EFFICACY EVALUATION OF YURVAC® RHD AGAINST A CURRENT HIGHLY VIRULENT RHDV2 STRAIN

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INTRODUCTION

Vaccination against Rabbit Haemorrhagic Disease (RHD) is the principal measure to protect against this disease. YURVAC® RHD is a new recombinant vaccine intended for active immunization of rabbits from the age of 30 days to reduce mortality caused by RHDV and RHDV2. In fact, new strains of the RHDV2 have been detected recently and characterized as causing higher mortality in young rabbits and affecting older animals[2].

The aim of this study was to demonstrate the efficacy of YURVAC® RHD against one recent highly virulent strain of RHDV2 isolated in 2022 in The Netherlands.

MATERIALS AND METHODS

Animals and experimental design

Twenty-one rabbits of the minimum age recommended for vaccination (30 days) and free from antibodies against RHDV and RHDV2 were enrolled. The animals were divided into two groups; one group vaccinated with YURVAC® RHD (n=15) and one control group (n=6) which received a placebo PBS. All the animals were vaccinated via the recommended route of administration (subcutaneous) and according to the proposed schedule for vaccination (1 single dose). At day 14 post-vaccination, all the animals were challenged via the intramuscular route in order to assess the efficacy of the vaccine. The strain used in the efficacy study was isolated during an outbreak on a commercial rabbit farm in the Netherlands in 2022.

General clinical signs and mortality were recorded twice daily for 14 days after challenge, and liver samples were collected from dead animals in order to determine the presence of RHDV2 and to confirm the cause of death.

Serological Analysis

The serological response was evaluated by haemagglutination inhibition technique (HI) for the detection of antibodies against RHDV2[3]. Liver samples were analysed by haemagglutination technique to assess the presence of RHDV2 and to confirm the cause of death.

Statistical Analysis

Mortality after challenge was recorded throughout the study in both cases, and the proportion of animals that died per group was analysed by Chi-square test.

RESULTS AND DISCUSSION

All the rabbits included in the study were free of antibodies against RHDV and RHDV2 before vaccination. All the vaccinated animals seroconverted after vaccination.

The mortality results showed a 100% survival rate in the group vaccinated with YURVAC® RHD and a 0% survival rate in the control group, confirming the high virulence of the strain. All the deaths in the control group were reported between 24 and 72 hours after challenge. Statistically significant differences were observed between groups, thus confirming the efficacy of YURVAC® RHD against highly virulent strains (Figure 1).

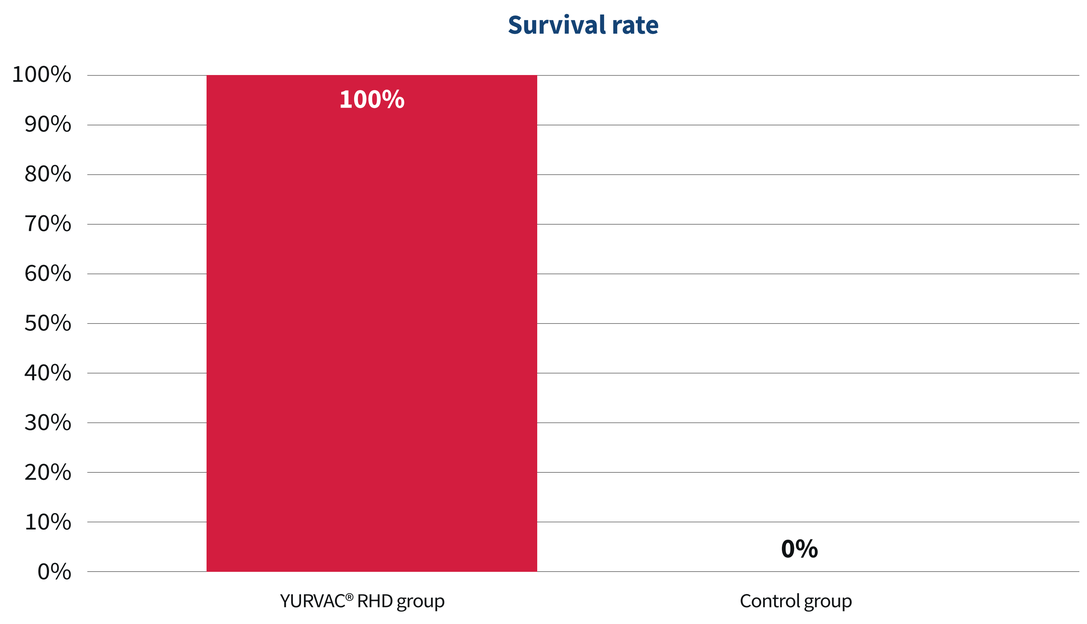

Figure 1. Percentage survival rate after challenge with highly virulent RHDV2 strains

Liver samples were collected and tested for the presence of RHDV2. In the control group, all deaths were confirmed as positive for RHDV2 in the liver, whereas no animals in the vaccinated group died.

The vaccinated group did not show any clinical signs throughout the study.

CONCLUSIONS

These results support those obtained in the efficacy studies conducted with another highly virulent strain isolated in France in 2020 and reaffirm the indication of YURVAC® RHD for protection against highly virulent RHDV2 strains.

ACKNOWLEDGEMENTS

The Authors wish to thank the laboratory technicians, veterinarians and animal handlers from the R&D Department of HIPRA.

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