

Colistin use by Veterinarians

REGISTRAR OF MEDICINES



It is recommended that Colistin not be used in food producing animals at all, unless the veterinarian can justify its use at the hand of a sensitivity test and as a very last resort to treat an animal. Any conduct to the contrary would be regarded by Council as unprofessional conduct.

Please read the message from the Registrar of Medicines addressed to all veterinarians.



Antibiotics have played a vital role in human and animal health care for more than 50 years. There is growing awareness about bacterial resistance to antibiotics, and recently with a special focus on colistin. Until fairly recently, it was believed that Gram-negative bacteria develop resistance to colistin through mutation or adaptation mechanisms. Plasmid-induced resistance has been described early in 2016 following the discovery of the *mcr-1* gene. The *mcr-1*-containing plasmid was found to have a high rate of in vitro transfer in *E. coli*, *Klebsiella pneumoniae* and *Pseudomonas aeruginosa*. The gene was transferable via the food chain and via environmental contamination. The new mechanism of spread of resistance (plasmid-mediated) is a serious concern because of the potential spill-over between humans and animals.

The polymyxin group of antibiotics to which colistin belongs were replaced by other antibiotics in the 1970s as a result of concerns about nephro- and neurotoxicity. However, in the domain of animal health, colistin has been used for decades as an effective and relatively cheap antibiotic, especially in the feed and water of pigs and poultry. Poor absorption of colistin from the intestines precluded toxicity problems in animals.

The emergence of carbapenemase-producing bacteria (CPE) of the family Enterobacteriaceae globally and also in South African hospitals poses the greatest threat to patient safety in terms of antibiotic resistance. Treatment of CPE commonly necessitates use of the last line of antibiotic defense, namely colistin. Where resistance to colistin exists in CPE, it effectively renders the infection untreatable. CPE have now spread throughout South Africa.

At the Medicines Control Council meeting of April 2015, Council decided that there is a need for a broader consultation by setting up an MCC-driven Inter-departmental Joint Working Group for all different role players. During the first meeting of the Colistin Working Group on 20 April 2016, concerns were expressed about the compounding of colistin and its veterinary use in the feed and water of food-producing animals. Large quantities of colistin active pharmaceutical ingredient (API) are imported into the country and compounded. Recommendations from the Working Group on the future of colistin will be submitted to the MCC when all relevant information from stake holders have been reviewed.

In the interim, this communication is an appeal to the veterinary profession to stop using colistin altogether on a voluntary basis. Compliance with this request will indicate that the veterinary profession is serious about contributing to the control of resistance by applying responsible antibiotic stewardship for the benefit of humans and animals. In the event that colistin is prescribed, it should only be used based on susceptibility assays which show the drug to be the only effective molecule. ■