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Case report

Clostridium perfringens infection in an African elephant (*Loxodonta africana*) calf

Date: 2024

Data provided by: Tina Risch DVM

Species: African elephant

Accommodation: Zoo

Age: 6 weeks

Gender: male

History

A 6 weeks-old African elephant calf developed watery diarrhea, which was expelled in a stream. The calf's general condition was age-conform.



Watery feces from a 6 weeks-old African elephant calf with sudden watery diarrhea.

A fecal sample was sent to the laboratory and tested positive for *Clostridium perfringens* enterotoxin via PCR (netF-toxin PCR positive). Additionally, Trichomonadida trophozoites

were detected both by the same lab and in the in-house laboratory of the zoo, using a fresh smear.

Lab results:

In the fresh slide several Trichomonadida were observed.

Cryptosporidium sp. (antigen EIA): negative

Rotavirus A (PCR) Rotavirus A-PCR: negative

Clostridium perfringens (PCR Enterotoxin-PCR): positive

Clostridium perfringens (NetF-Toxin-PCR): positive

Clostridioides difficile (Toxin A-PCR): negative

Clostridium difficile (Toxin B-PCR): negative

Parasites: negative

Protozoa-cysts: negative

Parasites (Baermann and Wetzel): negative

Bacteriology

1. Gram-positive flora: few Enterococci, few aerobic spore forming bacteria

2. Gram-negative flora: few *Escherichia coli* (mucoid) few *Klebsiella pneumoniae*

3. *Salmonella spp.*: negative (also after enrichment)

4. Fungi: negative

Treatment

Given the herd structure and the protected contact management system, it was decided to administer Penicillin/Streptomycin (**Veracin**[®], Dechra)^{*} intramuscularly using a dart gun on the day of the first signs. This treatment was repeated 3 times at two-day intervals.

Treatment results

The consistency of the feces improved just one day after the first treatment. Further fecal samples from the calf and the other elephants, taken 5 and 8 days after the initial detection, showed no enterotoxins (PCR).

Following this episode, and notwithstanding the likelihood that the natural infection might already have stimulated sufficient immunity, the animal was vaccinated twice with **Covexin**^{® 10} (Zoetis)^{**} with an interval of 4 weeks.

^{*}Veracin contains per ml: Dihydrostreptomycinsulfat 258,00 mg (entsprechend 200.000 I.E.), Benzylpenicillin-Procaïn 120,00 mg, Benzylpenicillin-Benzathin 76,19 mg.

^{**} Covexin 10 (Zoetis) contains per ml: *C. perfringens* Typ A – Toxoid $\geq 0,9$ E3 *C. perfringens* Typ B & C (β) – Toxoid $\geq 12,4$ IE1 *C. perfringens* Typ D (ϵ) – Toxoid $\geq 5,1$ IE1 *C. chauvoei* Vollkultur entspricht Ph. Eur.2 *C. novyi* – Toxoid $\geq 1,2$ IE1 *C. septicum* – Toxoid $\geq 3,6$ IE1 *C. tetani* – Toxoid $\geq 2,5$ IE1 *C. sordellii* – Toxoid $\geq 0,8$ E1 *C. haemolyticum* – Toxoid $\geq 16,5$ E3 Adjuvans Alaun 3,03 - 4,09 mg, Thiomersal 0,05 – 0,18 mg, and Formaldehyd $\leq 0,5$ mg