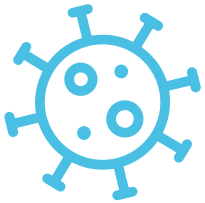
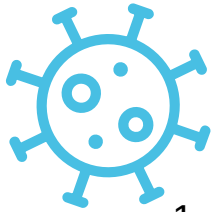



Antiviral resistance

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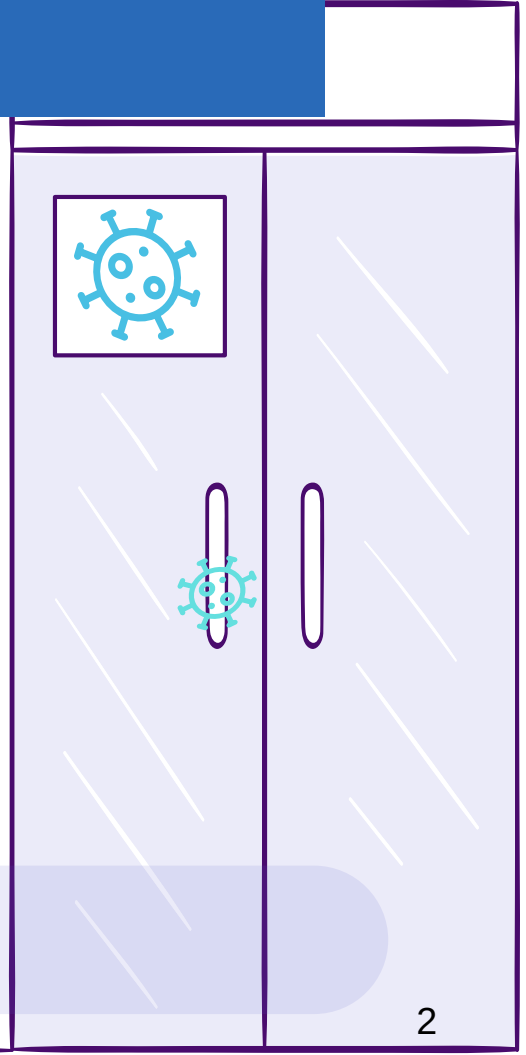
Objective

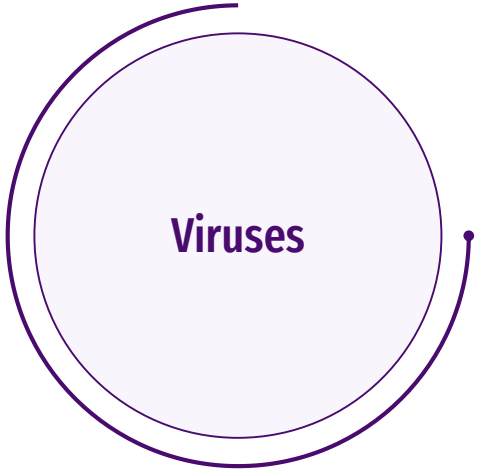
- Structure of the viruse.
- Virus replication .
- Antiviral and development of drug resistance.
- Medically important viruses



Introduction

- **The rise in antiviral resistance is considered one of the greatest problem to global health.**
- **Better knowledge and increased awareness are essential to be able to control emerging antiviral drug resistance ,and surveillance will be a key tool for management .**

