

Ρευματικές εκδηλώσεις ασθενών με HIV λοίμωξη και αντιμετώπιση

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<https://prepdaily.org/what-is-the-difference-between-hiv-and-aids/>

Δήλωση συμφερόντων

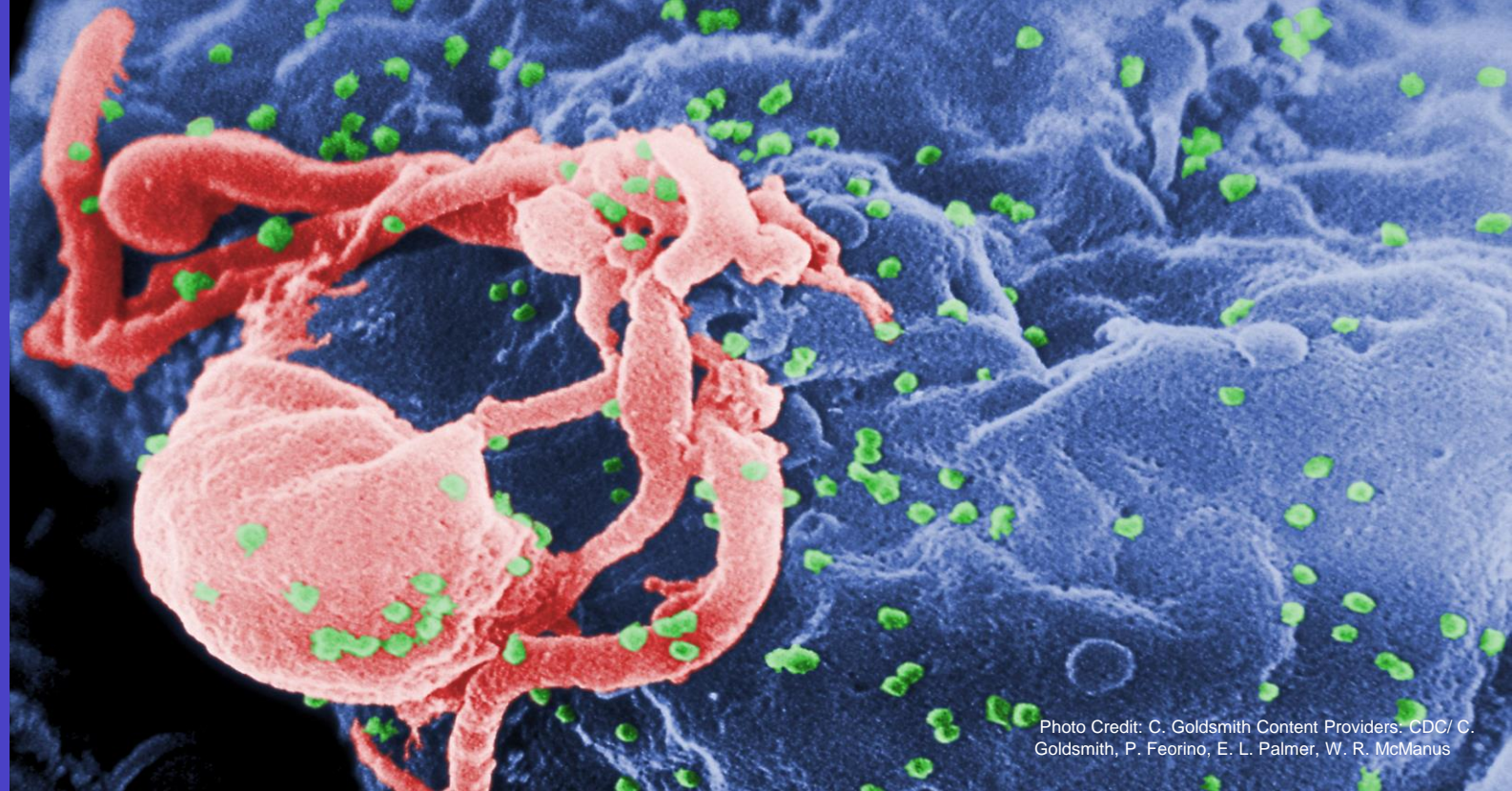


Photo Credit: C. Goldsmith Content Providers: CDC/ C. Goldsmith, P. Feorino, E. L. Palmer, W. R. McManus

Καμία.

A black and white electron micrograph showing several HIV-1 virions. The virions are spherical with a distinct outer envelope and a darker, denser core. They are scattered across the field of view. A semi-transparent dark grey rectangle is overlaid on the lower-left portion of the image, containing the title text. A solid teal horizontal bar is located below the title. At the bottom of the slide, there is a dark grey footer area containing a scale bar, the virus name, a URL, and a date/author string.

HIV infection: greek experience

50 nm

HIV5

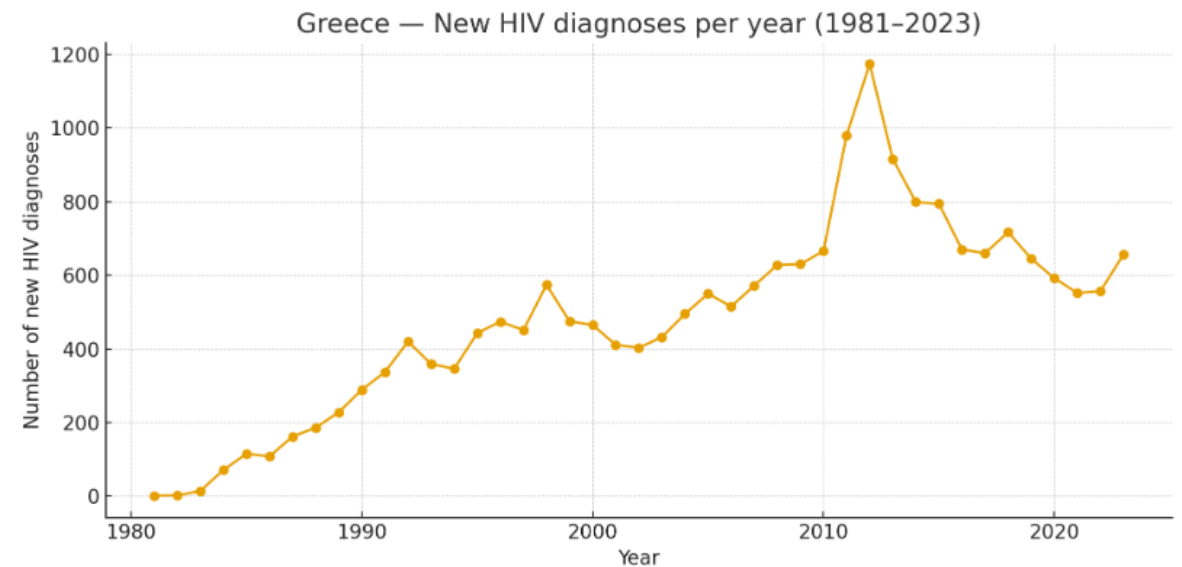
<https://www.nisenet.org/catalog/scientific-image-hiv-infected-cells>

1/7/0 KEMF

HIV infection in Greece: how common is it?

