WHAT IS THE ISSUE OF ANTIMICROBIAL RESISTANCE IN VETERINARY PRACTICE?

Bernd-Alois Tenhagen, Annemarie Käsbohrer, Andreas Schroeter, Beatriz Guerra, Reiner Helmuth & Bernd Appel

Federal Institute for Risk Assessment, Department Biological Safety, National Reference Laboratory for Antimicrobial Resistance, Max-Dohrn-Str. 8-10, D-10589 Berlin, Germany

Antimicrobial resistance (AMR) is a key concern for veterinary practitioners for several reasons. This has led to the development of guidelines for the prudent use of antimicrobials. In Germany, such guidelines were first published in 2000 and revised in 2010. The most obvious reason is the limitation of treatment options in case of infectious diseases caused by resistant bacteria.

A second concern is AMR developing in zoonotic pathogens that may be transmitted to humans via food. This issue has triggered resistance monitoring in the food chain as foreseen by EU-Directive 2003/99/EC. Moreover, livestock professionals are at risk of acquiring resistant bacteria from the animals they work with via contact as recently underlined by the spread of livestock associated MRSA (Multi-Resistance Staphylococcus aureus) in livestock professionals.

A third concern is resistance in commensal bacteria such as Escherichia coli or Enterococci. As many of the resistance determinants are located on mobile genetic elements, they may use the commensal flora as a vehicle to spread in the population and then be transferred to pathogens.

However, even with optimal conditions animals might contract infectious diseases. While we should strengthen our efforts to reduce the incidence of these infections, we will not be able to eradicate them all.

Therefore we might need to use antimicrobials and we need to do it in the optimum way, i.e. at the right time, using the appropriate drug at the correct dosage. To this end, early and exact diagnosis of infections and appropriate knowledge on the resistance of the bacteria are the key. Hence, continuing education on diagnostic opportunities and current treatment concepts and monitoring of AMR in the herds that are treated are essential, once our primary efforts to prevent infection have failed. Clinical disease requiring antimicrobial treatment should always be followed by a critical reflection how future infections can be avoided.