STRUCTURE OF THE VIRUS



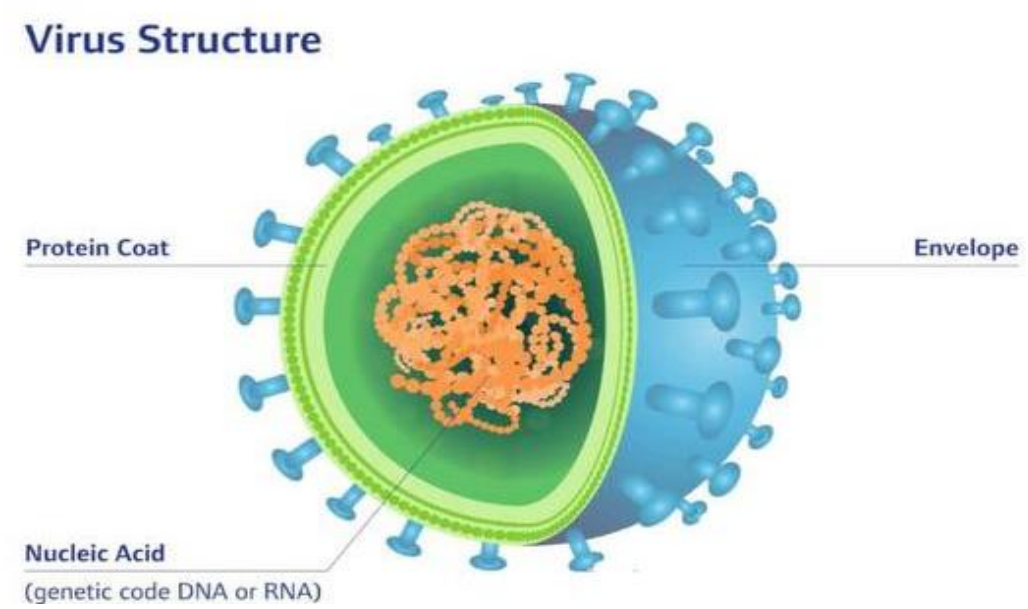
- Viruses are a unique group of pathogens with simple structure and distinct pattern of multiplication .

- Even with their simple structure they cause major diseases.

Structure of viruses

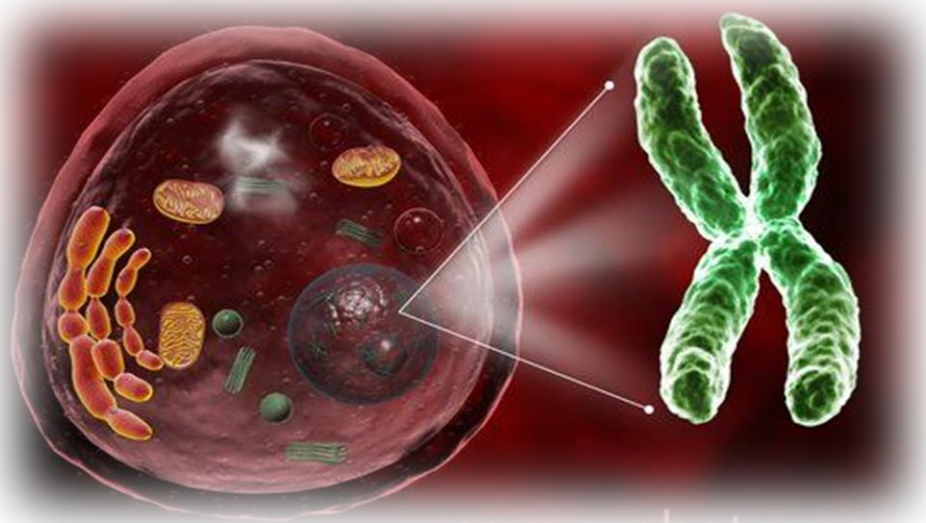
- Virus is mainly made up of three components

- ❖ Capsed
- ❖ Nucleic acid
- ❖ Envelope



Replication of the viruses

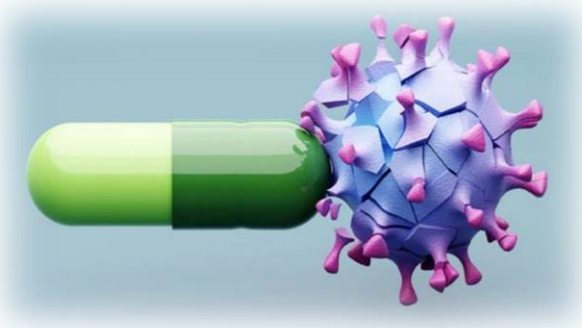
1.infection — 2.Replication — 3.Assembly — 4.Release



