Evaluation of the anticoccidial effects of herbal extracts in experimentally induced Elmeriatenella infection in broiler chickens

G. Farjani Kish, E. Babaei-Nezhad

1 Department of Pathobiology, School of Veterinary Medicine, Lorestan University, Khorramabad, Iran
2 Student of Veterinary Medicine, School of Veterinary Medicine, Lorestan University, Khorramabad, Iran
*Corresponding author's email: Es.babaeinezhad1391@gmail.com

Objectives: Coccidiosis is one of the most important diseases of poultry worldwide that characterized by enteritis. Safe alternative anticoccidial drug to chemical feed additives are herbal extracts, because they don't results in tissue residue and drug resistance. Therefore we have decided to study the effects of herbal extracts to control avian coccidiosis.

Materials & Methods: For this purpose 180 one-day-old broiler chickens were randomly divided into 9 equal groups. Each group had 2 replicates (10 birds/group). The experimental groups were designated as follows: 1) B. riobunbo 2) Nectaroscoradumtripedale 3) Doremanaschier 4) Cichormantibus 5) Prangosferulaceae 6) Dichlorzil 7) Artemisia absinthium 8) Insectic control 9) Uninfect control. Administration of herbal extracts and supplementation of dichlorzil began 2 days before challenge and lasted for the duration of the experiment. The chicks of all the groups except the uninfected control group were inoculated orally with sporulated oocysts (3-103 oocysts of E. tenella) at 22 day of age. The criteria employed were: body weight, feed conversion ratio (FCR), blood feces in feces, survival rate, lesion scoring, number of oocyst output per gram feces (OPG) and development of histopathological lesions.

Results & Conclusions: N. tripedale and dichlorzil showed better results in terms of growth performance, lesion score, extent of bloody diarrhea and oocyst count as compared with other herbal extracts. Based on histopathological examination intracellular stages of coccidia in mucosa and submucosa were observed in all treated groups. In addition, in group 1 purulent enteritis, coagulative necrosis and degeneration, crypt hyperplasia within oocysts of coccidia was also evident in the epithelium. In group 2 and 3 parasitic hemorrhagic fibronodule enteritis were observed. In group 5 fibrous proliferative enteritis with villus atrophy were seen. In the group 6, lesions included intracellular stages of coccidia (oocysts and schizont) in mucosa and submucosa with infiltration of inflammatory cells. The severity observations was respectively related to the groups D. aitneri, A. absinthium, B. bovei, P. fernulaceae, C. inybius, dichlorzil and N. tripedale in decreasing order.

In conclusion, the results of the present study showed that herbal extracts were effective against the E. tenella. In particular, N. tripedale was found to be more potent on the basis of oocyst output and live body weight. N. tripedale was promising efficacy as an effective and safe alternative drug against coccidiosis.

Keywords: Coccidiosis, herbal extract, broiler chicken, histopathological examination

Molecular identification of genotype B, a new genotype of Chlamydophillapsittaci in an African grey parrot (Psittacus erithacus)

Afshari A1, Razmyar J2, Rajabion M2, Zaeemi M2, Kargar A2

1 Department of Nutrition, Faculty of Medicine, Mashhad University of Medical Science, Mashhad, Iran
2 Department of Clinical Sciences, Faculty of Veterinary Medicine, Ferdowsi University of Mashhad, Mashhad, Iran.

Corresponding author’s email: AfshariA3@mums.ac.ir

Objectives: Avian chlamydophilosis is caused by Chlamydia psittaci with the highest infection rates in parrots (Psittacidae) and pigeons (Columbiformes). This study was conducted to molecularly characterize chlamydophilosis in an African grey parrot and determine its genotype.

Materials & Methods: A 2-year-old African grey parrot (Psittacaus erithacus) was examined because of anorexia, depression, diarrhea, and mild dyspnea. After laboratory tests and radiology of the bird, swabs from choanal cleft and cloaca were collected. DNA extraction andompA gene-based diagnostic PCR, using CTU CTL primers were performed. Final sequence of the PCR product was compared with sequences obtained from GenBank.

Results & Conclusion: The established phylogenetic tree based on the genome fragment examined in this report and 12 reference genomes, revealed 100% identity of amplicon sequence with genotype B obtained from previous studies. To the best of our knowledge, this is the first report of genotype B identification from Iran. This study suggests the need for greater awareness of chlamydophilosis in pet bird populations by avian clinicians in Iran.

Keywords: Avian Chlamydia psittaci, Psittacidae, Columbiformes, African grey parrot, ompA gene.