

Acute Phase Proteins, Proinflammatory Cytokines and Oxidative Stress Biomarkers in Sheep with Pneumonic Pasteurellosis

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Abstract : The aim of this study was to assess the pathophysiological importance of lipid profile, acute phase proteins, proinflammatory cytokines and oxidative stress markers in sheep with pneumonic pasteurellosis. Blood samples were collected from 36 *Pasteurella multocida*-infected sheep, together with 20 healthy controls. Samples for bacteriological examination (nasal swabs, bronchoalveolar lavage) were collected from all animals and subjected to bacteriological examinations. Moreover, heart blood and lung samples were collected from the dead pneumonic sheep and subjected also to bacteriological examinations. A lipid profile was determined, along with a blood picture and other biochemical parameters. The acute phase proteins (fibrinogen, haptoglobin, serum amyloid A), the proinflammatory cytokine tumour necrosis factor- α , interleukins (IL-1 α , IL-1 β , IL-6), interferon- γ and the oxidative stress markers malondialdehyde, super oxide dismutase, glutathione and catalase were also measured. The examined biochemical parameters were increased in the pneumonic sheep, except for cholesterol and high-density lipoprotein cholesterol (HDL-c), which were significantly lower than control group. Acute phase proteins and cytokines were significantly higher in the pneumonic sheep when compared to the healthy sheep. There was a significant increase in the levels of malondialdehyde; however, a significant decrease in the levels of super oxide dismutase, glutathione and catalase was observed. The present study shed the light on the possible pathophysiological role of lipid profile, acute phase proteins (APPs), proinflammatory cytokines and oxidative stress markers in pneumonic pasteurellosis in sheep.

Keywords : acute phase proteins, sheep, pasteurella, interleukins, stress

Conference Title : ICAND 2016 : International Conference on Animal Diseases and Nutrition

Conference Location : Los Angeles, United States

Conference Dates : April 05-06, 2016