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### **Seroprevalence, seroconversion and mother-to-child-transmission of dual and triplex infection of HIV, hepatitis B and C viruses among pregnant women in Nigeria: A national cohort study**

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**Objectives:** To evaluate the seroprevalence, seroconversion and mother-to-child transmission (MTCT) rates for dual and triplex infections of HIV, hepatitis B and hepatitis C virus among pregnant women in Nigeria.

**Methods:** A multicentre prospective cohort study was conducted in six tertiary hospitals randomly selected from the six geopolitical zones of. All eligible consenting pregnant women were tested at recruitment for HIV, Hepatitis B and C virus infections. Those positive for at least two of the infections in any combination were followed-up. Those negative for the three infections or positive for only one of the infections at recruitment were retested at delivery. Positive tests were confirmed using PCR technique. The primary outcome measures were seroprevalence, seroconversion and MTCT rates. Data were managed with SPSS for windows version 23, with primary outcomes analyzed as % and 95% CIs. Ethical approval was obtained from NHREC (NHREC/01/01/2007-23/01/2020).

**Results:** Of 2,775 participants enrolled, 13 (0.47%; 95% CI, 0.25% to 0.80%) and 4 (0.14%; 95% CI, 0.04% to 0.37%) were seropositive to dual and triplex infections, respectively. Of the 13 participants 'seropositive to dual infections, 6 (46.15%; 95% CI, 16.94% to 100.46%) were seropositive to HIV and HBV, 4 (30.77%; 95% CI, 8.38% to 78.78%) were seropositive to HIV and HCV and 3 (23.08%; 95% CI, 4.76% to 67.44%) were seropositive to HBV and HCV. However, 2403 out of 2775 (86.59%; 95% CI, 83.17% to 90.13%) participants were followed up till delivery. Of the 2403 participants followed up, 2,386 did not have dual or triplex infection at enrolment. Of these 2,386, 3 participants were seropositive for dual infection of HIV and HBV at repeat testing at delivery, giving a seroconversion rate of 0.13% (95% CI, 0.03% to 0.36%). No participant had seroconversion for HIV-HCV or HBV-HCV or for triplex infections. The MTCT rates was 0.0% for dual and triplex infections.

**Conclusion:** We observed a relatively high seroprevalence rates for dual and triplex infections of HIV, hepatitis B and hepatitis C viruses in Nigeria but a low seroconversion and zero MTCT rates. Funding: TETFund National Research Fund 2019 (Grant number TETFund/DR&D/CE/NRF/STI/33).

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