

Abstract

The purpose of this study was to investigate the effectiveness of ascorbic acid and thiamine administrations with oxytetracycline, tylosin, in sheep pneumonia treatment as a safe and useful method. For this study, 20 male lambs age of 8 to 12 months were identified to have respiratory disease by clinical examination and randomly allocated into four equal groups as treatment groups A, B, C and D. Five healthy sheep without any clinical signs of disease were selected as control group. Group A was treated only with oxytetracycline and tylosin. group B with oxytetracycline, tylosin and thiamine; Group C was treated with oxytetracycline, tylosin and ascorbic acid and group D was treated with oxytetracycline, tylosin, ascorbic acid and thiamine for 5 days. In control group, saline was injected. On the first, third, sixth, and fourteenth days, after clinical examinations the blood samples were collected from all groups, and proteins profile, including total protein, fibrinogen, ceruloplasmin, albumin, and haptoglobin, were measured in the plasma.

Compared to healthy controls, the infected animals exhibited abnormal lung sound, coughing and had an increase ($p < 0.05$) in body temperature, respiratory rate, and heart rate which were returned to the normal levels in all treated groups. Serum total protein level of infected animals (8.84 g/dl) decreased (7.16 g/dl) significantly ($p < 0.001$) during study. Albumin level was (2.77g/dl) in infected sheep and reached to (3.90g/dl) in group D after 14 days. Significant ($p < 0.001$) decline in ceruloplasmin level (13.42 mg/dl) was detected in group D. Haptoglobin changes were slight but significant ($p < 0.001$). Sharp and significant drop was observed in fibrinogen level that reached to (204.80 mg/dl) in group D after 14 days.

The changes in the level of acute phase proteins were evaluated as an indicator in diagnosis and monitoring of pneumonia improvement. It was concluded that ascorbic acid and thiamine along with the antibiotics, has effective in treatment and healing process compared to the two antibiotics when used alone. Therefore, ascorbic acid and thiamine could be used as effective, inexpensive, and safe treatment regimens in various respiratory diseases of sheep.

Key words: Pneumonia, Vitamin C, Thiamine, Oxytetracycline, Tylosin