Cumulative reported HIV cases (to Oct 2024): ~21,200.

Adult population in Greece \approx 8 million \rightarrow prevalence \sim 0.26%.



Source: Chat

HIV infection in Greece: how common is it?

Cumulative reported HIV cases (to Oct 2024): ~21,200.

Adult population in Greece \approx 8 million \rightarrow prevalence \sim 0.26%.

RA prevalence in Greece \approx 0.5–0.57% of adults.

Estimated 40,000–45,000 RA patients.

Prevalence roughly double that of HIV

Living with HIV

HIV IN GREECE



Of HIV infected individuals receive
HAART in Greece



Of HIV infected individuals
receive HAART in the EU




Of HIV infected individuals
receive HAART globally

HIV in Greece



**% of HIV-infected
individuals
achieving negative viral
load**

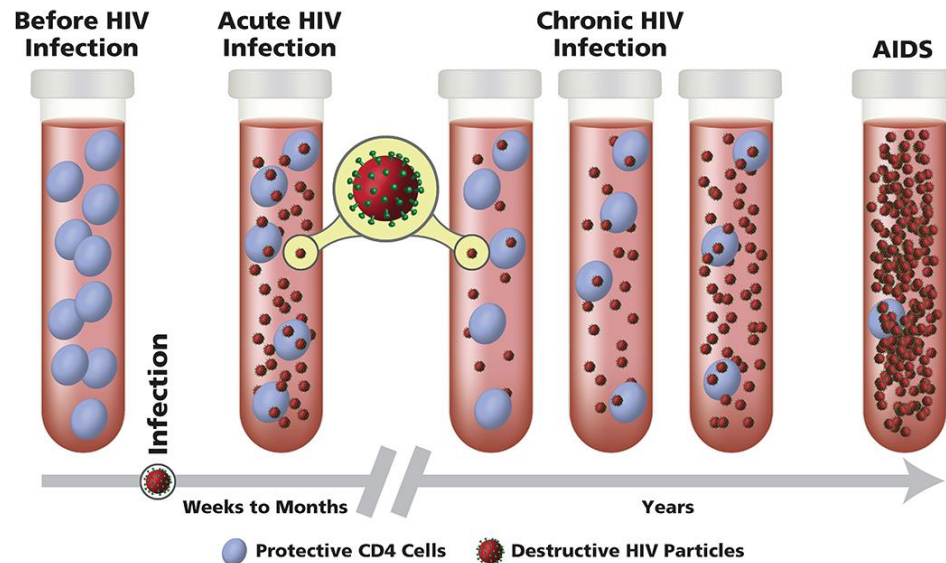
30%

A close-up photograph of a hand pointing at a red HIV ribbon against a background of many more ribbons. The hand is in the foreground, with the index finger pointing towards a red ribbon. The ribbons are arranged in rows, creating a sense of depth. The lighting is soft, and the colors are vibrant.

HIV: pathophysiology and natural history

Stages of HIV infection

HIV Progression Without Treatment



For more information, visit HIVinfo.NIH.gov.

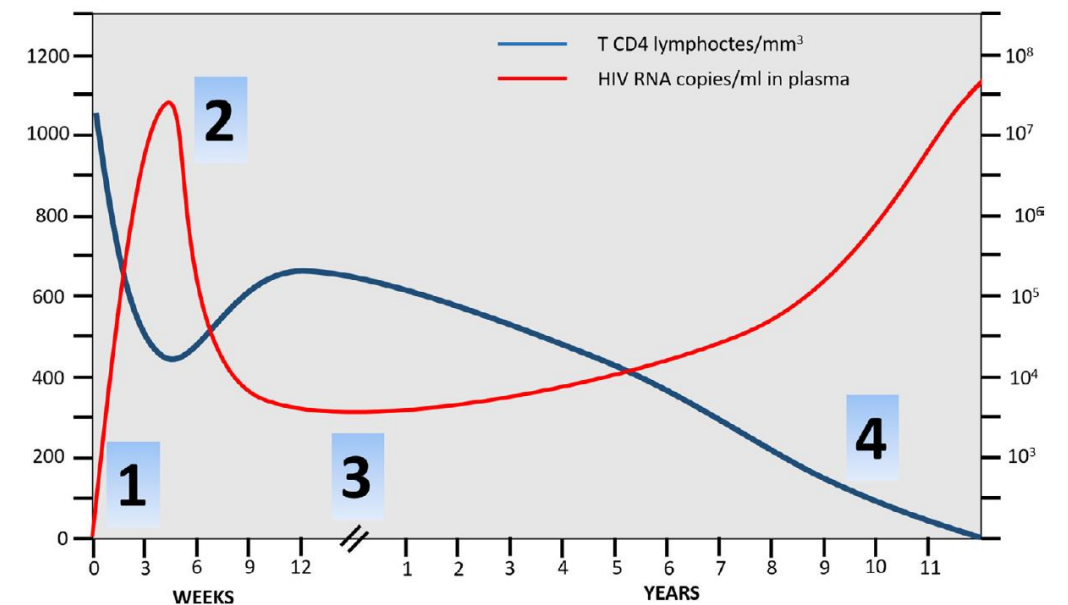
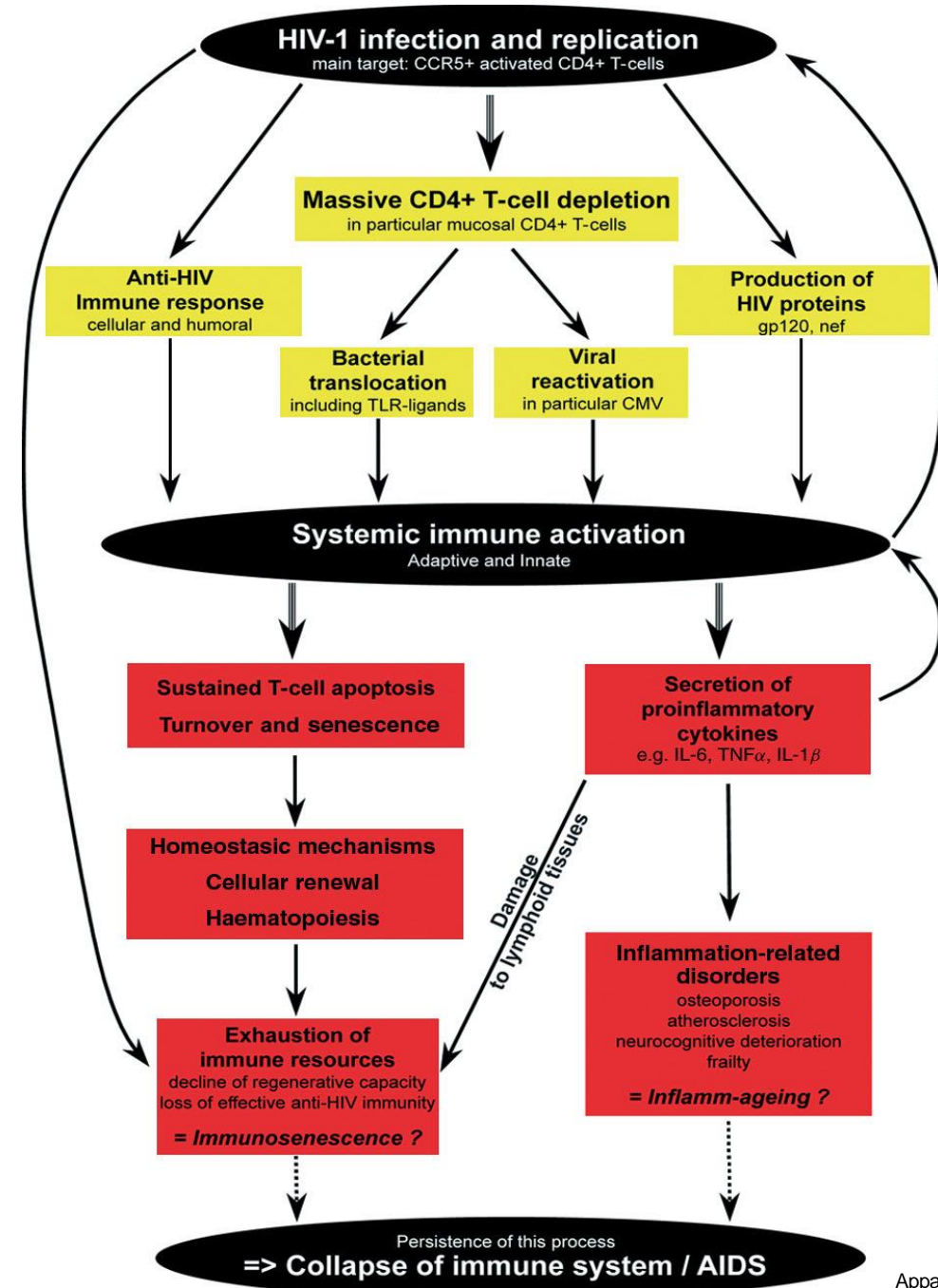


