



BACTERIAL DISEASES

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IGG IMMUNE RESPONSE TO *TREPONEMA PEDIS* T A4 IN FIELD CASES OF EAR NECROSIS

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Introduction

Ear necrosis is a syndrome affecting pigs shortly after weaning and is regarded as an animal welfare issue. The etiology is unknown but *Treponema* spp., predominantly *Treponema pedis*, are commonly detected in the lesions. Oral treponemes have been suggested as source of infection, transferred by biting and licking behavior. The aim of this study was to investigate the IgG response in field samples towards a whole cell lysate of *T. pedis* and a putative virulence protein, TPE0673.

Materials and Methods

In eight Swedish pig herds experiencing outbreaks of ear necrosis, serum was sampled from pigs (n=56, 8-14 weeks of age) showing different stages of ear necrosis. *Treponema* spp. had previously been detected in samples from these pigs. The serological response was analyzed by in-house ELISAs for IgG antibodies towards *T. pedis* T A4 lysate and to *T. pedis* protein TPE0673. Serum from three 13 weeks old healthy pigs were used as controls. The significance of difference between mean absorbance values in field cases and in the control group was assessed by two-sample t-test and between different herds by one-way ANOVA.

Results

For both ELISAs, mean absorbance values from all field cases of ear necrosis was significantly higher than that of the control group. There was no significant difference in mean absorbance values between the different herds, which indicates a cross-reactivity between different strains of *T. pedis* and possibly even between other *Treponema* spp.

Discussion and conclusion

Our previous studies have shown a broad diversity of *Treponema* phylotypes in ear necrosis, but with a predominance of *T. pedis*, suggesting that this species is of specific importance. The results presented here indicate that either *T. pedis* is involved in more or less of all these cases of ear necrosis or that antigenic variation is small between the *Treponema* phylotypes involved.