

Preliminary molecular analysis of *Clostridium perfringens* isolates from poultry in Argentina.

Authors:

Jesica Bucci 1
Johana E Domínguez 1.2.
Enzo A Redondo 1.2.
Gabriela C Dailoff 1.2.
Leandro M Redondo 1.2.
Mariano E Fernández Miyakawa 1.2.

1. Instituto de Patobiología, Centro Nacional de Investigaciones Agropecuarias, Instituto Nacional de Tecnología Agropecuaria, Castelar, Buenos Aires, Argentina.
2. Consejo Nacional de Investigaciones Científicas y Técnicas, Ciudad Autónoma de Buenos Aires, Argentina.

Abstract:

Clostridium perfringens is a Gram positive, rod shaped, anaerobic, spore forming bacterium that is commonly found in environment and in the gastrointestinal tract of animals and humans as a member of the normal gut microbiota. According to the current classification, *C. perfringens* isolates are divided into five types (A-E) on the basis of the production of four major toxins (alpha, beta, epsilon and iota). *C. perfringens* avian necrotic enteritis is among the most important diseases in the poultry industry. The aim of this study was to investigate the prevalence of *C. perfringens* in poultry and determine the molecular characteristics by toxin gene profiles.

175 stool samples were collected from 35 commercial poultry farms; all samples were taken from apparently healthy birds. Samples were streaked on blood agar plates with neomycin and a pre-enrichment step in chopped meat was included when needed. *C. perfringens* strains were identified by biochemical test and typified by multiplex PCR for alfa, beta, beta 2, enterotoxin, epsilon and iota toxins genes, also a single PCR was included for netB toxin. *C. perfringens* strains were isolated in 45 samples (25.7%). All isolates were classified as *C. perfringens* type A. The beta 2 toxin gene was found in 3 strains (6.7%), and the net B toxin gene was found in one strain (2.2%). There was no association between the presence of extra toxin genes and the clinical outcome.

The rate of detection of *C. perfringens* strains the in non-diseased birds, even strains with cpb2 and netB toxin genes may suggests that the occurrence of clinical disease depends on the presence of toxin producing strains in combination with the effect of predisposing factors from bird and environment. More studies are needed to elucidate the epidemiology of *C. perfringens* in poultry farms.

Keywords: Poultry, necrotic enteritis, *Clostridium perfringens*

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