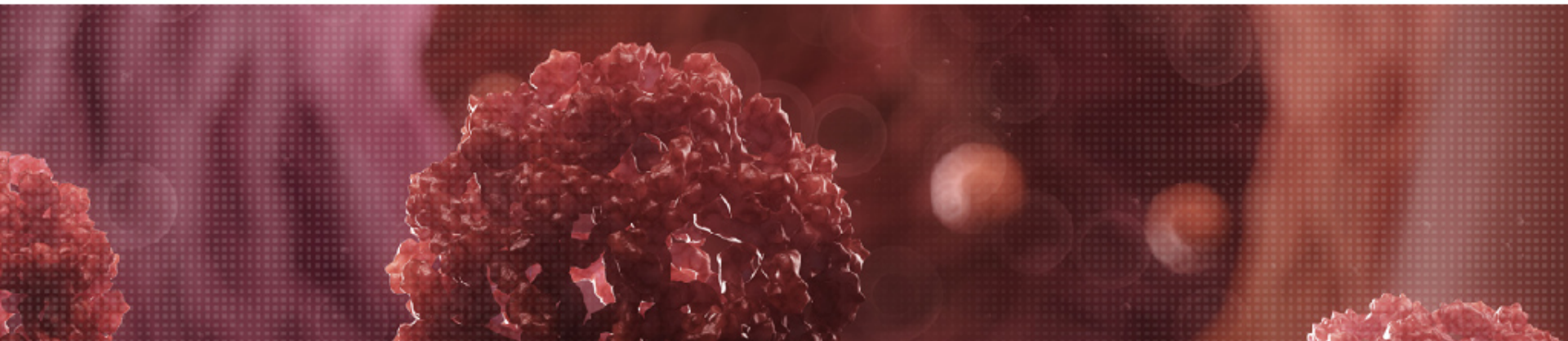


Erasmus MC



Viroscience lab

WHERE SKILLS MEET TO STUDY & PROTECT



Blood-borne viruses

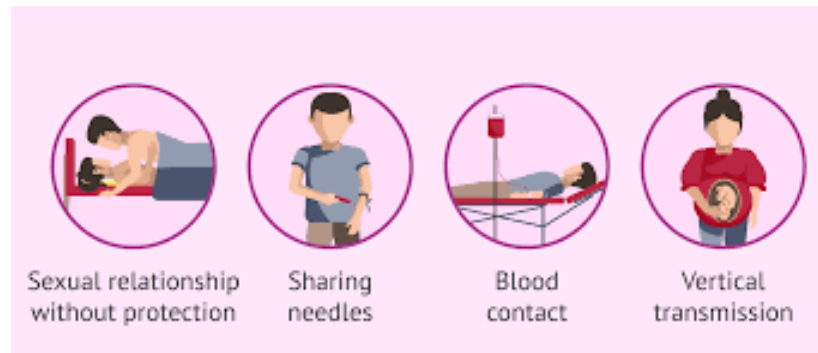
[Leanne van Leeuwen](#)

22-01-2021

Erasmus MC, Rotterdam, the Netherlands

Blood-borne virus

- Virus that is transmitted by blood or body fluids that contain blood



- Most famous example: HIV
- HIV: human immunodeficiency virus
- HIV infects immune cells (CD4+)
 - Normal functioning immune cells decline over the years
 - AIDS: Acquired ImmunoDeficiency Syndrome



HIV history: the slow and invisible pandemic

- ~ 1920 first HIV infection in humans
- Pre-1980: Some cases of (probable) AIDS were documented, but not linked to each other
- 1980: the AIDS 'syndrome' was recognized and already present on all continents, but the cause was still unknown
- 1983: the HIV virus was discovered
- 1987: first antiviral drug was approved
- 1996: first combination therapy was introduced → Revolution
- 2017: first year that more than 50% of the population living with hiv were receiving antiviral therapy



