

Neurocysticercosis and HIV Infection

Neurocisticercosis e infección por VIH

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Dear Editor,

We thank Drs Joob and Wiwanitkit for their commentary on our paper¹. We agree with them—both neurocysticercosis (NCC) and human immunodeficiency virus (HIV) are not uncommon in many tropical countries and co-infection has only been reported sporadically. For this very reason, we reviewed all published cases of NCC and HIV co-infection to determine whether we could clarify their relationship².

The study from Tanzania³ was included in our study, and it suggested that HIV and NCC were not associated, as the prevalence of NCC was similar among HIV-positive and HIV-negative individuals. The autopsy study from Brazil⁴ was also cited in our paper² and, effectively, as stated by Joob & Wiwanitkit, the fact that HIV/AIDS was the main underlying cause of death when NCC was an associated cause is compelling and highlights the need to better understand the relationship between these two infections.

Regarding the frequency of asymptomatic NCC among individuals with HIV, although we were able to find only two published cases of this phenomenon, it is probably not uncommon, as is the case among HIV-negative individuals^{5,6}. The case reported by Agaba and colleagues⁷ is interesting, but cases of subcutaneous cysts associated with asymptomatic NCC have also previously been described among individuals without HIV^{8,9}. To date, there is no evidence to suggest that subcutaneous cysts are more or less common among individuals with HIV.

Finally, we would also like to emphasize that, in a very recent publication, a study from South Africa examining the imaging characteristics of HIV/NCC co-infection reported that the published cases differed substantially from their local cases¹⁰. Therefore, we would suggest that researchers examine local cases in case-control studies to provide further evidence, to better understand the relationship between the two infections.

References

1. Joob B, Wiwanitkit V. Neurocysticercosis and HIV Infection. *Letter. Arq Neuropsiquiatr.* 2019 Nov;77(11):836. <https://doi.org/10.1590/0004-282X20190145>
2. Herrera Vazquez O, Romo ML, Fleury A. Neurocysticercosis and HIV Infection: what can we learn from the published literature? *Arq Neuropsiquiatr.* 2019 May;77(5):357-65. <https://doi.org/10.1590/0004-282X20190054> PMID:31189001
3. Schmidt V, Kositz C, Herbinger KH, Carabin H, Ngowi B, Naman E, et al. Association between *Taenia solium* infection and HIV/AIDS in northern Tanzania: a matched cross sectional-study. *Infect Dis Poverty.* 2016 Dec;5(1):111. <https://doi.org/10.1186/s40249-016-0209-7>
4. Martins-Melo FR, Ramos Junior AN, Cavalcanti MG, Alencar CH, Heukelbach J. Reprint of "Neurocysticercosis-related mortality in Brazil, 2000-2011: epidemiology of a neglected neurologic cause of death". *Acta Trop.* 2017 Jan;165:170-8. <https://doi.org/10.1016/j.actatropica.2016.11.009>
5. Fleury A, Gomez T, Alvarez I, Meza D, Huerta M, Chavarria A, et al. High prevalence of calcified silent neurocysticercosis in a rural village of Mexico. *Neuroepidemiology.* 2003 Mar-Apr;22(2):139-45. <https://doi.org/10.1159/000068748>
6. Fleury A, Morales J, Bobes RJ, Dumas M, Yáñez O, Piña J, et al. An epidemiological study of familial neurocysticercosis in an endemic Mexican community. *Trans R Soc Trop Med Hyg.* 2006 Jun;100(6):551-8. <https://doi.org/10.1016/j.trstmh.2005.08.008>
7. Agaba E, Modi D, Gunduz O, Modi Z. Subcutaneous nodules of cysticercosis as a sign of asymptomatic neurocysticercosis in an HIV positive patient. *Rev Soc Bras Med Trop.* 2018 Nov-Dec;51(6):861-3. <https://doi.org/10.1590/0037-8682-0178-2018>
8. Schmidt DK, Jordaan HF, Schneider JW, Cilliers J. Cerebral and subcutaneous cysticercosis treated with albendazole. *Int J Dermatol.* 1995 Aug;34(8):574-9. <https://doi.org/10.1111/j.1365-4362.1995.tb02959.x>
9. Mouhari-Toure A, N'Timon B, Kumako V, Darre T, Saka B, Tchaou M, et al. [Disseminated cysticercosis: report of three cases in Togo]. *Bull Soc Pathol Exot.* 2015 Aug;108(3):165-70. French. <https://doi.org/10.1007/s13149-015-0433-6>
10. Kuehnast M, Andronikou S, Hlabangana LT, Menezes CN. Imaging of neurocysticercosis and the influence of the human immunodeficiency virus. *Clin Radiol.* 2019 Sep 13. pii: S0009-9260(19)30373-3. <https://doi.org/10.1016/j.crad.2019.08.001>

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Conflict of interest: There is no conflict of interest to declare.

Received 12 October 2019; Accepted 21 October 2019.

