VVD-OP-01

CHANGES IN THE EXPRESSION OF CD163 IN PORCINE ALVEOLAR MACROPHAGES AND ASSOCIATED LESIONS IN PIGS EXPERIMENTALLY INFECTED WITH PRRSV-1 STRAINS OF DIFFERING VIRULENCE

I.M. Rodriguez-Gomez 1, F.J. Pallares 2, J.M. Sanchez-Carvajal 1, I. Diaz 3, E. Mateu 4, L. Carrasco 1, J. Gomez-Laguna 1.

1 University of Cordoba, Cordoba, Spain; 2 University of Murcia, Murcia, Spain; 3 CRESA-IRTA, Bellaterra, Spain; 4 Autonomous University of Barcelona, Bellaterra, Spain.

Introduction

Highly virulent PRRSV strains causing severe disease have been reported in Europe, Asia and North America, associated with high fever, anorexia, severe lung lesions and high mortality. The aim of this study was to characterise the impact of two PRRSV strains of differing virulence in the lung of piglets.

Material & Methods

Seventy four-week old piglets were randomly distributed in 3 separate pens and inoculated intranasally with 105 TCID50 of either the low-moderate 3249 or the highly virulent Lena PRRSV-1 strains, a group was kept as control (mock-inoculated). Clinical signs were recorded daily after challenge and animals were sequentially euthanised from day 1 to day 13 post-inoculation (dpi). Left lung was used to perform bronchoalveolar lavages (BAL) for studying the number of PRRSVinfected

pulmonary alveolar macrophages (PAMs) as well as CD163 expression by flow cytometry; whereas, right lung was fixed in 10% formalin for histopathology.

Results

Lena-infected animals showed the highest clinical scores and gross lesions (in most cases accompanied by secondary bronchopneumonia), with the maximum being detected between 6 and 8dpi. In Lena-infected animals, the number of PAMs isolated from BAL dramatically dropped from 6dpi onwards, but at 8 and, particularly, 13dpi this happened in 3249-infected piglets as well. These results coincided with severe gross lesions and a higher number of PRRSV-positive PAMs (more

numerous in Lena group). The median fluorescence intensity (MFI) of CD163 was meaningfully decreased in PAMs isolated from infected piglets when compared to control. However, infected PAMs exhibited higher MFI of CD163 than non-infected PAMs from the same infected piglet.

Discussion & Conclusion

The highly virulent PRRSV-1 Lena caused severe clinical signs and lesions associated with earlier and enhanced PRRSV replication when compared with 3249 strain. Moreover, the regulated expression of CD163 tied to severe lesions and increased PRRSV replication may be determined by the virulence of PRRSV.