STUDY OF THE EFFICACY OF GUMBOHATCH® (LIVE VACCINE AGAINST INFECTIOUS BURSAL DISEASE) IN BROILER CHICKEN

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INTRODUCTION
GUMBOHATCH® is a new immune-complex vaccine against Infectious Bursal Disease (IBD) developed by HIPRA (Spain). The intended use of the vaccine is to protect chicks once the maternal antibody levels start to drop. The objective of this trial was to assess the efficacy of GUMBOHATCH® in broiler chickens after an experimental challenge with a high dose of a very virulent IBD virus (vvIBDV) strain.

MATERIALS & METHODS
Twenty animals, either in vivo vaccinated with GUMBOHATCH® (n = 10) or mock vaccinated with PBS (n = 10), were used to assess the efficacy of the vaccine. The trial involved a challenge with a high dose of a vvIBDV strain at 24 days of age (Figure 1).

At day 6 after challenge, when the acute phase of the disease was expected to take place, animals were necropsied and the outcome of the infection was compared between groups. To assess the protection, bursae of Fabricius (BF) and spleens of the animals were weighed and examined macroscopically. A complete histopathological analysis of BF were performed based on Sharma et al. (1989). In addition, special attention was paid on clinical signs after infection. Growth rate of animals after infection was also monitored.

RESULTS & DISCUSSION

RESUMEN
(a) (b)
Image 1. Summary of the animal experimentation phase.

Figure 2. Bursae of Fabricius taken at necropsy (upper part) and its histological examination (lower part).

The histological study of the bursae indicated that lymphoid depletion was present in both groups receiving a Gumboro virus (Figure 2), which indicated the replication of the virus. However, there was a clear distinction between BF of non-vaccinated challenged birds, which presented a severe inflammation (heterophil and mononuclear infiltrates plus oedema that affected the full thickness of the bursae) and lymphoid necrosis, and bursae of vaccinated chickens (Figure 3c). Inflammatory response may be indicative of the highly virulent nature of the challenge strain, and its absence in the vaccinated animals may represent the protection confirmed by the vaccine.

Moreover, clinical signs (Figure 3b), splenomegaly (Figure 3c), and a decreased growth rate (Figure 3d) were only observed in the mock-vaccinated infected group, demonstrating the efficacy of the vaccine.

In summary, all these differences between vaccinated chickens and mock-vaccinated chickens indicated that the vaccine could clearly overcome the effects of the infection, protecting the animals against the challenge with the vvIBDV.

CONCLUSIONS
The results of this study demonstrate the efficacy of GUMBOHATCH® vaccine in broiler chickens against infection with a vvIBDV strain.

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REFERENCES