

S095

1-hour Symposium

Hot topics in helminthic diseases

Anti-helminthic drug resistance: a big problem in veterinary practice, are humans next?

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More than 700 million treatments are being delivered annually for the control/elimination of neglected tropical diseases (NTD) due to helminths and amenable to preventive chemotherapy (PC), i.e. lymphatic filariasis, onchocerciasis, schistosomiasis and soil-transmitted helminthiasis. Yet, if the ambitious 2020 goals set in the NTD Roadmap are to be met, it is necessary to scale up PC interventions and reach approximately 1.2 billion more people than those targeted in 2013. While commitment by partners as recently reaffirmed through the London Declaration (<http://unitingtocombatntds.org>) has enabled large-scale donations of benzimidazoles, ivermectin, diethylcarbamazine, and praziquantel, the priorities are to increase the capacity within national NTD programmes to deliver the treatments and to monitor that efficacy of anthelmintic drugs is maintained.

The risk of drug resistance is a potential threat for any of the mentioned drugs, and is already a reality in animals, as such drugs are also used in veterinary practice. In order to be ready to face this challenge should it appear in humans as well, the World Health Organization has set up a working group of experts dedicated to develop policies and practices to monitor drug efficacy (http://www.who.int/neglected_diseases/preventive_chemotherapy/anthelmintic_drug_efficacy/en/). One of the key measures taken has been the implementation of multicentric trials assessing efficacy of single-dose treatments through standard operating procedures, with the aim of establishing reference efficacy thresholds. This step has enabled the development of guidelines that provide all the necessary practical information to programme managers. Guidelines are adaptable to different public health contexts, as they may differ in intensity of infection before treatment, sensitivity of diagnostic methods used, and timing of follow up of patients (http://apps.who.int/iris/bitstream/10665/79019/1/9789241564557_eng.pdf?ua=1).

Mathematical modelling are being developed to assist NTD programme managers in endemic countries to predict the expected impact of treatment, thus setting an alarm bell that will ring if such impact is not observed. Treatment failures due to resistance may be one possible cause but thorough investigations should be made to exclude other confounding factors.

The challenge in the control/elimination of helminth diseases is to scale-up treatment coverage to reach as many people in need, and, at the same time, to safeguard the efficacy of the few good drugs available. Whilst few new drugs are in the pipeline, the best strategy for preventing/delaying the occurrence of resistance is the use of drugs in combination, and recent trials have gone towards this direction.

PC's primary aim is decreasing morbidity, and evidence shows that repeated treatment can be sufficient to interrupt transmission for some diseases. However, the implementation of complementary interventions, including health education, provision of safe water and sanitation can accelerate the accomplishment of this objective, and reduce drug pressure on parasites and therefore the risk of development of resistance.