An Accelerated Vaccination Schedule for Use in an Equine Influenza Emergency Response

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Horses vaccinated twice with a recombinant canarypox-vectored equine influenza vaccine (rCP-EIV) 14 days apart produced comparable antibody titers of similar duration to horses vaccinated using conventional vaccination schedules. The induction of rapid vaccine-induced immunity among susceptible horses may limit the impact of an equine influenza (EI) outbreak. Authors’ addresses: Equine Centre, The University of Melbourne, 250 Princes Highway, Werribee, Victoria 3030, Australia (El-Hage, Savage); Merial SAS, rue Marcel Mérieux, Lyon, 69007 France (Minke); and Equine Infectious Disease Laboratory, Veterinary Pre-Clinical Centre, The University of Melbourne, Parkville, Victoria 3010, Australia (Ficorilli, Gilkerson); e-mail: cmeh@unimelb.edu.au. © 2009 AAEP.

1. Introduction

Measures to rapidly contain virus spread and provide immunological protection are vital to control outbreaks of equine influenza (EI) in susceptible horse populations. An accelerated vaccination schedule has been used during the recent EI outbreaks in South Africa and Australia. No published efficacy data were available to date.

2. Materials and Methods

Fourteen naïve Thoroughbreds were vaccinated with a recombinant canarypox-vectored equine influenza vaccine (rCP-EIV) that expressed the haemagglutinin gene of two H3N8 EI viruses (A/eq/Newmarket/2/93 and A/eq/Kentucky/94). Horses were vaccinated on days 0, 14, and 105. Blood samples were collected immediately before each vaccination and on days 42, 56, 147, and 224. Antibody was detected by single radial hemolysis and hemagglutination inhibition. Absence of concomitant EI infection was confirmed by enzyme-linked immunosorbent assay (ELISA).

3. Results and Discussion

All vaccinated horses seroconverted after two vaccinations 14 days apart. Mean antibody levels at all time points were comparable with previous studies in horses vaccinated with rCP-EIV on a traditional V1-V2 interval of 4–6 wk. This accelerated vaccination schedule conferred rapid and long-lasting immunity to EI, and it will enable vaccination to be used strategically to ameliorate the impact of an EI outbreak on susceptible horses.

This study received financial support from Merial Limited.

Footnote

aProteqFlu-Te, Merial Limited, Lyon, 69007 France.