Biochemical parameters in Japanese quails *Coturnix coturnix japonica* infected with coccidia and treated with Toltrazuril

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Abstract

The activity of aspartate aminotransferase, alanine aminotransferase and lactate dehydrogenase, total protein, albumin and cholesterol levels were determined in the blood serum of Japanese quails infected with coccidia and treated with Baycox (active ingredient: toltrazuril). Lower levels of AST and ALT activity were noted in treated birds regardless of the applied Baycox dose. The biochemical changes observed in the blood serum of Japanese quails point to coccidia-induced damage of digestive system tissues despite an absence of pronounced clinical symptoms. Significantly lower levels of AST activity and higher levels of LDH activity in treated birds indicate that coccidiosis treatment with toltrazuril contributed to the regeneration of digestive system tissues. An insignificant increase in cholesterol levels was noted, whereas the other serum biochemical parameters remained within the reference ranges.

Key words: *Coturnix coturnix japonica*, serum, toltrazuril, biochemical parameters

Introduction

The Japanese quail (*Coturnix coturnix japonica*) is a poultry species that is reared mainly for eggs and meat. Intensive production systems where birds are kept on litter in confined spaces contribute to the spread of infections, including coccidioses caused by *Eimeria uzura*, *E. bateri*, *E. taldykurganica* and *E. tsunodai* (Tsunoda and Muraki 1971, Tsutsumi 1972, Teixeira et al. 2004, Bashtar et al. 2010, Gesek et al. 2014). Young quails generally develop acute coccidiosis, sometimes without evident symptoms of diarrhea, whereas a subclinical form of the disease is noted in older birds. In routine diagnosis of intestinal coccidiosis, the presence of oocysts is determined by parasitological examinations of fecal samples. Blood tests are generally not performed, although serum biochemical parameters are species-specific and are influenced by the birds’ age, sex and diet (Scholtz et al. 2009). Japanese quails are small and highly mobile birds, therefore, blood sampling is technically difficult and requires sacrifice, therefore there are practically no publications describing the biochemical changes in the blood in the course of subclinical coccidiosis in this birds.