

Antimicrobial susceptibility for *Actinobacillus pleuropneumoniae* recovery from swine with pleuropneumonia

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Abstract:

Respiratory diseases are among the major health problems in all countries with intensive pig production, being the *Actinobacillus pleuropneumoniae* (App) one of the most important infectious agents found in swine slaughter. The parenteral antibiotic therapy applied to pigs affected by App is usually effective if carried out in the early stages of the disease, avoiding mortality. However, the resistance to the antibiotics commercially available is a concern, since these become widely used. Thus, the aim of this study was to determine whether strains of App, isolated over the past few years, have been changed in sensitivity when confronted with two antibiotics used to treat respiratory diseases in pigs: enrofloxacin (ENO) and ceftiofur (CEF). Therefore, it was performed Minimum Inhibitory Concentration Test (MIC) by the broth microdilution and antibiotic sensitivity testing on agar plates, in accordance with the Clinical Laboratory Standards Institute (CLSI). The eight strains of App obtained between 1997 and 2011 were used. These, were selected from the collection of Embrapa Swine and Poultry and tested against the ENO and CEF antimicrobials. In the antibiogram, all strains were sensitive to CEF. However, for the ENO, the two isolates in 2011 had intermediate sensitivity and the others were sensible. Regarding the CIM, all strains were sensitive to both antimicrobials, and the MIC values for ENO: 44,5% of strains: 0,008 mg/ mL; 22,2% of strains: 0,016 mg/ mL; 11,1% of strains: 0,031 mg/ mL; 11,1% of strains: 0,125 mg/ mL e 11,1% of strains: 0,25 mg/ mL e para CEF: 55,55% of strains: 0,062 mg/ mL; 33,3% of strains: 2 mg/ mL e 11,15% of strains: 1 mg/ mL. Thus, despite the limited number of samples, we can conclude that there was no modification in the sensitivity profile of these isolates App against the antimicrobial CEF. In the case of ENO antimicrobial, although all strains have presented CIM within the sensitivity range, the two strains isolated more recently presented intermediate susceptibility testing, which could mean an the beginning of modification in the susceptibility profile. That is, new studies with larger samples and antimicrobials can better elucidate the susceptibility profile over the years and make important contributions to the rational use of antibiotics in pig farming.

Keywords: *Actinobacillus pleuropneumoniae*, swine, Minimum Inhibitory Concentration Test, antibiotics, antimicrobial susceptibility.

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