Research news in clinical context

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IMMUNOGENICITY FOLLOWING CORONAVAC VACCINATION AMONG PEOPLE LIVING WITH HIV IS STRONG BUT REDUCED AMONG THOSE WITH LOW CD4 COUNTS

Evidence on the safety and immunogenicity of inactivated SARS-CoV-2 vaccines in people with HIV remains limited. This Brazilian cohort study followed 215 people living with HIV (89% with viral load <50 copies/mL, 70% with CD4 cell count ≥500 cells/mm^3) and 296 people with no known immunosuppression who were given two CoronaVac doses 28 days apart. Six weeks after the second vaccine dose, people living with HIV had good overall antibody responses, although compared with people with no known immunosuppression they showed reduced SARS-CoV IgG seroconversion (91% vs 97%) and neutralising antibody (NAb) positivity (71% vs 84%). A CD4 count <500 c/mm^3 was associated with lower NAb activity. No serious adverse events were reported. Booster doses or vaccine preparations with higher antigen titres may improve CoronaVac immunogenicity among people with HIV and low CD4 counts.

Netto LC, Ibrahim KY, Picone CM, *et al*. Safety and immunogenicity of CoronaVac in people living with HIV: a prospective cohort study. *Lancet HIV* 2022;9:e323-e331. doi: 10.1016/S2352-3018(22)00033-9.

AMONG PEOPLE LIVING WITH HIV, INCIDENCE OF HCV REINFECTION FOLLOWING SUCCESSFUL THERAPY IS HIGHER AMONG MSM AND THOSE WHO WERE TREATED DURING A RECENT HCV INFECTION

There is heterogeneity in the reported risk of reinfection with hepatitis C virus (HCV) following a sustained virological response to therapy among people living with HIV. A meta-analysis of observational studies and clinical trials from high-income countries (n=9024 people living with HIV with 14 263 person-years of follow-up) reported a pooled HCV reinfection incidence of 3.76 cases per 100 person-years (95% CI 2.80 to 5.05) overall, increasing to 6.01 (4.54 to 7.95) among MSM living with HIV and to 8.16 (5.77 to 11.54) among participants treated for recent HCV infection (compared with chronic HCV). Incidence of reinfection did not differ by type of treatment. There were limited data on injection drug use and sexual behaviours. People with recent HCV infection who undergo curative treatment require regular assessment to detect reinfection.

Hosseini-Hooshyar, S., Hajarizadeh, B., *et al*. Risk of hepatitis C reinfection following successful therapy among people living with HIV: a global systematic review, meta-analysis, and meta-regression. *Lancet HIV*. 2022 May; 9 (6): e414–e427. https://doi.org/10.1016/S2352-3018(22)00077-7

MENINGOCOCCAL VACCINATION MAY OFFER PROTECTION AGAINST GONORRHOEA INFECTION

Rates of antibiotic-resistant *Neisseria gonorrhoea* are increasing, indicating a need for improved prevention methods including a potential vaccine. This retrospective case–control study used surveillance and immunisation registry data to examine all gonorrhoea diagnoses among individuals aged 16–23 in New York City and Philadelphia from 2016 to 2018. Complete vaccination was defined as two doses administered 30–180 days apart, while partial vaccination was defined as a single dose. Among 109 737 individuals, those who had received meningococcus vaccination (MenB-4C) displayed a reduced prevalence of gonorrhoea. The prevalence ratio was 0.60 (95% CI 0.47 to 0.77) with complete vaccination and 0.74 (95% CI 0.63 to 0.88) with partial vaccination, after adjusting for ethnicity, gender and jurisdiction. The findings inducate the potential efficacy of MenB-4C vaccination against gonorrhoea, and support the feasibility of an effective gonococcal vaccine.

Abara WE, Bernstein KT, Lewis FMT, Schillinger JA, Feemster K, Pathela P, Hariri S, Islam A, Eberhart M, Cheng I, Ternier A, Slutsker JS, Mbaeyi S, Madera R, Kirkcaldy RD. Effectiveness of a serogroup B outer membrane vesicle meningococcal vaccine against gonorrhoea: a retrospective observational study. *Lancet Infect Dis*. 2022 Apr 12:S1473-3099(21)00812-4. doi: 10.1016/S1473-3099(21)00812-4. Epub ahead of print. PMID: 35 427 490.

