

HUMORAL IMMUNE RESPONSES TO COMMERCIALY AVAILABLE EQUINE INFLUENZA VACCINES IN AGED HORSES

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Age-related decline in immune responses of geriatric horses is associated with a reduced response to vaccination and increased susceptibility to equine influenza virus (EIV) infection. The aim of the present study was to compare and evaluate the immune responses of geriatric horses given 2 doses of 'live' or 'killed' EIV vaccines. 27 geriatric horses (>20 yrs) were used in this study, all of which had prior exposure to equine influenza (EI) vaccination or infection. Treatment groups were stratified based on HI titres and body condition scores: Group 1 (n=7) 'killed' Calvenza™ EIV vaccine (OH/03 and KY/95, and Newmarket/93), Group 2 (n=7) inactivated Fluvac Innovator® EIV vaccine (KY/97) and Group 3 (n=7) 'live' canarypox vectored Recombitek® EIV vaccine (KY/94 and Newmarket/93). Group 4 (n=6) served as the non-vaccinate controls. Serum samples were collected prior to vaccination (day 0) and on days 7 and 14 post vaccination. 14 days (day 28) after the first vaccination, a second vaccination was administered, and serum samples were collected on days 35 and 42. Antibody responses were measured by HI, SRH and ELISA. Results showed that no significant difference ($P>0.05$) in HI, SRH and ELISA antibody titres for the control horses throughout the study. Post vaccination, there was a significant ($P<0.05$) increase in HI, SRH and ELISA antibody titres for all three vaccine groups between day 0 and day 7. No significant difference ($P<0.05$) was seen for groups between day 7 and 14, or between day 14 and 21, or between day 21 and 28 (2nd vaccination). Both 'killed' vaccines induced a significantly ($P<0.05$) higher antibody response measured via HI, SRH and ELISA when compared to the 'live' canarypox vectored vaccine. Our results show that whilst aged horses possess baseline antibody titres to EIV antigen through previous infection and or vaccination, vaccination with either killed or live vaccines can boost this response.

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