Antibiotic selection in canine haemorrhagic gastroenteritis: first results of a randomized blinded clinical trial

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OBJECTIVES
Antibiosis is deemed appropriate in haemorrhagic gastroenteritis (HGE) cases with systemic signs of disease, but there are no clear recommendations on which antibiotics should be administered. Amoxycillin-clavulanate and metronidazole are the most commonly prescribed antibiotics for such cases, but the necessity for both antibiotics is unknown. A clinical trial was therefore designed to investigate the efficacy of metronidazole as an adjunct to amoxycillin-clavulanate therapy in HGE cases.

METHODS
Dogs presenting to a first opinion veterinary hospital with HGE <3d duration were recruited to a ethically approved, prospective, randomized, blinded treatment trial with owner consent. Cases were randomised to receive either metronidazole or saline in a blinded manner, in addition to standard supportive therapy consisting of amoxicillin-clavulanate, IVFT, buprenorphine and omeprazole. Treatment efficacy was assessed by duration of hospitalisation, and daily clinical progress measured by a clinical scoring system.

RESULTS
Twenty-one cases have successfully completed this trial to date, which is 44% of the total required to be able to detect >12hr difference in hospitalisation between the treatment groups (5% error rate and 80% power). The average duration of hospitalisation for dogs receiving metronidazole was 28.6hr (SD 17.9hr), and saline placebo was 24.3hr (SD 10.9hr). Statistical significance was not reached. There was also no significant difference between daily clinical scores of the two treatment groups.

IMPACT
The interim results of this study have shown that it is not necessary for both metronidazole and amoxicillin-clavulanate to be administered to severe HGE cases, as addition of metronidazole does not improve clinical outcome.

Borrelia burgdorferi sensu lato infections in ticks from dogs in Cumbria

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OBJECTIVES
To understand the infection prevalence of Borrelia burgdorferi sensu lato (s.l.), the causative agent of Lyme disease, in dogs in Cumbria.

METHODS
Nine veterinary practices in Cumbria collect ticks from animals that were brought in specifically for tick removal or if a tick was spotted during an appointment. The animals were subjected to a two minute examination, focused on ears, head and groin. Ticks were removed into 70% ethanol, and a questionnaire filled out for each animal. The ticks were identified to species using a dissecting microscope and appropriate taxonomic keys. DNA was extracted and the samples were tested for the presence of Borrelia burgdorferi s.l. DNA using a real-time PCR targeting the 5s-23s intergenic spacer region.

RESULTS
393 ticks have been collected from 246 animals. Most ticks were collected off dogs, but a not inconsiderable number were collected off other animals. Borrelia burgdorferi s.l. DNA was detected in eight ticks (2.03%).
These included three (one *I. ricinus* and two *I. hexagonus*) taken off a stray ferret, one *I. ricinus* and one *Ixodes* spp. taken off two cats, and three *I. ricinus* taken from three dogs. Ticks were collected all year round.

**STATEMENT**

The data collected shows that ticks can be found on companion animals all year round and that although the threat of *B. burgdorferi s.l.* infections is low it is still a threat to animals in Cumbria.

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**Prevalence and antimicrobial susceptibility patterns of bacterial isolates associated with hepatobiliary infection in cats and dogs**

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**OBJECTIVES**

The aim of this study was to analyse bacterial culture and antimicrobial susceptibility results obtained from bile and liver specimens collected from dogs and cats and investigated for hepatobiliary disease at a Small Animal Hospital in the UK.

**METHODS**

Five-hundred and thirteen samples were submitted to the Microbiology Laboratory from 2011-2016 (262 liver biopsies/bile from the same cases and, separately, 176 bile samples and 75 liver biopsies) for culture and susceptibility testing (C&S).

**RESULTS**

Overall, 73 bile (16%) and 20 liver (5.7%) samples yielded bacterial cultures. Thirty-eight different bacterial species were identified and the most prevalent were *Escherichia coli*, *Enterococcus* spp., *Campylobacter* spp. and *Clostridium* spp. (30, 15, 14 and 7% respectively). When liver and bile sample were submitted from the same case, bile was more likely to be positive (71 vs 18).

*E. coli* isolates showed resistance to ampicillin (58%), fluoroquinolones (37%), tetracycline (32%), trimethoprim/sulfamethoxazole (26%) and cefazolin (21%). However, *E. coli* isolates were fully susceptible to aminoglycosides and imipenem. *Enterococcus* spp. isolates showed unpredictable profiles where all isolates were resistant to enrofloxacin and erythromycin and 66% of isolates were resistant to tetracycline and gentamicin.

**STATEMENT**

These results emphasize the importance of performing direct Gram smear examination when considering initiation of empirical antimicrobial therapy. As such, the presence of Gram-negative cocobacilli (likely *E. coli*) may indicate that gentamicin could be a suitable option before C&S results are available whilst the presence of Gram-positive coccoid bacteria (likely *Enterococcus*) indicates that empiric therapy will rarely be right without C&S.