Abstract:

Ascites involves the accumulation of large amounts of serous fluid in the abdominal area and is a metabolic disorder in which many predisposing factors are involved. Mortality often occurs in broilers with very rapid growth and as ascites. Therefore, the aim of this study was to investigate the biochemical factors of broilers serum with ascites syndrome. To that end, 24000 broilers were purchased at 308 heads and studied over a 40-day period. At the end of the rearing period, the chickens that were apparently suspected of having ascites were separated and subjected to blood sampling, autopsy, and sampling for examination. According to clinical signs, 37 chickens were suspected of having ascites. First, the chickens were numbered, the physical symptoms were recorded, weighed, and then anesthetized, and a blood sample was taken from each of the wing veins. The chickens were then slaughtered, the autopsy marks were recorded and the heart was removed from the body. Large arteries, atria, sinuses, and fat around the heart were removed, and the right ventricle was detached from the junction with the two-ventricular wall and weighed using a scale with 0.001 g accuracy. Then, the total weight of the ventricles was calculated and determined. According to the above method, 10 healthy chickens were randomly selected and numbered, weighed and then blood sampled, dissected and sampled to investigate the factors related to ascites. According to the results of this study, there is a significant difference between experimental groups in terms of ascites ($P < 0.05$) and there is no significant difference only in terms of TV index ($P > 0.05$). The body weight in the normal group was 2435/5±72/4 grams and in the ascites group it was 1611/72±86/4 grams, which indicates the effect of ascites on weight loss. The weight of the right ventricle (RV) in the ascites group was significantly higher at 3/265±0/194 ($P < 0.05$) than in the normal group at 1/905±0/194. The ratio of right ventricular weight to total ventricular weight with septum (RV / TV) was significantly higher in the ascites group at 40/864±2.20 ($P < 0.05$) than in the normal group at 20/960±2.20 Also, the total weight ratio of the two ventricles to the total body weight (TV / BW) was significantly higher at 0.506±0/03 ($P < 0.05$) than the normal group at 0/376±0/03. The results showed that there was a significant difference between the groups in terms of BUN, creatinine, calcium, albumin and TSH ($P < 0.05$). The BUN value in the ascetic group was significantly higher at 10/586± 0/91 ($P < 0.05$) than in the normal group at 3/883±0/91. Also, the creatinine content in the ascites group was significantly lower at 0/370±0/02 than in the normal group at 0/493±0/02. The amount of calcium in the ascites group was 10/114±0/295 and in the ascites group it was 14/100±0.295. Albumin, like creatinine and calcium, was significantly lower in the ascites group at 1.403±0/07 than in the normal group at 1.815±0/07. Thyroid levels in the ascites group were significantly lower at 0/800±0.02 than in the normal group at 2/379±0/02. Also, the amount of AST enzyme in normal and ascites samples did not show a significant change, but the amount of ALT enzyme in ascites samples decreased significantly compared to the normal group. The level of this enzyme in the normal group was 4/960±0/46 and in the ascites group was 2/167±0/46. Based on the data obtained in this study, it can be stated that investigating the biochemical factors of blood, cardiac factors and liver enzymes has an effective and decisive role in the diagnosis of ascites syndrome.

Keywords: Ascites Syndrome, Blood Serum Biochemical Factor, RV/TV

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Study of blood serum biochemical factors of ascites syndrome in broiler chickens

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