Antiviral drugs

- Highly potent drugs are now available against

- Herpes virus
- HIV
- Hepatitis B virus
- Influenza virus

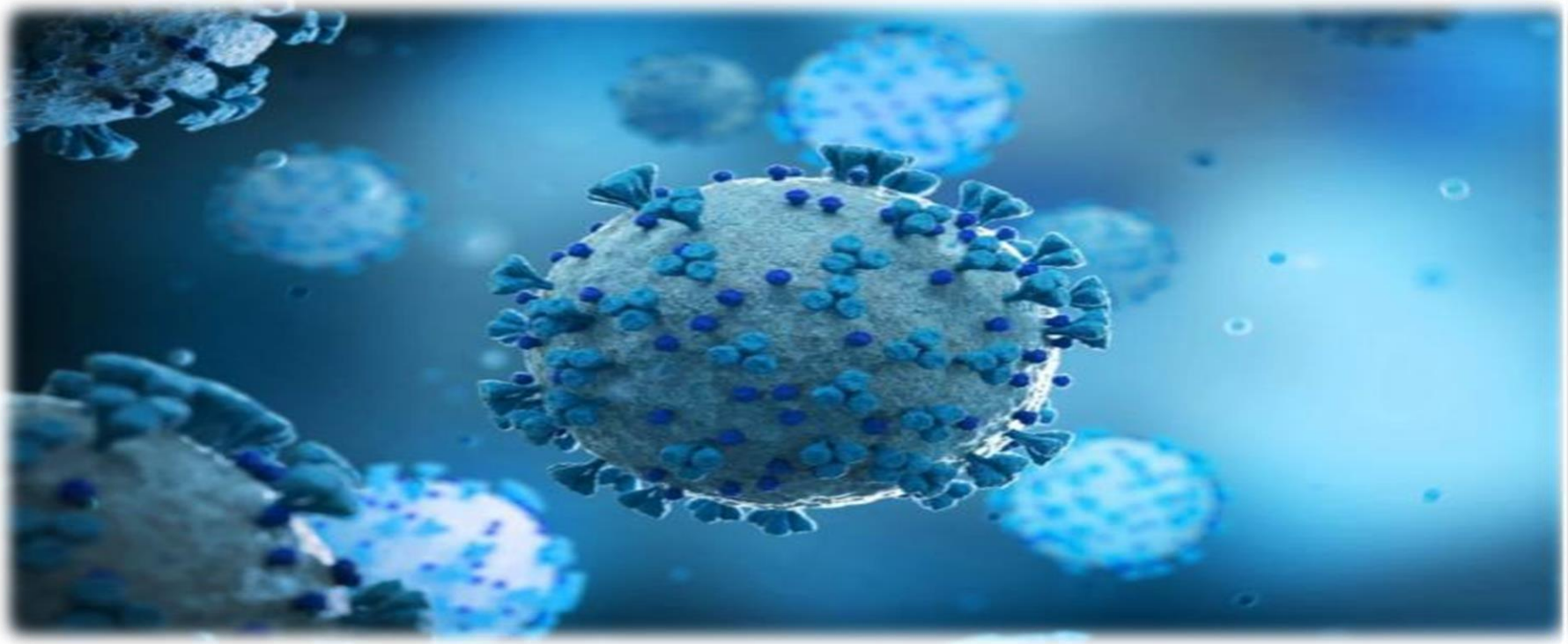


- Antiviral drug don,t kill the virus .
- Antiviral drugs stop one step of the viral life cycle like

- ## Drug resistance

➢ it is a reduced susceptibility of the virus to adrug in laboratory culture because of the altered viral protein which is the target .

Medically important viruses.



HSV

- The drug of choice is acyclovir (penciclovir)
- Acyclovir Triphosphate inhibit viral DNA synthesis

- Acyclovir resistant HSV can cause:
  - Meningitis
  - Oesophagitis
  - Pneomonia

- Another option ,In case with acyclovir resistance we have (Foscarnet).

influenza

- The Drug of choice for the treatment of influenza A are amantadine and rimantadine
- Both of these drug target the viral M2 protein.
- The mutant are not associated with clinical deterioration but may have slightly prolonged illness .

HIV

- The drug of choice in HIV-infection Is (zidovudine)
- It is targeting the viral reverse transcriptase.
- Despite treatment with potent medicine, some HIV drugs resistance is expected to emarge.

SARS_COV_2

- There is currently no direct acting antiviral.
- Remdisvir have been used in treatmen of SARS ,but still not decomented.
- only one mutation associated with remdesivire treatment has been identified
- There is no document about this mutation .

conclusions

- With increased utilization of antiviral agent ,antiviral resistance has moved on .
- Currently , resistance viruses are isolated primarily from immunocompromised patient taking antiviral drugs for prolonged periods of time.
- So,we have to focus on development of new antiviral drugs ,with rapid techniques to detect resistant cases ,and isolate to be available to clinician.

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Thank you