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A longitudinal analysis of albendazole treatment effect on neurocysticercosis cyst evolution using multistate models (Article)

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Abstract

Background: In neurocysticercosis, the larval form of the pork tapeworm *Taenia solium* appears to evolve through three phases-active, degenerative and sometimes calcification-before disappearance. The antihelminthic drug, albendazole, has been shown to hasten the resolution of active cysts in neurocysticercosis. Little is known about the time cysts take to progress through each phase, with or without treatment. Methods: We reconfigured brain imaging data from patient level to cyst level for 117 patients in a randomized clinical trial of albendazole in which images were taken at baseline, 1, 6, 12 and 24 mo. Applying a multistate model, we modelled the hazard of a cyst evolving to subsequent cyst phases before the next imaging (vs no change). We examined the impact of albendazole treatment overall and by patient and cyst characteristics on the hazard. Results: Albendazole accelerated the evolution from the active to degenerative phase (HR=2.7, 95% CI 1.3 to 6.5) and from the degenerative phase to disappearance (HR=1.9, 95% CI 1.1 to 3.9). Albendazole's impact was stronger for patients who were male, did not have calcified cysts at baseline and who had multiple cysts in different locations. Conclusions: This research provides a better understanding of where in the cyst trajectory albendazole has the greatest impact. © The Author(s) 2019.

SciVal Topic Prominence ⓘ

Topic: Neurocysticercosis | Cysticercosis | Neurocysticercosis NCC

Prominence percentile: 93.822 ⓘ

Author keywords

Albendazole Brain Central nervous system Multistate model Neurocysticercosis *Taenia solium*

Indexed keywords

EMTREE drug terms: albendazole placebo

EMTREE medical terms: adult aged Article calcification cyst (resting stage) degeneration disease course evolution female human longitudinal study major clinical study male multistate model neurocysticercosis neuroimaging risk factor sex difference statistical analysis statistical model treatment outcome very elderly

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albendazole, 54965-21-8

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