probability to diagnose CAPI when facing 3 clinical and/or biological signs suggestive of ehrlichial disease was evaluated at 7.1%. Nine dogs were mono-infected, and 11 dogs were co-infected with *E.canis* (3), *L.infantum* (2), *Babesia* sp. (2) and *H.canis* (5). For 4 dogs, all tests were not performed. Anorexia (58%) and weight loss (46%) were common reasons for visit. Lymphadenomegaly (42%), hyperthermia and cutaneous signs (38%) were frequent findings whereas musculoskeletal disorders (25%), petechiae/ecchymosis (21%), splenomegaly (17%), dehydration and ocular lesions (8%) then epistaxis (4%) were less common. Haematological abnormalities included thrombocytopenia and anaemia (81%), leucopoenia (25%) and leucocytosis (35%). A risk-analysis conducted between mono- and co-infected dogs didn't highlight significant differences except for anorexia that was significantly more frequent in mono-infected dogs.

This study illustrates the magnitude of CAPI in the Mediterranean basin and supports the existence of virulent strains in this area. Co-infections were common but had a weak impact on clinical expression. These results emphasize also the importance of testing dogs for multiple VBP due to the difficulty in assigning a specific symptom or haematological abnormality to a specific vector-borne infection in endemic areas.

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ISCAID-O-4

PROGNOSTIC VALUES OF SERUM ELECTROLYTES AND ANION GAP IN DOGS WITH NATURAL OCCURRING LEPTOSPIROSIS: A COHORT STUDY IN 156 DOGS.

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Leptospirosis is a worldwide zoonotic disease with high mortality rate in humans and dogs. Clinicopathologic changes may reflect renal disease, hepatic disease, or both causing often vomiting, polyuria/polydipsia and diarrhea. Therefore, severe electrolytes and anion gap (AG) abnormalities could be expected. The aim of this cohort study was to investigate serum electrolytes and AG in dogs with natural occurring leptospirosis and to assess their prognostic values.

The electronic data-base of the San Marco Veterinary Clinic P.O.A System-Plus 9.0® was searched between October-2004 and April-2015 for dogs with diagnosis of leptospirosis (group 1; n = 52). Inclusion criteria for group 1 were consistent clinicopathologic signs and a positive microscopic agglutination test (titer≥1:1600 in vaccinated dogs, titer≥1:800 in nonvaccinated dogs or≥4-fold increase in convalescent titer) and/or a positive PCR (urine and/or blood) for leptospirosis. Parameters studied were: serum electolytes (sodium, chloride, potassium), AG, and AG albumin-adjusted ($AG_{alb\text{-}adjusted}$ = AG + 2.5 x (3.2 - [alb]).Two control populations of randomly healthy dogs (group 2; n = 52) and sick dogs without leptospirosis (group 3; n = 52) dogs were created and matched to group 1 for age (±6 months), sex (including sexual status) and breed. Statistical differences between groups were evaluated by Kruskal-Wallis test and post-test analysis were performed by Wilcoxon-Mann-Whitney. Mortality relative risk (MRR) at 28 days post-admission between group 1 and group 3 was evaluated. ROC curves were used to identify the best prognostic analyte. Significance level for all statistical test was set at $P < 0.05$.

Serum sodium and chloride concentrations were significantly decreased in group 1 compared to group 2 and 3 ($P < 0.0001$ for both comparisons). Serum potassium concentration was significantly decrease in group 1 compared to group 2 ($P = 0.038$), while no difference was present between group 1 and 3 ($P = 0.466$). Serum AG and $AG_{alb\text{-}adjusted}$ were significantly increased in group 1 compared to group 2 and 3 ($P < 0.0001$ for all comparisons). There was a significantly increased in mortality rate in group 1 (n = 20, 38.5%) compared to group 3 (n = 5, 10.4%) (MRR = 4.0; 95% CI = 1.72–9.75). Between the variables studied serum potassium (AUC = 75%; $P = 0.0002$) and chloride (AUC = 73%; $P = 0.0028$), AG (AUC = 78%; $P = 0.0002$) and $AG_{alb\text{-}adjusted}$ (AUC = 80%; $P < 0.0001$) were prognostic.

