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Relationship between animal welfare and the use of antibiotics in food animals

Antibiotic resistance is a very serious threat to human and animal health. It can only be tackled by an international coordination of all efforts as in the One Health Concept. Promoting responsible use and reducing the amount of antibiotics used in people, and animals worldwide is vital for maintaining the efficacy of the antibiotics to fight bacterial diseases in animals and humans. Animals that are well cared for and appropriately housed, will experience a better welfare, be less prone to infections and will need fewer antibiotics. The European veterinary profession, having a key role in animal health, welfare, food safety, environmental protection and sustainable keeping of animals is committed to take leadership in fighting antimicrobial resistance.

Bacterial resistance is not a new phenomenon, but an ancient one. Antibiotic resistance in bacteria against naturally occurring antibiotic substances is a natural phenomenon that predates the modern selective pressure of clinical antibiotic use. However, the resistance of bacteria against the “man-made” antibiotics that are used to fight bacterial disease in humans and animals poses an increasing threat to human and animal medicine, health and welfare. Antibiotic resistance can lead to failure of treatment for severe and fatal diseases that we currently perceive as curable. It also precludes interventions that modern medicine allows for both humans and animals.

Since the early 1990’s, the European medical and veterinary community has worked hard in curbing bacterial resistance, in particular by promoting the rules of “responsible and prudent use of antibiotics” both in humans and in animals. The emergence of Vancomycin resistant *Enterococci* (VRE) in livestock at the end of the last century and the occurrence of the livestock-associated MRSA in food animals (laMRSA) in 2006 and more recently the presence of extended spectrum ß-lactamase producing *Enterobacteriacea* (ESBL) in food animals and in food of animal origin has emphasised the need for reducing the amount of antibiotics used in food animals.

This has led to a conflicting societal demand, on the one hand society very much wants to reduce the amount of antibiotics used, and on the other hand there are concerns that this reduction could lead to animal welfare challenges. Antibiotics are vital and will remain vital to treat bacterial infections in animals and humans. In short animals need treatment too. Reduction of antibiotics should be achieved by reducing the need to use antibiotics rather than by reducing the amount and time span of

necessary antibiotic treatments in case of a properly diagnosed bacterial infection of animals.

There is no conflict between the responsible and prudent use of antibiotics and good animal welfare. On the contrary; responsible and prudent use embraces the need to improve the husbandry of animals in the context of improving biosecurity, and hygiene, reducing the frequency of bacterial infections and the need for correct antibiotic treatment after diagnosis. Introducing positive welfare steps will reduce stress and therefore reduces the susceptibility to infection.

Competent authorities, the veterinary and medical profession, animal owners and the public have to be aware of the importance of using antibiotics responsibly. FVE has developed several leaflets to promote responsible use of antibiotics in animals[1].

Methods to reduce the frequency of use of antibiotics in animals are:

a) Animal production should not be dependent on antibiotic use. However, if animals get sick and treatment is indicated this should be given compliant with responsible use. Such use should be in parallel with good management, good housing, appropriate nutrition for preventing enteric diseases and a high level of external and internal biosecurity on farms, to ensure that the infection pressure is kept at a minimum level. Introducing positive welfare steps will reduce stress and therefore reduces the susceptibility to infection.

b) Routine use of antibiotics as prophylaxis should be phased out and, in a longer time perspective, completely come to an end. Disease prevention must be based on proper husbandry practices and we should move away from the use of antibiotics against expected bacterial infections at certain points in time of the life of food animals.

c) Metaphylaxis - the treatment of a whole group of animals after in some animals of the group the diagnosis of clinical disease is made - should only be done under direct veterinary supervision when there is definitive diagnosis or strong professional suspicion of highly contagious disease. Metaphylaxis must always be complementary to other measures for disease prevention such as improved biosecurity.

d) Whenever possible, the oral treatment of entire groups of animals (flock and herd treatment) should be aspired to. Instead, it should be endeavoured to apply treatment and care targeted for single animals or small groups of those infected in separate rooms or pens. This way the amount of active antibiotic substances can be kept to a minimum while still tackling the infection where needed.

e) Improve the animal health status by all known and proven measures to prevent the occurrence and spread of bacterial animal diseases. This includes regular veterinary health visits, where the veterinarian together with his client draws up an effective health plan including relevant biosecurity measures, vaccination, good housing, good management, appropriate nutrition, positive welfare measures and relevant genetic

[1] http://www.fve.org/veterinary/medicines.php#18

breeding goals. The breeding value of livestock is still to a large extent calculated on the productivity of the animals. Breeders should be encouraged to calculate breeding goals on health and longevity, including disease resistance, and not solely productivity, to decrease the need for antibiotic treatment. Care should be taken to avoid disease spread during transport or mixing of animals.

The level of reduction of antibiotics possible without animal welfare consequences will be different from region to region. This depends on factors such as the animal species, the disease status in the region, climate conditions, vaccination programmes, and the organisation of the food animal production sector in question.

To achieve these goals, ***monitoring and benchmarking systems on farms and at slaughter should include health and welfare parameters as well as monitoring antibiotic consumption and resistance***. The European veterinary profession is well positioned to promote such mechanisms.

Examples of successful reduction efforts can be found in Europe where the antibiotic use in animals has been significantly reduced without negatively affecting the welfare of the animals and without impairing the efficiency of the production of food of animal origin in these countries (such as Sweden, Denmark, Germany, the Netherlands and others).

This shows that a positive association can be seen often between good animal welfare and reduced antibiotic use. Animals which are well cared for and appropriately housed, will be less prone to infections and will need less antibiotics. In other words, ***the more successful the actions aiming at improving animal health and welfare are, the more successful will be the attempts to reduce the use of antibiotics and to curb bacterial resistance in food animals.***

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