Lenacapavir

Why in the news?

Yearly HIV prevention injection shows promise in clinical trials.

- Lenacapavir is an *investigational anti-retroviral* drug developed by Gilead Sciences.
- **Approved by** - U.S. Food and Drug Administration (FDA).
- It acts as a long-acting ***HIV treatment and prevention drug*** designed to be administered as an injection.
- **Administration and Dosage -** Lenacapavir is available in two forms
    - **Subcutaneous Injection** (Twice a Year)
    - **Intramuscular Injection** (Once a Year – Under Trial)
- **Working** - Lenacapavir is a capsid inhibitor, that targets the HIV-1 capsid, a protein shell that protects the virus's genetic material.
- By interfering with the capsid's function, it prevents HIV from replicating and infecting new cells.
- Unlike most HIV drugs that target enzymes (like reverse transcriptase or protease), Lenacapavir disrupts multiple stages of the viral life cycle, making it a unique and effective approach.
- The yearly version aims to provide long-term HIV prevention, making it more convenient than daily PrEP pills.
- **Current Status -** The Phase 1 trial for yearly prevention showed promising results, but larger studies are needed.
- A twice-a-year version for treatment has already shown *success in Phase 3 trials.*

Currently, there is no cure or vaccine approved for HIV/AIDS.

Reference

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