FIG. 2 The natural history of HIV infection.

HIV and immune activation



HIV and immune activation

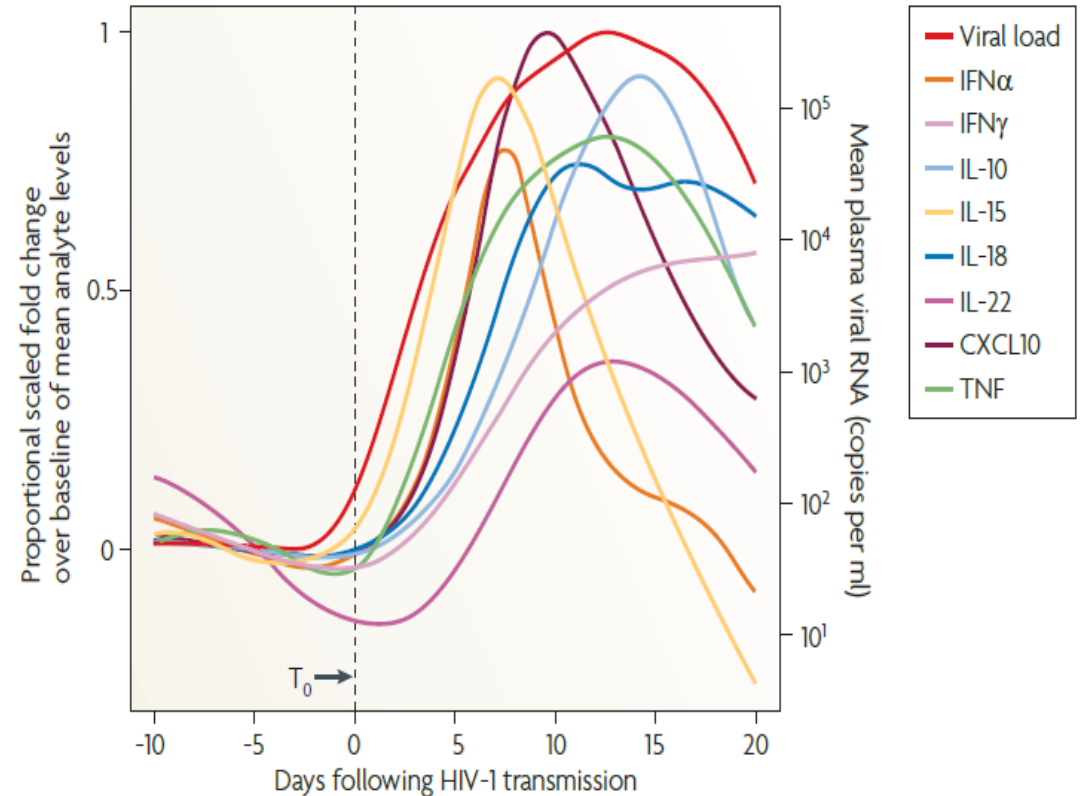
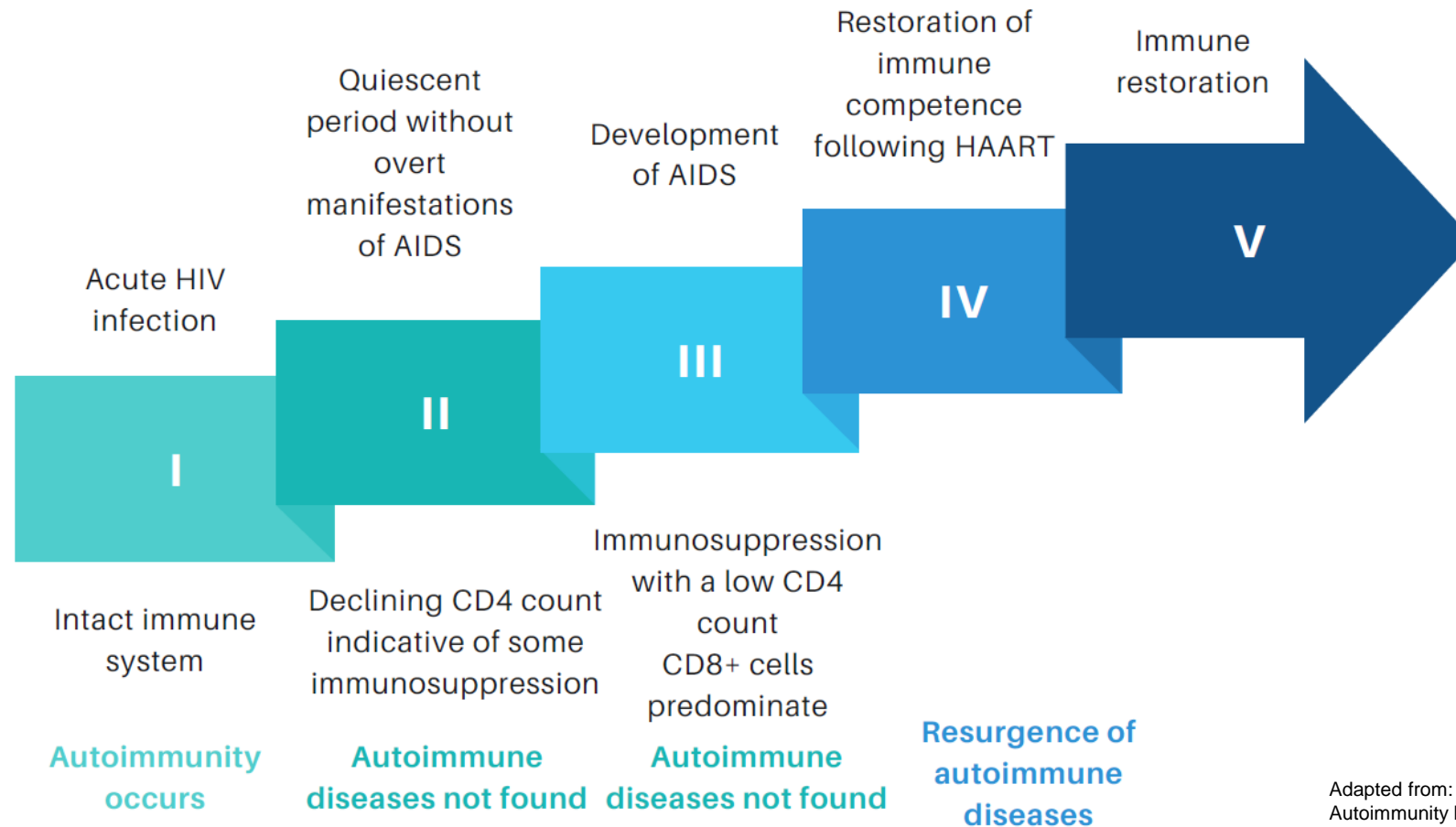
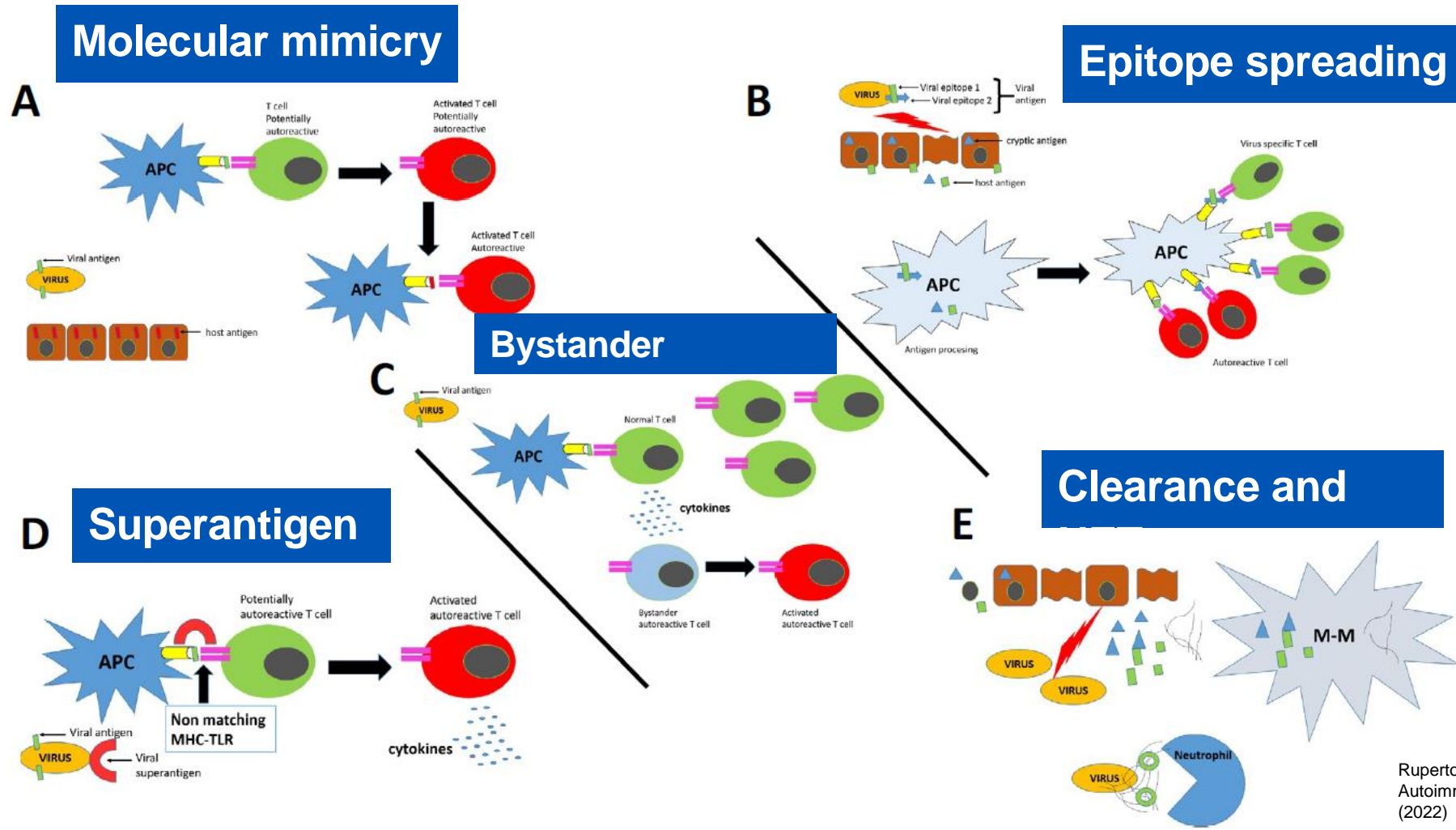


Figure 3 | **The cytokine storm in acute HIV-1 infection.** The relative kinetics of elevation of acute-phase proteins, cytokines and chemokines in the plasma during acute HIV-1 infection. There are two initial waves of cytokines: interleukin-15 (IL-15) and interferon- α (IFN α), followed by tumour necrosis factor (TNF), IL-18 and IL-10. CXCL10, CXC-chemokine ligand 10. Figure is reproduced, with permission, from REF. 58 © (2009) American Society for Microbiology.

