MRC/UVRI PUBLICATIONS DIGEST – JULY 2017

Marburg virus survivor immune responses are Th1 skewed with limited neutralizing antibodyr esponses. Stonier SW, Herbert AS, Kuehne AI, Sobarzo A, Habibulin P, Dahan CVA, James RM, Egesa M, Cose S, Lutwama JJ, Lobel L, Dye JM. *J Exp Med. C2017 Jul 19. pii: jem.20170161. doi: 10.1084/jem.20170161.*

Abstract

Until recently, immune responses in filovirus survivors remained poorly understood. Early studies revealed IgM and IgG responses to infection with various filoviruses, but recent outbreaks have greatly expanded our understanding of filovirus immune responses. Immune responses in survivors of Ebola virus (EBOV) and Sudan virus (SUDV) infections have provided the most insight, with T cell responses as well as detailed antibody responses having been characterized. Immune responses to Marburg virus (MARV), however, remain almost entirely uncharacterized. We report that immune responses in MARV survivors share characteristics with EBOV and SUDV infections but have some distinct differences. MARV survivors developed multivariate $CD4^+$ T cell responses but limited $CD8^+$ T cell responses, more in keeping with SUDV survivors than EBOV survivors. In stark contrast to SUDV survivors, rare neutralizing antibody responses in MARV survivors diminished rapidly after the outbreak. These results warrant serious consideration for any vaccine or therapeutic that seeks to be broadly protective, as different filoviruses may require different immune responses to achieve immunity.

Association between serotonin transporter gene polymorphisms and increased suicidal riska mong HIV positive patients in Uganda. Kalungi A, Seedat S, Hemmings SMJ, van der Merwe L, Joloba ML, Nanteza A, Nakassujja N, Birabwa H, Serwanga J, Kaleebu P, Kinyanda E. *BMC Genet. 2017 Jul 25;18(1):71. doi: 10.1186/s12863-017-0538-y.*

Abstract

BACKGROUND:

Persons living with HIV/AIDS (PLWHA) are at an increased risk of suicide. Increased suicidal risk is a predictor of future attempted and completed suicides and has been associated with poor quality of life and poor adherence with antiretroviral therapy. Clinical risk factors have low

predictive value for suicide, hence the interest in potential neurobiological correlates and specific heritable markers of suicide vulnerability. The serotonin transporter gene has previously been implicated in the aetiology of increased suicidal risk in non-HIV infected study populations and its variations may provide a platform for identifying genetic risk for suicidality among PLWHA. The present cross-sectional study aimed at identifying two common genetic variants of the serotonin transporter gene and their association with increased suicidal risk among human immunodeficiency virus (HIV)-positive adults in Uganda.

RESULTS:

The prevalence of increased suicidal risk (defined, as moderate to high-risk suicidality on the suicidality module of the Mini Neuropsychiatric Interview (M.I.N.I) was 3.3% (95% CI, 2.0-5.3). The 5-HTTLPR was found to be associated with increased suicidal risk before Bonferroni correction (p-value = 0.0174). A protective effect on increased suicidal risk was found for the 5-HTTLPR/rs25531 S_A allele (p-value = 0.0046)- which directs reduced expression of the serotonin transporter gene (5-HTT).

CONCLUSION:

The S_A allele at the 5-HTTLPR/rs25531 locus is associated with increased suicidal risk among Ugandan PLWHA. Further studies are needed to validate this finding in Ugandan and other sub-Saharan samples.

Hepatitis B Virus Infection as a Neglected Tropical Disease. Geraldine A O'Hara, Anna McNaughton, Tongai Maponga, Pieter Jooste, Ponsiano Ocama, Roma Chilengi, Jolynne Mokaya, Mitchell I Liyayi, Tabitha Wachira, David Gikungi, Lela Burbridge, Denise O'Donell, Connie A Akiror, Derek Sloan, Judith Torimiro, Louis-Marie Yindom, Robert Walton, Monique Andersson, Kevin Marsh, Robert Newton, Philippa C Matthews. *PLoS NTD doi: https://doi.org/10.1101/164491*

In this article, we set out to represent hepatitis B virus (HBV) infection within the framework proposed by the World Health Organisation (WHO) for neglected tropical diseases. This highlights substantial challenges to the international community, demonstrating that a large burden of HBV morbidity falls upon low and middle-income countries in the tropics, that disease is strongly associated with both poverty and stigma, and that it is under-resourced compared to other comparable public health concerns. We have collated experiences of healthcare workers, researchers and patients from a variety of settings in sub-Saharan Africa to illustrate the real, practical, day-to-day challenges posed by HBV infection. The NTD paradigm can be applied to consider how best the international community directs funding, advocacy, education, manpower and research to tackle these issues. The existing armamentarium of strategies to tackle HBV prevention, diagnosis and treatment could be implemented within existing infrastructure, most notably building HBV resources into the systems that have been developed for HIV. This

discussion is crucial to working towards WHO Sustainable Development Goals that aim for elimination of viral hepatitis as a public health problem by 2030.