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Measurement of antibody titers against Newcastle disease vaccines by Elisa and hemagglutination inhibition test using different methods of administration in Broiler chicks

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Abstract

Poultry vaccines were widely applied to prevent and control contagious viral diseases. Antibody response produced by Newcastle diseases(ND) virus vaccine which have been given by different routes of administration in broiler chicks using haemagglutination inhibition (HI)test and an Indirect Enzyme-Linked Immunosorbent Assay (ELISA) was determined in this study. One hundred ninety eight ,one day old ,unsexed Ross breed broiler chicks were used for this purpose. The birds were allocated into 6 equal groups ,one for control and the others were vaccinated at 7th day of age with Hitchner B1 and LaSota at 21st and 35th day old via drinking water with skimmed milk(SM), RO water ,aerosol ,intraocular, and intranasal routes respectively .All groups were vaccinated at 14th of age against Infectious Bursal Disease (IBD) .Ten blood samples have been collected from each group at 1st ,21st ,35th ,and 49th day of age .Serum has been separated and stored at-20 c^{0} until analysis. For all routes of the vaccine administration higher antibody titers were detected using ELISA technique than HI test. For both serological assays, the highest antibody titers detected when the vaccine was administered via drinking water route mixed with(SM) with significant level ($p<0.05$) compared to the control regardless to the age, followed by Ro group and intranasal route respectively. The 4th and 5th groups revealed, more or less, the same results. In conclusion, ELISA proved more accurate, sensitive and rapid, but more expensive than HI test when used for measuring of antibody response against NDV vaccines administered with different routes in broiler chicks.

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