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Taeniasis/neurocysticercosis control: Medical aspects

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Neurocysticercosis due to a larval stage of *Taenia solium* is a serious public health problem across low and middle-income countries of Latin America, Sub-Saharan Africa and Asia. There is a considerable problem in Europe and the United States, caused by immigration of *T. solium* carriers from endemic countries. Neurocysticercosis has a various clinical presentation, which ranges from asymptomatic infections to fatal cases. The most common symptoms are a late-onset epilepsy or partial seizures. The control of neurocysticercosis considers two aspects of *T. solium* transmission; it may be an indirect meat-born zoonotic control measure preventing human taeniasis by limitation of cysticercosis in pigs and a direct control measure by eradication of human tapeworm carriers, being the sole faecal-borne source of cysticercosis for humans and pigs. The control measures can be realised by the organised local or regional eradication programmes as well as the routine daily medical and veterinary services. There is much progress in the veterinary control measures in endemic areas. However, the medical control of neurocysticercosis is still inadequately realised despite the improvements in diagnosis (faecal antigen tests), new taenicides (niclosamide, praziquantel) and better understood epidemiology (focality of transmission) of human *T. solium* taeniasis/cysticercosis. Several rules are proposed to be accepted in the medical control measures which are as follows: (1) leaving untreated any detected case of *T. solium* taeniasis, spreading neurocysticercosis, is a medical error, (2) due to difficulties in *T. solium* diagnosis the specific anthelmintic treatment has to be considered also in a suspected case of taeniasis (e.g. there is a potential carrier of a *T. solium* tapeworm in every fourth case of neurocysticercosis), (3) any *Taenia* tapeworm infection (*T. solium*, *T. saginata*, *T. asiatica*) deserves a specific treatment in order that *T. solium* is not missed, (4) modern or traditional taenicides has to be easily available where needed, possibly free of charge, (5) instruction has to be elaborated how to avoid the neurologic adverse reactions to praziquantel and preserve the stability and efficacy of niclosamide, (6) a professional training in the control of taeniasis/neurocysticercosis has to be intensified in endemic areas, especially among mental health, public health and primary health care services as well as among veterinarians (7) preventive screening of the *T. solium* tapeworm infected immigrants or visitors to endemic countries as well as local street meat vendors and specific treatment of those with a positive faecal antigen test, needs to be considered. In the medical control measures a specific taenicide treatment of *Taenia solium* taeniosis is to be considered in: 1. any detected case of human taeniosis – leaving her/him untreated is a medical error. Any suspected case of human taeniosis which is potentially among or in: 2a. in a case of recent of late-onset epilepsy. 2b. among the people/family members living around the recent case of late-epilepsy. 2c. among inhabitants of a farm producing cysticercotic pigs. 2d. in a locality with the prevalence of pig cysticercosis over 5%. In points 1 and 2a the treatment is individual, in points 2b and 2c a group treatment is to be considered preferably after screening with a faecal antigen test, in point 2d mass-treatment is being advised. Close medical and veterinary cooperation is necessary in points 2c and 2d.

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