HIV and autoimmunity



HIV and autoimmunity: potential mechanisms





The image shows two white plastic pill bottles with green labels. The labels contain text about the medication. A semi-transparent dark grey rectangle is overlaid in the center, containing the word 'HHART' in white. A thin white horizontal line is positioned below the 'HHART' text.

HHART

Rx Only

30 Tablets

Lamivudine and Tenofovir
Disoproxil Fumarate Tablets
300 mg/300 mg

Rx Only

30 Tablets

Lamivudine and Tenofovir
Disoproxil Fumarate Tablets
300 mg/300 mg

Distrib
Inches
Manufact
Chem
LOT/ID

HAART

Antiretroviral Medications

NRTI

Abacavir, ABC ([Ziagen®](#))
Didanosine, ddi ([Videx®](#), [Videx EC®](#))
Emtricitabine, FTC ([Emtriva®](#))
Lamivudine, 3TC ([Epivir®](#))
Stavudine, d4T ([Zerit®](#))
Tenofovir alafenamide, TAF*
Tenofovir disoproxil fumarate, TDF ([Viread®](#))
Zidovudine, AZT/ZDV ([Retrovir®](#))

NNRTI

Delavirdine, DLV ([Rescriptor®](#))
Efavirenz, EFV ([Sustiva®](#))
Etravirine, ETR ([Intelligence®](#))
Nevirapine, NVP ([Viramune®](#), [Viramune XR®](#))
Rilpivirine, RPV ([Edurant®](#))
Doravirine, DOR ([Pifeltro®](#))

PIs

Atazanavir, ATV ([Reyataz®](#))
Darunavir, DRV ([Prezista®](#))
Fosamprenavir, FPV ([Lexiva®](#))
Indinavir, IDV ([Crixivan®](#))
Nelfinavir, NFV ([Viracept®](#))
Ritonavir, RTV/r** ([Norvir®](#))
Saquinavir, SQV ([Invirase®](#))
Tipranavir, TPV ([Aptivus®](#))

INSTIs

Bictegravir, BIC ([Bictarvy®](#))
Dolutegravir, DTG ([Tivicay®](#))
Elvitegravir, EVG ([Vitekta®](#))
Raltegravir, RAL ([Isentress™](#))

Fusion Inhibitor

Enfuvirtide, ENF/T-20 ([Fuzeon®](#))

Entry Inhibitor

Maraviroc, MVC ([Selzentry®](#))
Ibalizumab ([Trogarzo®](#))

PK Enhancer

Cobicistat, COBI/c ([Tybost®](#))
Ritonavir, RTV/r ([Norvir®](#))

**Plus at least 22 FDA
approved**

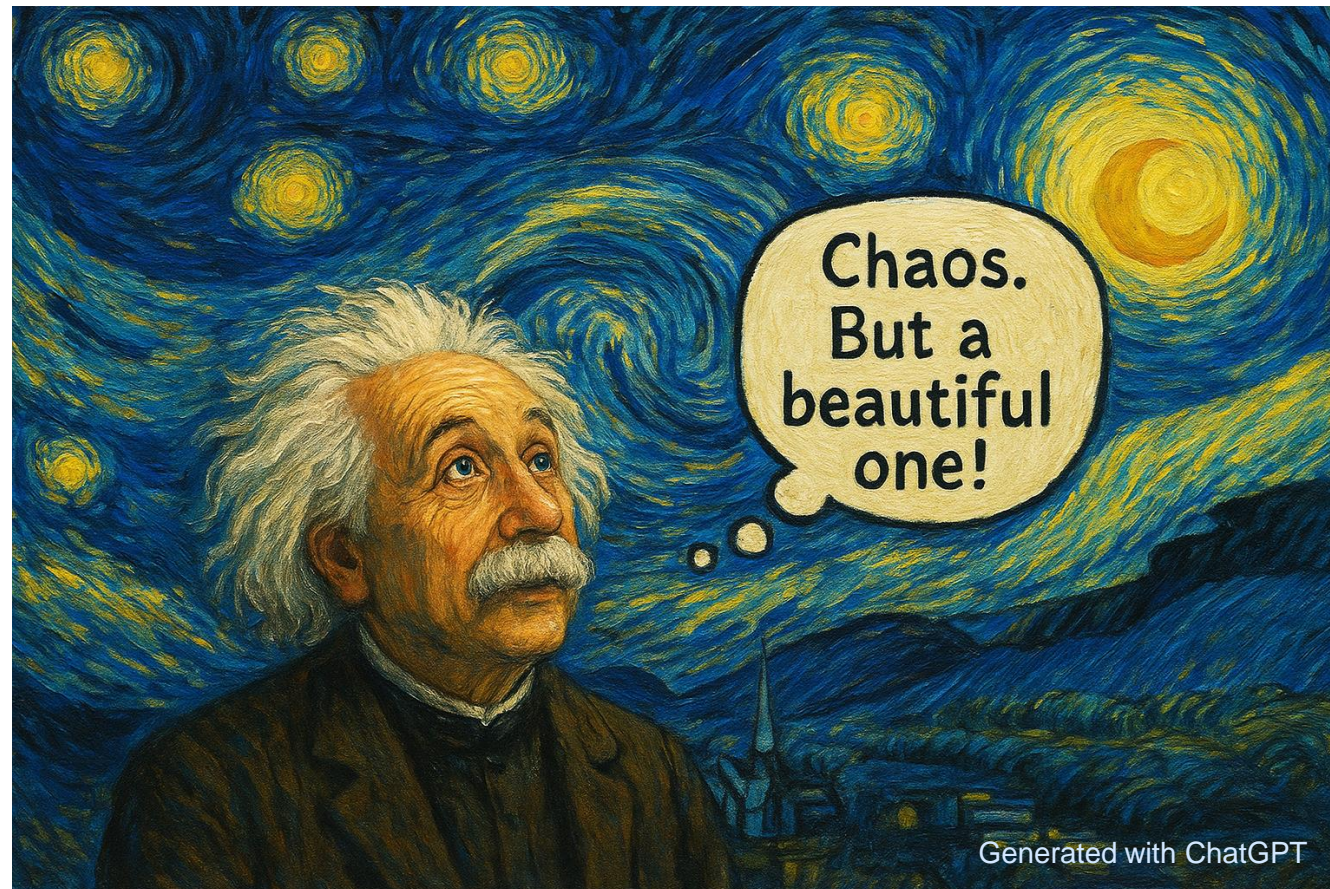
HAART...



