Results. The Aliquot BdAg ELISA showed 95.7% (22/23), 96.8% (61/63) and 96.5% (83/86) positive, negative and overall agreement with the MVDx BdAg EIA, respectively. Seventeen of the 22 samples positive for BdAg by both assays resulted positive by a H. capsulatum antigen ELISA (IMMY, Norton, OK). Of the five well-characterized patients, one was diagnosed with blastomycosis based on a positive B. dermatitidis immunodiffusion result; this patient had positive by both BdAg assays. All urine samples positive for S. pneumoniae or L. pneumophila antigen were negative by the Aliquot BdAg ELISA, while all five samples positive by the IMMY H. capsulatum antigen ELISA were also positive by the Aliquot BdAg assay.

Conclusions. The Aliquot BdAg ELISA demonstrated excellent agreement with the MVDx BdAg EIA. Cross-reactivity between B. dermatitidis and H. capsulatum antigen detection assays has been previously established and is a notable limitation to the Aliquot BdAg assay. Further evaluation of this assay using specimens from well-characterized patients with and without blastomycosis is warranted.

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2036. Plasma (1→3)-β-D-Glucan Levels Correlate with Neurocognitive Functioning in HIV-Infected Adults
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Background. Although antiretroviral therapy (ART) has improved survival and morbidity, HIV-infected adults still have higher rates of non-AIDS disorders, such as neurocognitive impairment, than HIV-uninfected adults. (1→3)-β-D-Glucan (BDG) is a fungal cell wall component which serves as a plasma biomarker for fungal infection and—in the absence of fungal infections—for gut barrier integrity failure and microbial translocation. The objective of this study was to determine whether higher plasma BDG and cerebrospinal fluid (CSF) levels of BDG are associated with neurocognitive impairment [evaluated by global deficit score (GDS)] in HIV-infected adults.

Methods. We measured levels of BDG in paired plasma and CSF samples, and compared levels with GDS, soluble urokinase plasminogen activator receptor (suPAR; a marker of monocyte activation and chronic inflammation that has previously been associated with non-AIDS disorders) and plasma CD4/CD8 ratio in a cohort of 61 HIV+ adults on suppressive ART. Study samples were collected as part of the prospective CHARTER study between 2005 and 2015 at the University of California San Diego and were stored at −80°C on the day of collection. BDG testing of blood plasma and CSF supernatant was performed at the Associates of Cape Cod, Inc., research laboratories using the Fungitell assay.

Results. Median plasma BDG level was 18 pg/mL (range: 2–60 pg/mL); median CSF BDG level was 20 pg/mL (range: 0–830 pg/mL). Higher levels of plasma BDG were associated with more severe cognitive impairment as measured by the GDS (Spearman r = 0.35; P = 0.006, Figure). Individuals with neurocognitive impairment (i.e., GDS > 0.5, n = 33) had higher plasma BDG levels compared with unimpaired individuals (P = 0.027). Plasma levels of BDG and suPAR correlated significantly (r = 0.31, P = 0.016), while all other correlations were nonsignificant (e.g., CSF BDG and GDS [r = 0.23], plasma suPAR and GDS [r = 0.19], CSF suPAR and GDS [r = 0.022], CD4/CD8 ratio and GDS [r = −0.028]).

Conclusion. Elevated plasma levels of BDG may be an indicator of gut barrier integrity failure and an independent biomarker associated with neurocognitive functioning in HIV+ adults on suppressive ART.

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