

Research news in clinical context

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QUADRIVALENT HUMAN PAPILOMAVIRUS (HPV) VACCINE SUBSTANTIALLY REDUCES THE RISK OF INVASIVE CERVICAL CANCER

Randomised controlled trials show that human papillomavirus (HPV) vaccination is protective against HPV infection, genital warts and high-grade precancerous cervical lesions.¹ However, such trials cannot evaluate vaccine effectiveness against invasive cervical cancer due to a long lead time. This Swedish registry-based cohort study followed up 1.7 million women aged 10–30 years without previous HPV vaccination or invasive cervical cancer from 2006 to 2017. The adjusted risk of cervical cancer among women who were vaccinated before 17 years of age was 88% lower than among those who had never been vaccinated. These findings support the effectiveness of the quadrivalent HPV vaccine in conferring protection against invasive cervical cancer.

Lei J, Ploner A, Elfström KM, *et al.* HPV vaccination and the risk of invasive cervical cancer. *N Engl J Med* 2020;383:1340–8. doi:10.1056/nejmoa1917338.

COVID-19 MAY MODULATE VIROLOGICAL HIV SUPPRESSION DURING ANTIRETROVIRAL THERAPY (ART)

The marked effects of SARS-CoV-2 on immunity and inflammation suggest that COVID-19 may influence HIV control despite effective ART. This US study used a single-copy HIV-1 RNA assay to investigate 12 individuals sampled a median of 37 days post-onset of COVID-19 symptoms and 17 individuals whose plasma samples were collected prior to the COVID-19 pandemic. The proportion with detectable plasma HIV-1 RNA was 83% in the COVID-19 group (median HIV-1 RNA 1.6 copies/mL) and 59% in the pre-COVID-19 group. Among four individuals retested a median of 75 days

post-onset of COVID-19 symptoms, three showed persistent HIV-1 RNA detection (median HIV-1 RNA 2.0 copies/mL). Given the small sample size, data are to be considered preliminary. Larger studies are needed.

Peluso MJ, Bakkour S, Busch MP, *et al.* A high percentage of people with HIV on antiretroviral therapy experience detectable low-level plasma HIV-1 RNA following Coronavirus Disease 2019 (COVID-19). *Clin Infect Dis* 2020;ciaa1754. doi:10.1093/cid/ciaa1754.

ANOGENITAL WARTS ARE A RISK FACTOR FOR ANAL CANCER AMONG PEOPLE WITH HIV

The incidence of anal cancer and associated mortality are on the rise, especially among high-risk groups,² and a better understanding of risk factors is warranted. In this cohort study of 6515 adults with HIV (72% male) enrolled in 2011–2017, 383 (6%) developed anogenital warts over 1781 person-years of follow-up. The incidence of anal cancer was 4.4% among those with a diagnosis of warts, compared with 0.3% among those without a diagnosis (adjusted OR 12.79, 95% CI 6.19 to 26.45). A nadir CD4 of <200/μL was also a risk factor (aOR 5.73, 95% CI 2.18 to 15.10). The findings strengthen the evidence that people with HIV who have anogenital warts have an elevated risk for anal cancer and emphasise the importance of HPV vaccination in people with HIV.

Arnold JD, Byrne ME, Monroe AK, *et al.* The risk of anal carcinoma after anogenital warts in adults living with HIV. *JAMA Dermatol* 2021;e205252. doi:10.1001/jamadermatol.2020.5252.

SIGNIFICANT BUT INCOMPLETE IMPACT OF UNRESTRICTED ACCESS TO DIRECT-ACTING ANTIVIRALS (DAAS) ON HEPATITIS C VIRUS (HCV) INFECTION AND REINFECTION AMONG MSM WITH HIV

This large retrospective study evaluated the incidence of primary HCV infection and HCV reinfection after spontaneous or treatment-induced clearance among HIV-diagnosed men who have sex with men (MSM) in the Netherlands, following

the implementation of universal access to DAAs in 2015. Relative to 2015, in 2019, the overall incidence of primary infection and reinfection declined by 61% and 79%, respectively. However, following a sharp decline in 2016, the incidence of primary infection remained stable in 2017–2019 at 4.1–4.9 cases per 1000 person-years. Findings indicate a significant treatment-as-prevention effect for HCV among MSM with HIV. Persistent HCV incidence in the DAA era points to ongoing HCV transmission networks and indicates that other prevention strategies are needed, including increased HCV testing, prompt initiation of DAA therapy, and reducing behaviours associated with HCV acquisition.

Smit C, Boyd A, Rijnders BJA, *et al.* HCV micro-elimination in individuals with HIV in the Netherlands 4 years after universal access to direct-acting antivirals: a retrospective cohort study. *Lancet HIV* 2021;8:e96–105. doi:10.1016/S2352-3018(20)30301-5.

PENICILLIN SHORTAGES ASSOCIATED WITH INCREASED INCIDENCE OF CONGENITAL SYPHILIS (CS)

CS has potentially devastating sequelae and can be prevented with a single dose of prenatal benzathine penicillin (BP). This ecological study analysed incidence of CS in Rio de Janeiro (2013–2017) at the neighbourhood level. The data were related to the benzathine penicillin supply (BPS), using a scale where ≥ 1 represented adequate supply and 0–0.99 represented a shortage. The average CS incidence rate was 19.6 cases per 1000 live births and the average BPS was 0.81 during the study period. Penicillin shortages were associated with increased incidence of neonatal syphilis (RR=2.17, 95% CI 1.13 to 4.18), highlighting the importance of ensuring adequate drug supply as part of the CS prevention arsenal.

Ueleres Braga J, Araujo RS, Souza ASS de. The shortage of benzathine penicillin and its impact on congenital syphilis incidence: an ecologic study in the city of Rio de Janeiro. *Clin Infect Dis* 2020;72:e79–87. doi:10.1093/cid/ciaa1716

STI EDITOR'S CHOICE: MENTAL HEALTH SCREENING INTERVENTION DOES NOT INCREASE HELP-SEEKING BEHAVIOUR IN AT-RISK MSM

MSM are at increased risk of STIs and mental disorders.³ As psychosocial issues may influence sexual risk behaviour, psychosocial issue identification, referral and management might reduce risk

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behaviour. This Dutch clinic-based, open-label randomised trial used validated questionnaires to screen MSM on multiple psychosocial domains, revealing a high prevalence of problems related to mental health and substance use. A total of 155 individuals were randomly assigned to receive either a tailored session of face-to-face feedback, advice and referral, or no intervention. There was no difference between groups in the primary outcome of self-reported and confirmed help-seeking behaviour. Other interventions are needed to support mental well-being in at-risk MSM populations.

Achterbergh RCA, Van Rooijen MS, Van Den Brink W, *et al.* Enhancing help-seeking behaviour among men who

have sex with men at risk for sexually transmitted infections: The syn.bas.in randomised controlled trial. *Sex Transm Infect* 2021;**97**:11–7. doi:10.1136/sextrans-2020-054438.

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- 2 Hoff PM, Coudry R, Moniz CMV. Pathology of anal cancer. *Surg Oncol Clin N Am* 2017;26:57–71.
- 3 Mercer CH, Prah P, Field N, *et al.* The health and well-being of men who have sex with men (MSM) in Britain: evidence from the third national survey of sexual attitudes and lifestyles (Natsal-3). *BMC Public Health* 2016;16:525.