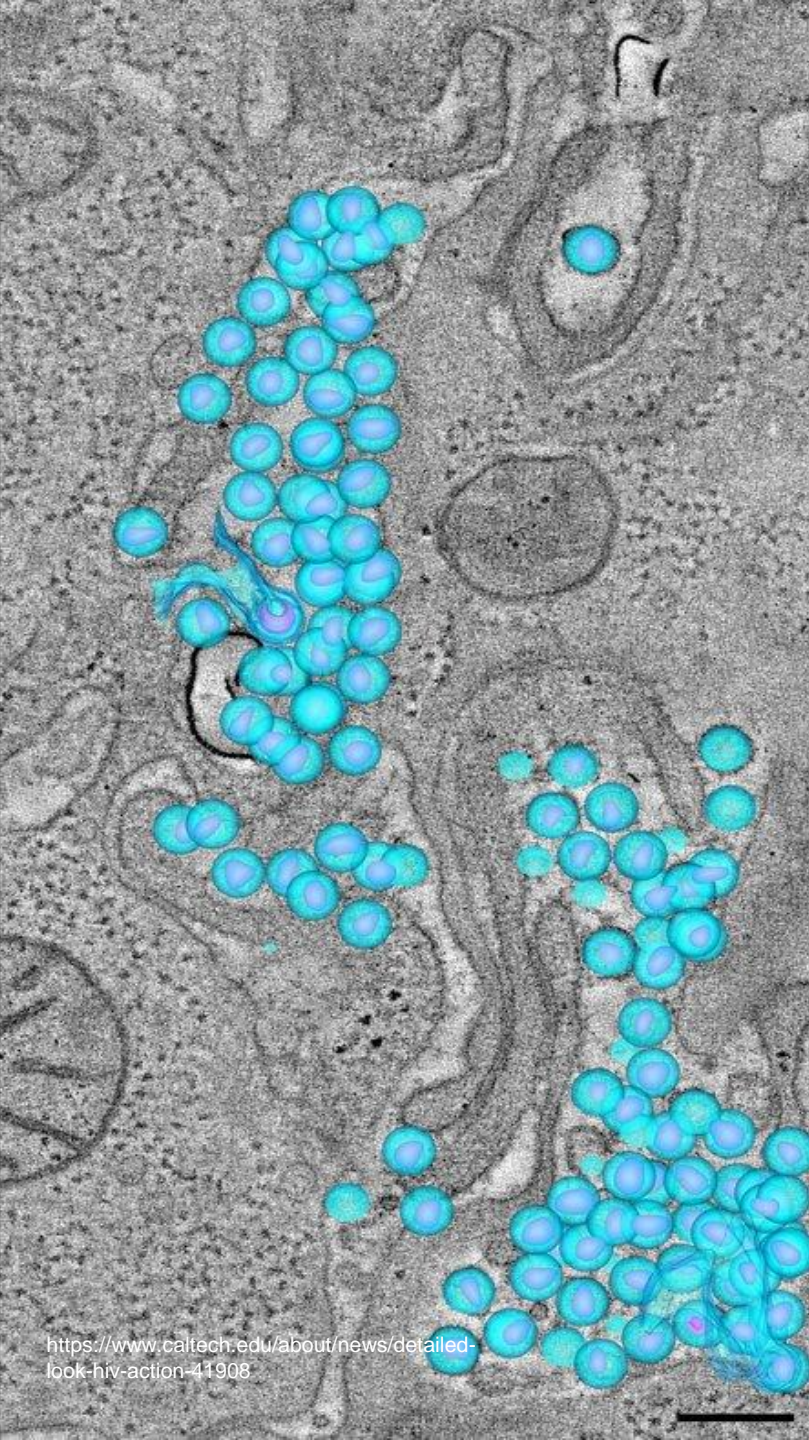
Side effects

Immune
reconstitution

HAART...



