COMPARITION OF IN VITRO SENSITIVITY OF BACTERIAS STRAINS FRONT CHLORTETRACYCLINE AND OXITETRACYCLINE

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Introduction

The antimicrobials utilization in the control of swine diseases is a common practice in swine industry world-wide, however in the last decades, an increase in the pathogens resistance has occurred front the diverse antimicrobials. The indiscriminate and inadequate utilization of these drugs are the main responsible factors for increasing the bacterial resistance, not only decreasing the treatments effectiveness, but also limiting each time more the available and efficient drugs for treatment. For the rational and correct utilization, the efficient drug in the control of the present pathogen in the herd must be determined, preventing the resistance. For this, there are the antibiogram tests, laboratorial methods to evaluate the bacterial in vitro sensitivity front different antimicrobials. During long date, it was considered that Oxitetracycline and Chlortetracycline, being of the same group of antimicrobials, tetracyclines, possessed similar results, not testing neither differentiating the used bases (1). This work had as objective to compare the in vitro sensitivity of strains of *Escherichia coli*, *Pasteurella multocida* and *Actinobacillus pleuropneumoniae* front the two bases of the tetracycline group: Oxitetracycline and Chlortetracycline.

Materials and Methods

Sixty bacteria strains had been isolated in the year of 2006, been twenty Escherichia coli strains from enteric problems, twenty Pasteurella multocida strains from respiratory problems and twenty Actinobacillus pleuropneumoniae strains also from respiratory problems.

The isolation and the identification of these bacteria had been made through described methodology (2). After the isolation, the antibiogram was carried through in Agar Mueller Hinton for Chlortetracycline (antibiotic discs yielded by Alpharma) and Oxitetracycline using itself discs impregnated with 30 mcg of each drug. Previously to the antibiogram test, the discs quality and effectiveness had been tested, following criteria from NCCLS and laboratory good quality practices. Thus, the tested bacterial samples had been classified in sensible, resistant and intermediate.

Results

The test results are listed in table 1.

Table 1. In vitro sensitivity test results from *Escherichia coli* (E.coli), *Pasteurella multocida* (Pm) and *Actinobacillus pleuropneumoniae* (APP), front Chlortetracycline and Oxitetracycline.

	Chlortetracycline		
	Resistant	Intermediary	Sensible
E.coli	80%	5%	15%
Pm	25%	5%	70%
APP	5%	5%	90%
Average	36,66%	5%	58,33%

	Oxitetracycline		
	Resistant	Intermediary	Sensible
E.coli	100%	0%	0%
Pm	55%	0%	45%
APP	15%	0%	85%
Average	56,66%	0%	43,33%

Discussion

These results indicate that there is difference in the resistance of bacterial strains front the used bases. The main comment is that samples can present resistance to Oxitetracycline and sensitivity to Chlortetracicline. In a work previously published (1), the author found similar results in MIC (Minimum inhibitory Concentration), where Chlortetracycline presented lesser sensitivity in doses up to 4 times than Oxitetracycline for respiratory pathogens and up to 10 times for enteric pathogens, despite the sensitivity tax had been low. With this, we should attempt to the antimicrobial bases used in the antibiogram tests. For example, the existing information in our country indicates a considerable resistance to the agent Pasteurella multocida (3,4,5). However, in an attitude of rational antimicrobials utilization to preserve the bases of ample specter, is useful to evaluate sensitivity from each molecule. It is suggested, when will have intention to use Chlortetracycline, Oxitetracycline or Doxicycline, to request specific antibiograms for these bases.

References

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