



ABSTRACT

The trial was conducted in broiler chickens to assess the cross protection with and without ND vaccination and also to develop an effective control against NDV outbreaks. The level of antibody response, detected by haemagglutination-inhibition (HI) test and mean levels of antibodies were observed in vaccinated groups, and degree of protection against the virulent strain of Newcastle disease virus were also studied. Geometric Mean Titre (GMT) values of 6 (\log_2) or above assessed by HI method provided good protection to chickens following challenge with vvNDV. Efficacy of vaccine was assessed using challenge test and results showed that the autogenous vaccine prepared from the local indigenous isolates from the current outbreaks of ND was almost 90 to 100%. Furthermore, autogenous vaccine provided better protection as compared to the commercially available live attenuated ND vaccine (Group "E"), which provided unsatisfactory protection (50% to 60%) when challenged with viscerotropic velogenic Newcastle Disease Virus (vvNDV) at 4 weeks of age and then at the marketing age i.e. 42 days. The results of the present study concluded that oil emulsified killed vaccine provide good protection using local indigenous isolate against NDV. Therefore, present study of an NDV indigenous isolate in Pakistan can provide better vaccination program in future. The study high lights the importance of indigenous isolate in the manufacturing of the vaccine to counter-epidemic in the country. However, inactivated Avian Influenza Virus (AIV) vaccine produced 60% cross protection using local field isolate when challenged with vvNDV. Regression analysis was also performed while significant ($P < 0.01$) correlation was found among titre against AIV versus NDV though the group was vaccinated with AIV vaccine. Moreover, the group vaccinated with NDV vaccine produced titre against NDV as well as AIV though the group was not vaccinated against AIV and correlation among them was highly significant ($P < 0.001$). The results of the statistical analysis were providing the clue about structural similarity among both of the viruses.