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# **SARS-CoV-2 seroprevalence among women living with HIV on life-long antiretroviral therapy (ART) and their children in Zimbabwe – PEPFAR-PROMOTE Study**

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**Background:** SARS-CoV-2 seroprevalence data in special subpopulations who may be at higher risk of disease burden is limited. We retrospectively investigated SARS-CoV-2 antibody seroprevalence among women living with HIV (WLHIV) and their children in study participants enrolled in the PEPFAR-PROMOTE observational cohort in Zimbabwe.

**Methods:** Stored plasma collected between June 2020 and October 2021 from mothers and their infants enrolled in PEPFAR-PROMOTE were tested for SARS-CoV-2 specific IgG antibodies using 2021 EUROIMMUN qualitative antibody assay that detects adaptive immune responses to SARS-CoV-2 spike protein. Plasma samples from the study exit visit were tested and back testing for preceding time point was done for samples that initially tested positive. Point prevalence estimates and 95% confidence intervals (CI) were calculated by age group and sex and p value of <0.05 was designated cut-off for statistical significance.

**Results:** Plasma samples from 399 mothers and 578 children were tested, of which 268 (46.4%) of the children were male and 7 (1.2%) were living with HIV. Children were aged <2 years (predominantly being breastfed; n=74, 12.8%); 2-5 years (pre-school, n=134, 23.2%); and >5 years (mostly school-going; n=370, 64%). The overall SARS-CoV-2 IgG seroprevalence was 66.7% for mothers and 47% (43–51%) for children. Seroprevalence estimates by infant age category for children were 45% (34-56%) for 0-2 years, 43% (35-52%) for 2-5 years 49% (44-54%) for >5 years, 41% (35 – 47%) for males and 51% (46 – 57%) for females. No association with age band was evident (p=0.36) in this cohort, however, seropositivity was more common among female children (p=0.03).

**Conclusions:**

Prevalence of SARS-CoV-2 antibodies was high in this population of WLHIV and HIV/ART exposed urban children during the third COVID-19 wave. Further analysis is required to assess sero-concordance between mothers and infants as well as siblings and also to assess associations with clinical symptoms. There is need for follow up studies to elucidate long term consequences of this high level of exposure to SARS-CoV-2 and possible effects of disease sequelae.

**Keywords:** SARS-CoV-2 IgG, Children, Prevalence, HIV