early because rapid diagnosis and recognition of the horse's critical status can have a major impact on welfare. This document lists the clinical signs\* that suggest that a horse with suspected colic requires hospitalisation or consideration of euthanasia.

### **Pain**

- Pain despite analgesia
- Abrasions
  - Result from rolling/thrashing/being cast
  - Typically found above the eyes and on other bony prominences
- Thrashing
- Unresponsive
- Rolling continuously/throwing themselves to the ground
- Continuous box walking
- Sudden alleviation of signs
  - This usually indicates gastric or intestinal rupture

### **Cardiovascular system**

- Tachycardia (heart rate >60 bpm)
- Abnormal mucous membranes
  - Colour: Red, purple, blue, grey
  - Moistness: Dry
  - 'Toxic ring' (red or purple line above teeth)
- Capillary refill time >2.5 seconds
- Weak pulse character
- Elevated packed cell volume<sup>†</sup>

### **Alimentary system**

- Significant (>4 L in a 500 kg horse) or spontaneous nasogastric reflux, and/or foul mouth odour
- Identification per rectum of:
  - Distended small intestinal loops
  - Severe large intestinal distension
  - Large intestinal displacement
- Peritoneal fluid discoloured or turbid
- Abnormal abdominal ultrasound
- Severe abdominal distension on visual observation
- No gut sounds in ≥1 quadrant
- Peritoneal fluid lactate >2 mmol/L<sup>§</sup>

### **Case progression**

- Rapid deterioration of signs

#### **Notes and warnings**

- A horse with colic may show many of the signs listed above, or just one or two
- It is always preferable to refer to an equine hospital a horse that does not need intensive medical or surgical treatment, than to delay referral of a horse that does need such treatment

\* These lists of clinical signs were generated from the results of 2 studies, one prospective<sup>1</sup> and one retrospective<sup>2</sup>, both of which assessed predictors of critical colic status, and *via* a multi-stage process<sup>3</sup>. In the multi-stage process, the results of 2 studies<sup>1,4</sup> were presented to participants in a workshop that involved horse owners and veterinary practitioners. This was followed by a series of surveys that were distributed to veterinary practitioners in the United Kingdom who had experience of managing equine colic. Questions were accepted if >75% of participants agreed that they were relevant. In this document, the clinical signs in each category are listed by rank, with those that achieved the highest percentage agreement listed first.

† The packed cell volume value that should give rise to concern is species- and breed-dependent (e.g., in Thoroughbred horses and most donkeys, a cutoff of >45% is reasonable, but in a heavy horse a value of >35% would be of concern).

§ 2 mmol/L is the upper end of the reference range for normal peritoneal lactate concentrations with most analysers and in most populations. Peritoneal lactate >4mmol/L is a significant predictor of a strangulating intestinal lesions (sensitivity, 95%)<sup>5</sup>. Levels between these 2 values should increase your index of suspicion that the case is critical.

## References

<sup>1</sup> Curtis L, et al. Prospective study of the primary evaluation of 1016 horses with clinical signs of abdominal pain by veterinary practitioners, and the differentiation of critical and non-critical cases. [Acta Vet Scand. 2015;57:69](#). doi: 10.1186/s13028-015-0160-9

<sup>2</sup> Bowden A, et al. Indicators of 'critical' outcomes in 941 horses seen 'out of hours' for colic. [Veterinary Record. 2020; 187\(12\): 492](#) doi: 10.1136/vr.105881

<sup>3</sup> Wild I. (2018) Disseminating evidence to equine practitioners (MRes Vet Sci thesis). University of Nottingham, Nottingham, United Kingdom.

<sup>4</sup> Scantlebury C, et al. Could it be colic? Horse-owner decision making and practices in response to equine colic. [BMC Vet Res. 2014;10\(Suppl 1\):S1](#). doi:10.1186/1746-6148-10-S1-S1.

<sup>5</sup> Peloso JG, Cohen ND. Use of serial measurements of peritoneal fluid lactate concentration to identify strangulating intestinal lesions in referred horses with signs of colic. *J Am Vet Med Assoc.* 2012;240(10):1208-1217. doi:10.2460/javma.240.10.1208

## Further reading

Cook VL, Hassel DM. Evaluation of colic in horses: Decision for referral. *Veterinary Clinics of North America: Equine Practice.* 2014;30(2):383-398

Mair T. Assessment of colic in the field and surgery referral indications. *Vet Times.* [VT49.03](#). January 21, 2019.

White NA. Decision for surgery and referral. In: Blikslager AT, et al (eds). *The equine acute abdomen*. 3<sup>rd</sup> ed. 2017. Hoboken, NJ: John Wiley and Sons, Inc: 2017:285–288.