

Abstract:

The effects of four infectious bursal disease (IBD) vaccination regimes on glucose, plasma protein, differential white blood cell counts and heterophil to lymphocyte (H/L) ratios in specific antibody negative (SAN) indigenous chicken were evaluated. A total of twenty SAN indigenous chicks were divided into five groups of four chicks each, under different IBD vaccination regimes. Group 1 received Jovac D78® alone, Group 2 received K1 (local inactivated vaccine), Group 3 received combined D78® and K1 on the same day while Group 4 birds received D78® and K1 30 days apart and Group 5 was control. Birds were bled and data collected weekly for seven weeks. Data were analysed using GraphPad Prism Version 7.01. Group 3 and Group 4 had the highest initial mean weekly total plasma protein levels (3.75g/dL) two weeks after primary IBD vaccination. There were significant differences ($p < 0.05$) in plasma protein levels between Groups 1 and 3 and the control and between groups 1 and 2. Significant ($p < 0.05$) correlations between mean weekly plasma protein and glucose levels ($r = 0.39$) were observed in Group 3. There were significant ($p < 0.05$) increases in mean weekly relative counts of lymphocytes 14 days after primary vaccination in groups 1, 3 and 4. Heterophil to Lymphocyte (H/L) ratios decreased with age in all the groups and had a negative correlation ($r = -0.39$) with plasma protein levels in groups 1 and 4. These preliminary results indicate that use of the imported D78® IBD vaccine alone; and in combination with the candidate local K1 vaccine in a prime-boost program gives the best outcomes in the biochemical and hematologic parameters associated with immunity in indigenous chickens in Kenya.