Rheumatic diseases in HIV-infected individuals





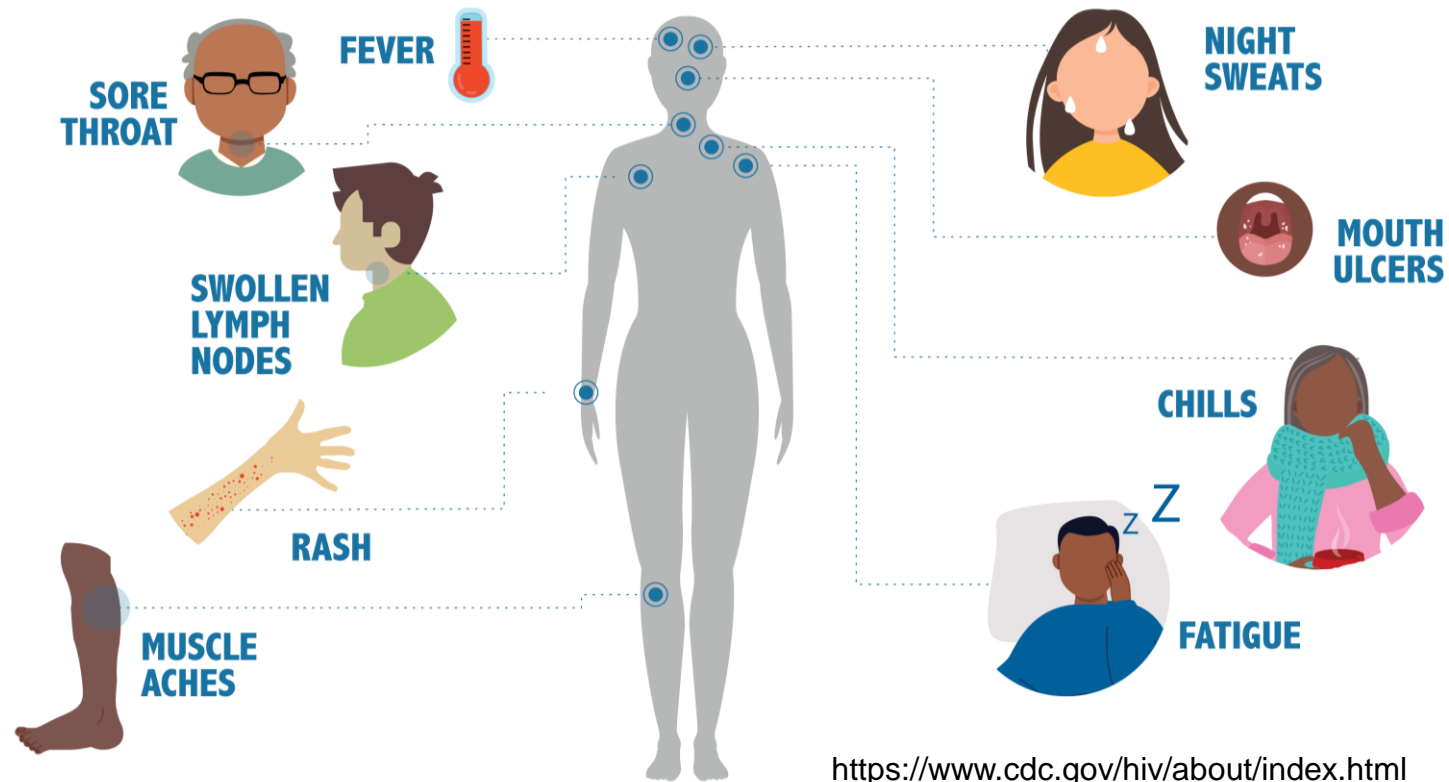
Before HAART

Primary infection
Immune activation
CD4 depletion- CD8
predominance

After HAART

Immune
reconstitution

HIV infection: Symptoms



<https://www.cdc.gov/hiv/about/index.html>

HIV-associated arthritis

Symmetric polyarthritis resembling seronegative RA

Asymmetric oligoarthritis (transient, more common form, knees, ankles)

Monoarthritis

Always self-limiting

Non deforming

Inflammatory

ANA-, RF-, HLA B27-

A kind of reactive arthritis?

Painful articular syndrome

Common (10%)

Late stages of infection

Transient (2-24h)

Extremely painful

Large joints (knees, shoulders, elbows)-
small joints less common

No signs of inflammation

DILS (diffuse infiltrative lymphocytosis syndrome)

Resembles **Sjogren's** syndrome

Salivary gland swelling

Chronic sicca symptoms

Extraglandular manifestations: lymphocytic interstitial pneumonitis (LIP)

But:

Negative for anti-Ro/SSA and anti-La/SSB

CD8+ infiltration of glandular tissue.

Pre-HAART era manifestation

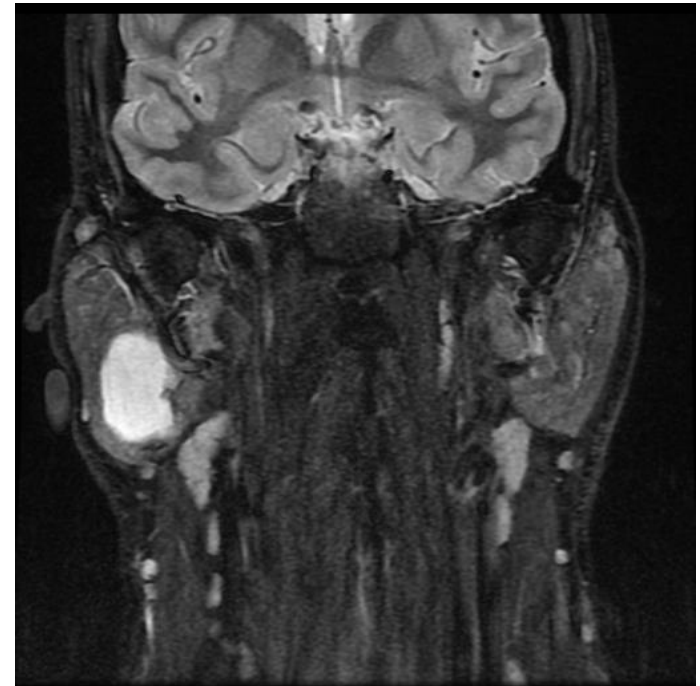
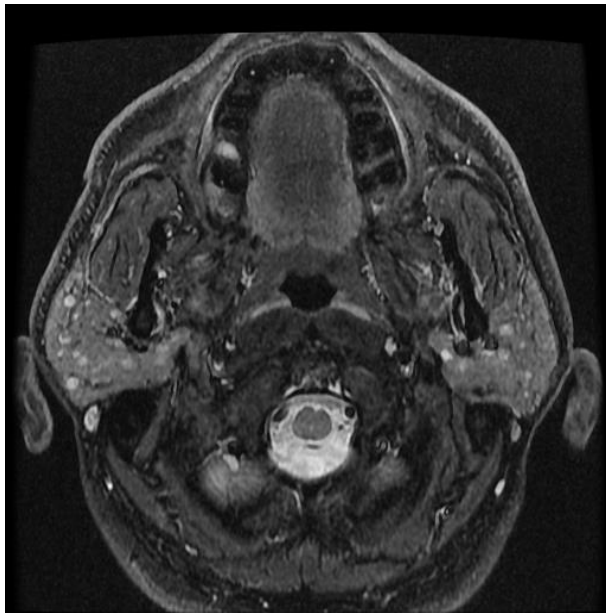
Effective HAART often improves symptoms, but DILS may relapse even with adequate therapy

DILS

a



b



IRIS: Immune reconstitution inflammation syndrome

An overwhelming inflammatory response linked to rapidly recovering immune system

Up to 30% of HIV-infected patients initiating HAART

Clinical deterioration following HAART initiation, despite lowering HIV-RNA levels and increasing CD4 T-cells, in the absence of new opportunistic infection or drug toxicity

Uncoupling of innate and adaptive immune responses during microbial infection in the absence of CD4+ T cells

Hyperactivation of innate immune cells when antigen-specific CD4+ T cell numbers are later restored following HAART