Serum electrolytes, AG, and $AG_{alb\text{-}adjusted}$ were significantly different in dogs with leptospirosis compared to healthy and sick dogs without leptospirosis with the exception of serum potassium that was similar between sick dogs with and without leptospirosis. Between the variables studied the $AG_{alb\text{-}adjusted}$ resulted the best parameter in predicting death in dogs with leptospirosis.

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ISCAID-O-5

EMERGENCE OF HUMAN PATHOGENIC *ENTEROCOCCUS FAECALIS* CC2 LINEAGES IN COMPANION ANIMALS.

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Enterococci causes urinary tract infection (UTI) in companion animals and may carry important resistance genes such as for the bifunctional enzyme. Furthermore, their virulence factors are seldomly reported in veterinary medicine. Thus, this study aims to characterize the uropathogenic enterococci antimicrobial resistance, virulence genes and the clonallity of high-level gentamicin resistance (HLGR) *Enterococcus faecalis*.

Antimicrobial susceptibility testing of 74 clinical uropathogenic enterococci isolated from dogs and cats with UTI, isolated between 1999–2015, was performed by the disc diffusion method. CLSI clinical breakpoints were applied. Strains showing HLGR were screened for *aac(6′)-Ieaph(2′′)-Ia* and *aph(2′′)-1d* genes by PCR. *E. faecalis* harbouring HLGR genes were typed by multi-locus-sequencing. Fifty-nine strains were further characterized by PCR for the presence of *gel E* (gelatinase), *ace* (collagen binding antigen), *asa-1* (aggregation substance), and *efa A* (endocarditis) virulence genes.

E. faecalis was the most frequently isolated (81.1%, n = 60/74) followed by *Enterococcus faecium* (12.2%, n = 9/74). Overall, antimicrobial susceptibility results were: 11.8% (n = 8/74) resistance to penicillin/ampicillin; 58.1% (n = 43/74) resistance to fluoroquinolones (enrofloxacin or ciprofloxacin); 10.0% (n = 7/70) resistance to nitrofurantoin; 11.4% (n = 8/70) resistance to chloramphenicol and 69.6% (n = 48/69) resistance to tetracycline. HLGR was detected in 14.1% (n = 9/64) enterococci, namely 7 *E. faecalis* and two *E. faecium*. All HLGR *E. faecalis* were *aac (6′)-Ieaph(2′′)-Ia* carriers. One *E. faecium* was positive for *aac (6′)-Ieaph(2′′)-Ia* whereas the other was positive for *aph(2′′)-1d*. Interestingly, ampicillin-resistance was only detected in *E. faecium* (8 out of 9 isolates). Furthermore, all HLGR *E. faecium* were also ampicillin-resistant. HLGR *E. faecalis* were found to belong to ST16, ST6, ST35, and ST59 major lineages circulating in both hospital and community settings in Portugal.

Considering all enterococci, 64.4% (n = 38/59), 71.2% (n = 42/59), 32.2% (n = 19/59) and 78.0% (n = 46/59) were positive for *gel E*, *ace*, *asa-1* and *efa A* virulence genes, respectively. Uropathogenic *E. faecium* were only positive for *ace* gene (2 out of 8), thus *E. faecalis* had higher virulence genes frequencies.

In this study we detected important human HLGR *E. faecalis* belonging to the clonal complex 2, such as *E. faecalis* ST6, among uropathogens in companion animals. The presence of major clonal lineages in companion animals highlights their role as community-associated hosts and possible reservoirs of putative human pathogenic enterococci.

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ISCAID-O-6

POLYMERASE CHAIN REACTION (PCR) SURVEY OF FELINE HAEMOPLASMA INFECTIONS IN SERBIA.

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Haemotropic mycoplasmas (haemoplasmas) can cause haemolytic anaemias in many species, including people. Three feline