The influence of experimental
*Yersinia enterocolitica* infection on the pregnancy course in sows – preliminary studies

II. Antibodies, C-reactive proteins and haptoglobin as an immunological response

A. Platt-Samoraj, W. Szweda, Z. Procajło

Department of Epizootiology, Faculty of Veterinary Medicine, University of Warmia and Mazury, Oczapowskiego 13, 10-719 Olsztyn, Poland

Abstract

The aim of the study was to determine the time of emergence and level of *Y. enterocolitica* antibodies in pregnant sows challenged orally with *Y. enterocolitica* in particular trimesters of pregnancy (groups I, II and III, respectively) and also the assignation of its influence on the CRP and Hp concentration in sera of pigs. Levels of antibodies measured by tube agglutination test increased slowly from 2 weeks post infection (wpi) and positive results were obtained not in all animals. In ELISA, in 2 weeks in all groups of infected animals high levels of antibodies against *Y. enterocolitica* were formed and lasted up to the end of the experiment. In newborn piglets in all groups, a significant decrease in antibody levels 6 weeks after birth was observed in both agglutination and ELISA tests.

Concentrations of CRP as Hp in all groups of infected animals increased in 1 week post infection. Statistically significant differences (P ≤ 0.05) between CRP levels in groups I and II (46-fold and 44-fold) as well as III (29-fold) were revealed. In case of Hp, statistically significant differences between groups of animals in the first week post infection were not observed.

Our findings indicate that *Y. enterocolitica* infection evoked strong and long-lasting immunological reaction in the form of specific antibodies production in all inoculated animals. The significant increase in CRP and moderate increase in Hp concentrations in the sera of pregnant sows also occurred. However, relationships between colostrums antibody levels in piglets' sera and phase of pregnancy when the *Y. enterocolitica* infection happened in sows were not observed.

Key words: *Yersinia enterocolitica*, challenge, sow, pregnancy, antibodies, CRP, Hp

Introduction

The immune system is weakened during the pregnancy because of the fetal development. That is why an organism can react to infection differently than usual, even if it caused by a low-virulence microorganism. Additionally, the possibility of the appearance of complications increases during this period (Glassman et al. 1985, Abram et al. 2003).

The microorganism infiltration into the body