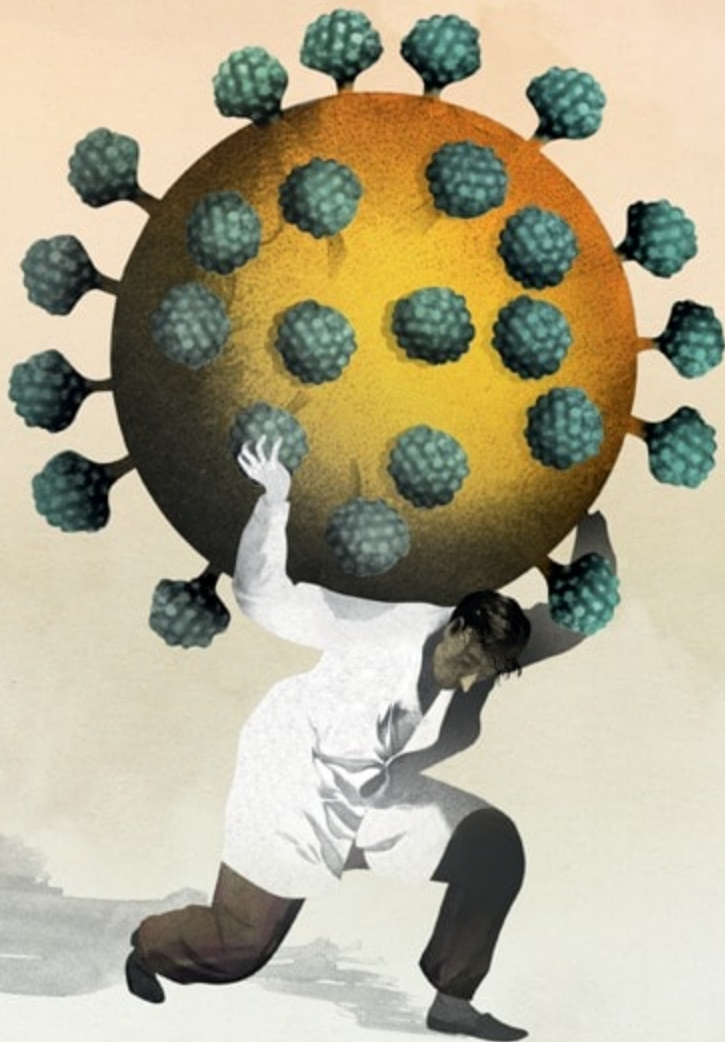


# THE LANCET Infectious Diseases

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## Co-infection: new battlegrounds in HIV/AIDS

From June 30 to July 3 many of the world's leading HIV/AIDS researchers, practitioners, and allied professionals will converge on Kuala Lumpur, Malaysia, for the seventh International AIDS Society Conference on Pathogenesis, Treatment, and Prevention. The content of this issue has been specially selected to reflect some of the key issues in HIV/AIDS with Articles on monitoring and treatment and Reviews on the search for a cure and the biology and effects of HIV superinfection. One of the key themes of the conference is co-infection. HIV/AIDS not only enables opportunistic pathogens that otherwise rarely infect human beings to cause illness, it can also substantially worsen the manifestations of other pathogens—tuberculosis, for example, is more likely to cause active diseases in people infected with HIV, and infections with hepatitis B and hepatitis C viruses more rapidly lead to liver damage.

Since the AIDS epidemic emerged, it has contributed to a global resurgence in tuberculosis. Of the estimated 34 million people infected with HIV in the world today, more than a third are also infected with *Mycobacterium tuberculosis*. In Africa, four-fifths of people with active tuberculosis are also infected with HIV. Worldwide, tuberculosis accounts for 25% of AIDS deaths; in Asia, this proportion is 40%. So it is no wonder that co-infection with tuberculosis and HIV/AIDS has received so much attention from the global health community. Great effort and resources have been invested in the improvement of diagnostic and treatment approaches for tuberculosis, and in recognition of the close association between the two diseases, the developments have simultaneously benefited many living with HIV. However, not all co-infections have, so far, received sufficient attention, and these diseases exact a substantial and growing toll on people with HIV/AIDS.

In this issue, Mark Sulkowski and colleagues report a phase 2 trial of boceprevir used for the treatment of hepatitis C in patients with HIV. In high-income countries, the co-infection rates for hepatitis C mirror those for tuberculosis—the virus infects a quarter of people with HIV in the USA, for example. But despite this burden, trials of the therapy in people also living with HIV have been a long time coming. Boceprevir was approved for treatment of hepatitis C mono-infection in 2011, but owing to concerns about potential

interactions of this drug with common antiretroviral regimens it has not been used in patients with HIV. The results of the phase 2 study seem promising: with 63% of patients given boceprevir with pegylated interferon alfa and ribavirin achieving sustained virological response at 48 weeks, compared with 29% of those receiving interferon-ribavirin alone. However, work is still needed to confirm safety, and new direct-acting antivirals are already in development, so whether boceprevir will have a role in the treatment of hepatitis C in patients with HIV remains uncertain.

In their Personal View article, Angela Loyse and coauthors review the treatment of cryptococcal meningitis. This disease contributes to up to 20% of AIDS-related deaths in sub-Saharan Africa. Although appropriate management of HIV infection is one of the most effective routes to preventing this opportunistic infection, access to antiretrovirals in the regions where cryptococcal meningitis is most prevalent is inadequate. And as Loyse and coauthors highlight, so is access to amphotericin B, fluconazole, and flucytosine, the treatments for cryptococcal meningitis. The Personal View concludes with ten recommendations for tackling the burden of this infection in resource-limited settings, focusing on improving cost and access to available drugs and the development of new drugs.

The neglect of some coinfections with HIV/AIDS is something of a paradox. Manifestations of unusual infections such as pneumocystis pneumonia and Kaposi's sarcoma were, after all, the first signs of the emerging pandemic to be recognised. Although effective management of HIV infection will help to diminish the burdens of other pathogens among infected populations, it is imperative that people living with HIV/AIDS have access to effective treatments for co-infecting pathogens. As Loyse and colleagues point out, access to antifungals, including new drugs, needs to be improved in low-income and middle-income countries. And as highlighted by the trial of boceprevir, HIV should be thought about early in the development of drugs for important co-infections. Patients with HIV must be considered in trial designs and, where possible, included in drug trials to avoid future lags in treatment availability for common co-infections.

■ *The Lancet Infectious Diseases*



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For more on **tuberculosis and HIV** <http://www.usaid.gov/news-information/fact-sheets/twin-epidemics-hiv-and-tb-co-infection>