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HIV Prevention Remains Elusive

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WHO is now training sights on vaccine development to prevent HIV infection



On December 1, the world gathers every year to commemorate World AIDS Day, which serves as an important reminder that we must remain steadfast in our commitment to prevent new HIV (Human Immunodeficiency Virus) infections and provide essential services to all people living with HIV globally. In 2024, the 37th World AIDS Day opens with the theme, “Collective Action: Sustain and Accelerate HIV Progress.”

According to reports by the World Health Organisation (WHO), approximately 39.9 million people were living with HIV at the end of 2023. To be specific, an estimated 1.3 million people became infected with HIV in 2023. While there has been marked progress in sub-Saharan Africa, for the first time, in 2023 more than half of the new HIV infections occurred outside of sub-Saharan Africa.

Within the South East Asian region, an estimated 4 million people were living with HIV in 2023, of which 78 per cent knew their status, and 66 per cent were receiving treatment. Speaking of India, reports suggest that in 2023, 68,000 people were newly infected with HIV.

As HIV continues to be a major global public health issue, claiming 42.3 million lives so far, in 2023, 630,000 people died from HIV-related causes globally. It must also be noted that the global HIV epidemic claimed 69 per cent fewer lives in 2023 since the peak in 2004.

The scientific advances and tools available have changed the way we look at this infection, both epidemiologically, in terms of preventing new diseases, and therapeutically, with highly effective and well-tolerated treatments. But if 1.3 million people continue to acquire HIV every year, the response will become more challenging, more complex and more costly in the years to come, and we must act on it urgently.

Long-acting technologies like pre-exposure prophylaxis (PrEP) continue to play a major role in preventing new infections, but access is limited to only a few countries. Further, new HIV prevention products in the pipeline such as long-acting injectable cabotegravir (CAB-LA) and most recently, lenacapavir, are raising expectations due to their convenience and high efficacy. However, the key challenge is accessibility and affordability.

The WHO, hence, is now training sights on vaccine development to prevent HIV infection. In November 2024, the WHO published a new study naming 17 pathogens, including HIV, as top priorities for new vaccine development. This study is the first global effort to systematically prioritise endemic pathogens based on criteria that included regional disease burden, antimicrobial resistance risk and socioeconomic impact.

However, the complex biology of HIV makes the virus a tough target to tackle, because of which we still do not have a vaccine candidate ready with us. While the wait is still on, we do see hopeful projects reaching a stage of culmination which might just bring in the desired results very soon. For example, Immuno Cure BioTech, a clinical-stage biotechnology group based in Hong Kong Science Park, has recently completed the first-in-human novel therapeutic HIV vaccine, ICVAX, Phase I clinical trial with encouraging findings of exceptional safety and promising immunogenicity profiles.

The company is now communicating with the National Medical Products Administration (NMPA), the Chinese regulatory authority, for the upcoming Phase II clinical trial, anticipated to commence in mid-2025.

As another major development, eight African countries including Nigeria, South Africa, Zambia, Zimbabwe, Tanzania, Uganda, Kenya, and Mozambique, have begun a groundbreaking, African-led HIV vaccine research and development project, offering hope for a vaccine tailored to the needs of the region’s population.

Although in some parts of the US, testing is underway for mRNA-based HIV vaccines as well, the final breakthrough remains elusive. Even if an effective solution for HIV prevention is developed, optimum policy implementation and minimising patient stigmatisation needs to be addressed as well.

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