Does the capsule component of the Cryptococcus neoformans glucuronoxylomannan impair transendothelial migration of leukocytes in patients with Cryptococcal meningitis? (letter)

Lipovsky, M.M.; van Elden, L.J.R.; Walenkamp, A.M.E.; Dankert, J.; Hoepelman, A.I.M.

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Reply

To the Editor—We appreciate a he commen s of Thompson [1], who kindly provided some da a supplementary o our findings [2]. As originally s a ed, we failed o find an associa ion of serum reac ivi y wi h clinical profiles, including pa ien age or sex or dur a mons, si e, or number of molluscum lesions. A hough Thompson did no repor a correla ion of serum reac ivi y wi h he rea ive an ibody i er in heir ELISA sys em and clinical symp oms [3], we hink i should be no ed ha 1 of he weakly posi ive sera lacked reac ivi y wi h 33/35-kDa polypep ides [1]. These resul s sugges ha he ypes of an ibody may differ according o heir reac ivi y measured by ELISA. Fur her lon gi udinal sudes wi h a large popul a ion is necessary o clarify he clinical significance of he wo ypes of an ibody.

Unfor una ely, we did no purify molluscum con agiosum virus (MCV) virions separa ely, since i was our purpose o ob ain a sufficien amoun of viral DNA o es ablish a library. The ac ual propor ions of MCV sub ypes 1, 1v, and 2 in our pooled samples remains unknown. However, we hough ha mos of our samples consist ed of MCV 1v because a previous large epidemiologic sudy revealed ha sub ype 1v accoun ed for 96% of he c sains iso la ed in he Tokyo area [4], and we previously es ablished a genomic library of MCV 1v [2]. I appears ha he reac ivi y in various isola es of the virus remains unknown. However, we hough ha mos of our samples consists ed of MCV 1v because a previous large epidemiologic sudy revealed ha sub ype 1v accoun ed for 96% of he c sains iso la ed in he Tokyo area [4], and we previously es ablished a genomic library of MCV 1v [2]. I appears ha he reac ivi y in various isola es of the virus.

Reprint s or correspondence: Dr. Takahiro Wa anabe, Dep . of Derma ology, Faculty of Medicine, University of Tokyo, 7-3-1 Hongo, Bunkyo-ku, Tokyo 113-0033, Japan (wa anabe -der@h.u- okyo.ac.jp).
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Does the Capsule Component of the Cryptococcus neoformans Glucuronoxylomannan Impair Transendothelial Migration of Leukocytes in Patients with Cryptococcal meningitis?

To the Editor—The encapsula ed yeas -like fungus Cryptococcus neoformans is he leading cause of mycological infec ion of he cen ral nervous sys em in pa ien s wi h compromised cell-media ed immuni y [1]. Recen ly, we demons ra ed ha he cerebrospinal fluid (CSF) of pa ien s wi h cryp ococcal meningi is is con ains high levels of he neu rophil chemoa rac an he eri clin ican (IL)-8, despe i he reac ivi y in CSF is con ains neu rophils [2]. The cryp ococcal capsular polysaccharide glucuronoxylomannan (GXM) is presen in serum and CSF of pa ien s wi h cryp ococcal meningi is, and GXM is known o be an eri ce wi h he neu rophil migra ion [3]. We demons ra ed in vacuo ha GXM is capa ble of inducing he produc ion of IL-8 by brain cells, and i also preven s neu rophils from migra ing oward IL-8 [4]. Consequen ly, a high level of GXM in serum and CSF wi h he CSF neu rokery o eri ce con ains of 35 Du h man immunodeficiency virus—infe ed pa ien s wi h he cul ure-proven diagnosis of cryp ococcal meningi is is be seen 1986 and 1996.

An igen i ers for he pa ien s were measured wi h ce ic arib polar cryp ococcal igen

References


Reprint s or correspondence: Dr. Takahiro Wa anabe, Dep . of Derma ology, Faculty of Medicine, University of Tokyo, Tokyo, Japan

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1 JInf Dis 1998;178:1230–1.
Figure 1. Inverse correlation between radio of leukocyte counts in cerebrospinal fluid (CSF) and cryptococcal glucuronoxylomannan (GXM) in serum ([GXM]se) over those in CSF ([GXM]csf) in 35 patients with cryptococcal meningitis.

(mainly Murex Cryptococcus Test; Murex, Ken, UK) and were obtained within 5 days of the CSF leukocyte cell count. Since GXM can act on neutrophils [4], the GXM concentration gradient across the blood brain barrier (expressed as the radio of GXM in serum vs. CSF) is expected to be more critical to the CSF leukocyte cell count than the absolute GXM concentration in the CSF. Figure 1 demonstrates a significant inverse correlation between the (log) GXM radio and the (log) CSF leukocyte cell count in patients with cryptococcal meningitis. (Correlation coefficient of log values: $r = 0.54, n = 35$; 2-sided $P < .001$). These data suggest that in vivo finding of interference of GXM with neutrophil migration may indeed represent a pathogenic mechanism in cryptococcal meningitis.

References


Reprints or correspondence: Dr. A. I. M. Hoepelman, Universit"{a}t Hospital Utrecht, and Eijkman-Winkler Institute, Utrecht, and Medical Microbiology, Academic Medical Center, Amsterdam, The Netherlands.