20th International Pig Veterinary Society Congress

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We are delighted that the International Pig Veterinary Society Congress 2004, decided to select South Africa as the host country for the 20th IPVS Congress. The Pig Veterinarians of South Africa will ensure that this congress lives up to the best traditions of previous congresses; incorporating an interesting and topical scientific programme, fascinating accompanying persons tours and an excellent social programme, allowing delegates the opportunity to network with their overseas colleagues.

This, the first IPVS congress on the African continent, will undoubtedly be of enormous benefit in generating solutions to the emerging pig veterinary challenges, especially those related to exotic and changing viral diseases, decreased use of antimicrobials and nutritional advances. The congress is important to further pig veterinary science in South Africa, to encourage younger veterinarians to join the pig industry, as a vehicle to generate funds for research and to improve the pig industry in Southern Africa.

South Africa is a magnificent and beautiful country, and offers tourists value for money. Thus, pre and post congress tours will be a major attraction for delegates to come to South Africa. Durban, in KwaZulu Natal, is a vibrant multi-cultured city with magnificent beaches, easily accessible game parks, theme villages and a moderate winter climate making it an ideal tourist destination. We urge our colleagues throughout the world to use this opportunity to get a glimpse of the continent’s rich and fascinating wonders and to enjoy the hospitality of their African friends.

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EVALUATION OF THE EFFECT OF VACCINATION ON THE TRANSMISSION OF MYCOPLASMA HYOPNEUMONIAE

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Introduction and Objectives
Mycoplasma hyopneumoniae (Mh) is the primary pathogen of enzootic pneumonia and causes important economic losses to swine industry. Vaccination is widely used to control the disease, but the effect of vaccination on the transmission of the organism has not yet been cleared up. The aim of the present study was to quantify the effect of vaccination on the transmission of Mh during the nursery period by means of an adjusted reproduction ratio (Rn).

Materials and Methods
Sixty Mh and PRRSV-free piglets of one week old were randomly allocated into two groups of 30 animals. One group was vaccinated in the neck with an inactivated vaccine (Stellamune® One, Pfizer, New York, USA) at one week of age. The other group was injected with sterile saline. All piglets were weaned at 21 days of age, and moved to the animal facilities of the Faculty of Veterinary Medicine, Ghent University, Belgium. The animals were allowed to acclimatize during 5 days. At 26 days of age, 18 seeder pigs (9 vaccinated and 9 non-vaccinated) were randomly selected for inoculation with a highly virulent Mh isolate. They were housed in 6 separated pens: 3 pens for the vaccinated pigs and 3 pens for the non-vaccinated ones. At 2 days post infection (DPI), 7 vaccinated or non-vaccinated seeder pigs were added to each pen. Transmission of Mh was monitored during a period of 6 weeks.

Body condition, appetite and coughing were scored daily. Blood samples were taken at vaccination and at 7, 23, 29, 36 and 44 DPI to detect antibodies against Mh. Forty four DPI, all animals were euthanized and pneumonic lesions were quantified using an adjusted reproduction ratio (Rn). The Rn was calculated following the maximum likelihood estimation based on the distribution of the final size of the experiments.

Results
All inoculated animals were found positive for Mh at the end of the study period. Animals were considered as infected when nPCR on BAL fluid was positive. In the 3 vaccinated groups, 16 of the 21 contact piglets were infected after 6 weeks, while in the 3 non-vaccinated groups, 19 of the 21 contact piglets became contact infected. The distribution of the infected animals and the calculated Rn is shown in Table 1. The Rn of 2.38 in the vaccinated group means that under the present experimental conditions, a vaccinated piglet infects on average 2.38 penmates during the nursery phase. In the non-vaccinated group, the Rn was 3.51. No significant difference was observed between the Rn of vaccinated and non-vaccinated groups (p=0.77).

Coughing scores were lower in vaccinated animals. The mean lung lesions scores in the vaccinated and non-vaccinated animals were 0.18 and 1.95, respectively (p<0.05). Average IF-scores were 0.81 for the vaccinated seeder pigs and 1.33 for the non-vaccinated seeder pigs (p=0.08). On average, 2.44 of the 9 investigated nasal swabs were positive in the experimentally infected and vaccinated animals, while this number was on average 3 of the 9 in the non-vaccinated experimentally infected piglets.

Discussion
Based on results of clinical observations and lung lesion scores, it is clear that the vaccination protects the animals against severe lesions. The efficacy parameters were significantly improved but the transmission was only numerically decreased and colonization of M. hyopneumoniae organisms in the lung could not be prevented by vaccination.

Based on the higher IF-scores and the higher number of nasal samples that was positive on nPCR, it is likely that the number of M. hyopneumoniae bacteria in the lungs of vaccinated animals was lower than in non-vaccinated animals. In this respect, vaccination may be able to reduce the excretion of M. hyopneumoniae; but the reduction might be insufficient to prevent most of the contact infections.

The present experiment showed that vaccination against M. hyopneumoniae with a commercial vaccine significantly reduced the clinical symptoms and lung lesions in pigs, but that only a limited and non-significant reduction in the transmission of M. hyopneumoniae could be achieved. Although the results may not be extrapolated to field conditions as such, it was illustrated that vaccination alone with the current bacterin vaccines will likely not be sufficient to eliminate M. hyopneumoniae from infected pig herds.

References