RHINISENG®: EFFICACY OF THE BASIC VACCINATION SCHEME (VACCINATION AND REVACCINATION) AND THE BOOSTER VACCINATION

J Montané, M Monells, MC Ruiz, M Roca, A Camprodon, R March, M Sitjà

HIPRA, Avda La Selva, 135 - 17170 Amer (Girona) – Spain, agusti.camprodon@hipra.com

INTRODUCTION

RHINISENG® is a new vaccine against progressive (PAR) and non-progressive atrophic rhinitis (NPAR) indicated for pregnant sows and gilts to passively protect their offspring. The RHINISENG® recommended vaccination scheme includes a basic vaccination scheme (vaccination 8-6 weeks before farrowing and revaccination 4-3 weeks before farrowing) and a booster dose (4-3 weeks before the subsequent farrowing).

This study evaluated the vaccine pre-clinical efficacy and the duration of immunity for active immunization of the sows.

MATERIALS AND METHODS

Thirty-two pregnant sows and gilts free of antibodies against *Pasteurella multocida* toxin (PMT) and *Bordetella bronchiseptica* were divided into two groups. Sixteen sows were vaccinated with RHINISENG® (HIPRA) 8 weeks before farrowing and revaccinated 4 weeks later. A booster dose was administered 4 weeks before the subsequent farrowing. The sixteen control sows received 2 ml/dose of PBS as a placebo.

The piglets derived from vaccinated and control sows from the two subsequent farrowings were challenged as described in Table 1. The efficacy study design complied with the European Pharmacopoeia (EP) requirements for pre-clinical efficacy testing. The study was randomized and performed on a full-blinded basis.

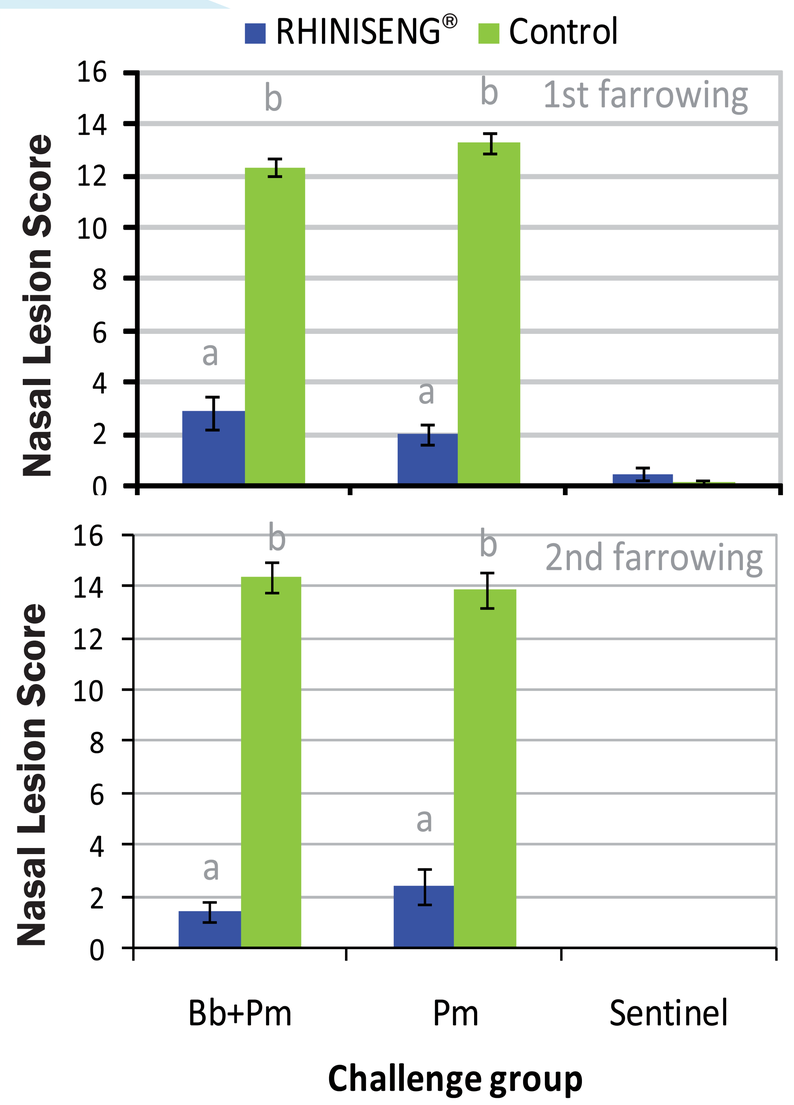
Table 1: Experimental design of piglet's infection.

Piglet's origin	*n*	Challenge group	Age of infection (days) 5-6	7	8-9	10
RHINISENG®	40	**Bb + Pm** (*n = 80*)	AA	**Bb**	-	**Pm**
Control	40					
RHINISENG®	40	**Pm** (*n = 80*)	-	-	AA	**Pm**
Control	40					
RHINISENG®	8	**Sentinels** (*n = 16*)	AA	CM	-	CM
Control	8					

At 6 weeks of age, the piglets deriving from vaccinated and control sows were euthanatized and atrophic rhinitis lesions were scored for turbinate bone atrophy and nasal septum deviation from 0 to 18, as described in the EP monograph and by Magyar *et al.* (2002). The primary variable for efficacy testing was the **NASAL LESION SCORE (NLS)** of atrophy.

RESULTS

Figure 1. Mean nasal lesion score (±SEM) in piglets.



a,b Different superscripts indicate statistical differences between treatment groups ($p < 0,05$, t-test for independent samples).

CONCLUSIONS AND DISCUSSION

RHINISENG® significantly reduced the atrophic rhinitis lesions reproduced in a severe experimental infection, both after applying the basic vaccination scheme and after boosting during the subsequent gestation (Figure 1), even when sows where vaccinated at the maximum interval recommended between the basic vaccination scheme and parturition, *i.e.* 8 and 4 weeks before farrowing.

The booster dose gave a protection at least equivalent to the response to the basic vaccination scheme in the present challenge trial. The antibody levels in vaccinated sow's colostrum against *P. multocida* toxin (PMT) were 8.3 times greater after the booster dose than after the basic vaccination scheme, which strengthens the suitability of administering a third dose of RHINISENG®.

REFERENCES

1. Magyar, T. *et al.* 2002. Vaccine 20: 1797-1802.

Laboratorios Hipra, S.A.
Avda. la Selva, 135
17170 Amer (Girona)
Spain

Tel (34) 972 43 06 60
Fax (34) 972 43 06 61
hipra@hipra.com
www.hipra.com