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Vaccine-Induced seroreactivity impacts the accuracy of HIV testing algorithms in sub-Saharan Africa: An exploratory study

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The detection of vaccine-induced HIV antibody responses by rapid diagnostic tests (RDTs) may confound interpretation of HIV testing results. We assessed the impact of vaccine-induced seroreactivity (VISR) on diagnosis of HIV in sub-Saharan Africa. Samples collected from healthy participants of HIVIS and TaMoVac HIV vaccine trials after the final vaccination were analyzed for VISR using HIV testing algorithms of Mozambique and Tanzania that employ two sequential RDTs. The samples were also tested for VISR using Enzygnost HIV Integral 4 ELISA and HIV western blot assay. Antibody titers to subtype C gp140 were determined using an in-house enzyme-linked immunosorbent assay (ELISA). The frequency of VISR was 93.4% (128/137) by Enzygnost HIV Integral 4 ELISA, and 66.4% (91/137) by Western blot assay (WHO interpretation). The proportion of vaccine recipients that would have been misdiagnosed as HIV positive in Mozambique was half of that in Tanzania, 26.3% (36/137) and 54.0% (74/137), respectively, p < 0.0001. In conclusion, HIV RDTs and algorithms assessed here will potentially misclassify a large proportion of the HIV vaccine recipients if no other test is used. Increased efforts are needed to develop simple, affordable, serological or molecular tools that can discriminate VISR from true HIV infection at the point of care.

Biography

Alice Manjate is a PhD student at Orebro University in Sweden. Her research area is sexually transmitted infection including HIV. She is a Biologist with Master in Cellular and Molecular Biology. She has been working as a Research for more than 20 years at Microbiology Laboratory of School of Medicine in Maputo, Mozambique we has more than 5 papers published in reputed journal.