Antimicrobial resistance of human pathogenic *Y. enterocolitica* and *Y. pseudotuberculosis* of porcine and human origin and variation between pig farms

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Yersiniosis is the third most frequent reported zoonose in Europe and caused by human pathogenic *Y. enterocolitica* and *Y. pseudotuberculosis*. Consumption of pork is the main source of human infection and healthy pigs have been identified as the primary reservoir. During pig production, antimicrobial agents are administered as treatment or prophylaxis, inducing antibiotic resistance. Nevertheless, little information is available about (1) the susceptibility of human pathogenic *Y. enterocolitica* and *Y. pseudotuberculosis* of porcine and human isolates to antibiotics; (2) the antimicrobial resistance patterns on pig farms and (3) the relation between the antimicrobial use at the farm and the resistance level of porcine isolates.

The antimicrobial resistance of 870 *Y. enterocolitica* isolates from 43 pig farms, 21 *Y. pseudotuberculosis* isolates from 7 pig farms and 78 isolates from human origin was analyzed by the MIC broth dilution method. The following antimicrobial agents were tested: amoxicillin, ceftiofur, gentamicin, nalidixic acid, colistin, doxycyclin, tylosin and sulfamethoxazole/trimethoprim.

No porcine *Y. enterocolitica* isolate showed susceptibility to tylosin and amoxicillin, while the highest susceptibility rate was registered for ceftiofur. There were 77 multiresistant porcine *Y. enterocolitica* isolates involving 4 up to 7 antimicrobial agents. All *Y. pseudotuberculosis* isolates were resistant to amoxicillin and susceptible to ceftiofur and gentamicin. Only one *Y. pseudotuberculosis* isolate was multiresistant. All 78 human *Y. enterocolitica* isolates were resistant to tylosin and sensitive to ceftiofur. Thirty-seven isolates were found resistant to 4 up to 6 antimicrobials. Ceftiofur showed the lowest MIC90. Most farms (n=36) harbored 100% sensitive *Y. enterocolitica* isolates to doxycyclin, ceftiofur, nalidixic acid and gentamicin. In the end, a relation between using antimicrobial agents at the farm and the resistance pattern was not detected.

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