EDITOR'S CHOICE: MULTISITE STI SCREENING REQUIRED TO MEET THE NEEDS OF BLACK GAY, BISEXUAL AND OTHER MEN WHO HAVE SEX WITH MEN (GBMSM)

STIs are a robust predictor of HIV seroconversion and testing every 3–6 months is recommended for at risk GBMSM. This study evaluated if patient-reported sexual risk behaviours can adequately identify STI testing needs among black GBMSM in Atlanta. The 331 participants reported behavioural risk over the preceding 3 months and completed self-administered STI and HIV testing. A rectal STI was diagnosed in 51 (15.4%) of which 94% were asymptomatic. HIV was diagnosed in 31 (9.4%); of these, 12 (39%) also had a rectal STI. A diagnosis of rectal STI or HIV was not associated with self-reported risk behaviours such as the number of male partners or number of condomless anal intercourse acts. Multisite STI and HIV testing should be routinely offered to black GBMSM and not based on traditional risk assessment.

Watson, R., Collibee, C. Maksut, J. *et al*. High levels of undiagnosed rectal STIs suggest that screening remains inadequate among Black gay, bisexual and other men who have sex with men. *Sex Transm Infect* 2022;98;125–127. doi:10.1136/sextrans-2020–0 54 563

STARTING ART IN THE ACUTE PHASE OF HIV INFECTION REDUCES THE VIRAL RESERVOIR

It has been proposed that starting antiretroviral therapy (ART) soon after infection may reduce the size of the HIV reservoir. In this prospective study, participants were divided into three groups based on the timing of ART initiation after HIV infection: ≤30 days (acute group, n=15), 31–90 days (early group, n=19) or >24 weeks (deferred group, n=22). Over 4 years, multiple methods were used to estimate the size of the viral reservoir including quantification of total, integrated and 2-LTRc HIV DNA, and measuring the frequency of cells with inducible multiply spliced HIV RNA by tat/rev induced limiting dilution assay.

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The virological markers showed a biphasic decay. The acute group had a steeper first-phase decay and unlike the other groups showed continued decay in the second phase. The findings indicate that rapid ART initiation has beneficial effects on the viral reservoir.

Massanella M, Bender Ignacio RA, Lama JR, *et al*. Long-term effects of early antiretroviral initiation on HIV reservoir markers: a longitudinal analysis of the MERLIN clinical study. *Lancet Microbe* 2021;2:e198-e209. doi: 10.1016/S2666-5247(21)00010-0.

DOLUTEGRAVIR WITH TENOFOVIR/EMTRICITABINE EFFECTIVELY SUPPRESSES GENITAL HIV RNA SHEDDING IN MEN WITH PRIMARY HIV INFECTION (PHI)

The kinetics of HIV suppression in the genital tract may help inform counselling about transmission risk. The OPTI-PRIM-2 trial studied men with PHI who started tenofovir/emtricitabine plus dolutegravir (n=18) or darunavir/cobicistat (n=19). Baseline plasma viral loads were similarly high in the two groups. Semen samples collected at regular intervals over 48 weeks showed similar kinetics of HIV RNA decline. After 48 weeks, HIV RNA was detected in two patients on dolutegravir (1.8 and 2.9 $\log_{10}$ copies/mL) and four patients on darunavir/cobicistat (1.5–3.3 $\log_{10}$ copies/mL). Plasma HIV RNA in the six patients ranged from undetectable to 2.2 $\log_{10}$ copies/mL. Tenofovir/emtricitabine plus dolutegravir effectively suppresses genital HIV shedding although in some patients treatment needs time to obtain full virological suppression in the genital compartment.

Mariaggi AA, Bauer R, Charre C, *et al*. HIV-1-RNA and total HIV-1-DNA loads in the genital compartment in men receiving dolutegravir- vs darunavir-based combined ART (cART) regimens during primary HIV infection. *J Antimicrob Chemother*. 2022;77:735–739. doi: 10.1093/jac/dkab427.

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