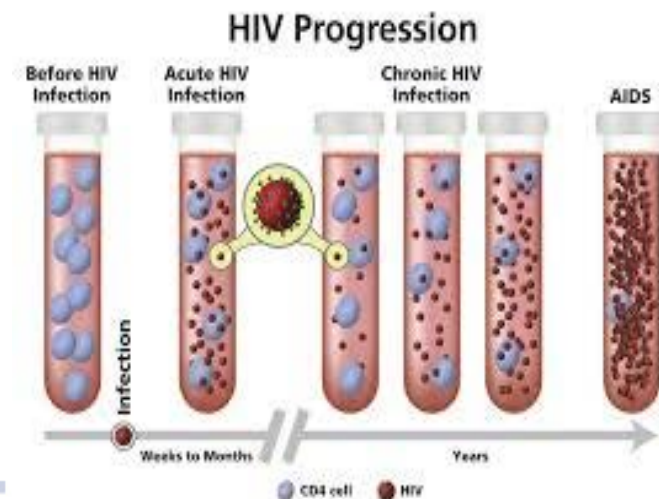
HIV

- 3 Phases

1. Acute hiv syndrome: flu-like symptoms 2-4 weeks after contact with virus. Usually symptoms are mild and resolve quickly. Hard to recognise these symptoms as HIV infection.
2. Chronic phase: Virus is present, but no symptoms for many years.
3. AIDS: Acquired ImmunoDeficiency Syndrome
 - High susceptibility for (rare) infections
 - High susceptibility for cancers

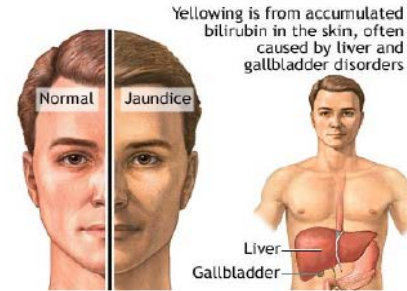
- No cure, no vaccine

- Life-long antiviral therapy



Other blood-borne viruses

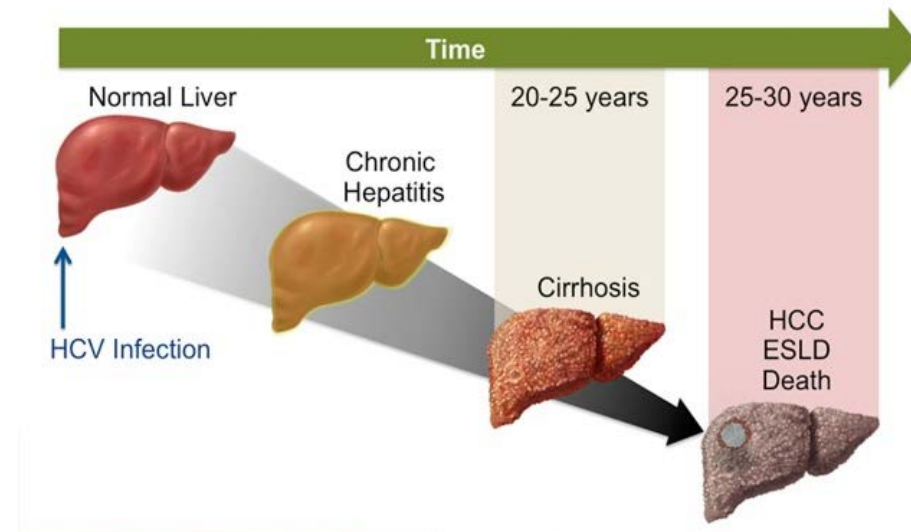
- Hepatitis B and hepatitis C
 - Causing viral infection of the liver
- Acute phase and chronic phase
 - Acute phase:
 - B: Fatigue, nausea, pain and swelling of joints, jaundice
 - C: Mild- or no symptoms
 - Acute phase develops to chronic phase:
 - B: only in 10%
 - C: in 80%



Chronic phase

- No symptoms for many years...
- Many infected person's aren't aware of their infection
- Antiviral medicines can be successful
- After many years, severe complications can develop
 - Liver cirrhosis
 - Liver failure
 - End Stage Liver Disease
 - Liver cancer
 - HepatoCellular Carcinoma

Stages of Liver Disease:



Conclusion



- Blood-borne viruses
 - HIV
 - Hepatitis B
 - Hepatitis C
- Serious long-term complications
- Infected persons are difficult to detect
- Treatment is complicated and/or live-long
- Only vaccination against hepatitis B is currently available