IRIS: Immune reconstitution inflammation syndrome

Deterioration of pre-existing inflammatory or autoimmune disease

Usually self-limiting

Rarely can be severe or life-threatening

Seronegative spondyloarthritis

ReA

PsA

Undifferentiated SpA

Severe Psoriasis

Declining since the introduction of HAART

Seronegative spondyloarthritis

ReA

PsA

Undifferentiated SpA

Severe Psoriasis

Declining since the introduction of HAART

Seronegative peripheral oligo arthritis

Predominantly involving the lower extremities

Usually accompanied by enthesitis

**Mucocutaneous features common
(classically keratoderma blenorrhagicum
and circinate balanitis)**

Urethral symptoms

Axial involvement and uveitis uncommon

Seronegative spondyloarthritis

ReA

PsA

Undifferentiated SpA

Severe Psoriasis

Declining since the introduction of HAART

Severe and deforming

Asymmetrical oligoarthritis- usually lower limbs

Onset heralds the development of opportunistic infections

Seronegative spondyloarthritis

ReA

PsA

Undifferentiated SpA

Severe Psoriasis

Declining since the introduction of HAART

Achilles tendinitis, dactylitis, low-back pain, plantar fasciitis, ankle pain and shoulder pain

Keratoderma blenorrhagicum and circinate balanitis common

Low frequency of uveitis and axial skeleton involvement

Psoriasiform skin rashes

Seronegative spondyloarthritis

ReA

PsA

Undifferentiated SpA

Severe Psoriasis

Severe form

**Guttate, inverse and erythrodermic types
most common**

Declining since the introduction of HAART

RA

Coincidence?

HIV arthropathy?

Immune reconstitution?

Positive RA serology (RF/ACPA) in HIV patients without arthritis

Patients with established RA improve with immunodeficiency secondary to HIV

Vasculitis

Rare

PAN (milder)

Any size vessel can be affected

ANCA in 13-42% of HIV pts

ANCA vasculitis extremely rare

Suspect HIV:

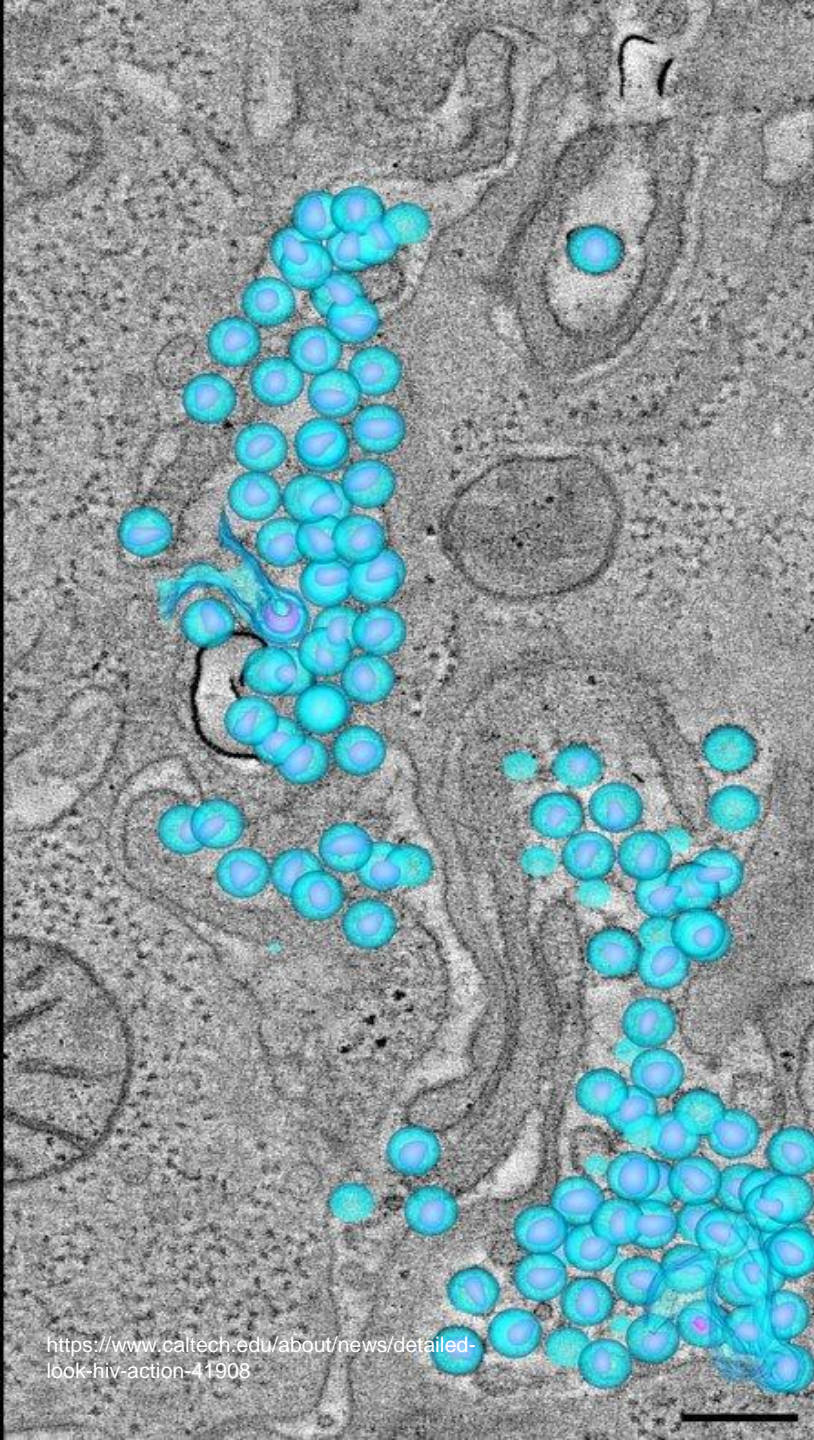
Sexually acquired reactive arthritis or reactive arthritis with unknown mode of acquisition

Keratoconjunctivitis sicca symptoms in the absence of anti-Ro or anti-La antibodies

Atypical lupus (normal complement)

Vasculitis

Unexplained autoantibodies



Treatment

General

Depends on whether on HAART or not

Many symptoms/ syndromes are self-limiting and do not warrant chronic treatment

Great caution if the patient is immunocompromised

Risk of opportunistic infections

Risk of drug interactions



Drug interactions

Steroids+ Protease inhibitors

Protease inhibitors affect the P450 cytochrome (CYP3A4)

Glucocorticoid levels may become extremely variable

High risk of Cushing's syndrome

HIV drug interaction checker. University of Liverpool (<https://www.hiv-druginteractions.org>)



Widely used

Elevated risk of AVN, osteoporosis and fractures in the HIV population

Appropriate bone protection should be carefully considered, particularly in those taking ritonavir.

Caution in the concomitant use of intra-articular triamcinolone and ritonavir

Methylprednisolone more appropriate (with dose reduction)

Costricosteroids

Caution for risk of opportunistic infections

Appear safe when CD4 T-cells $> 200/\mu\text{L}$ and undetectable viral load

(If possible) co-treatment with HAART

**Immunosuppressives
and biologics**

Immunosuppressives and biologics

Limited experience (case reports and case series)

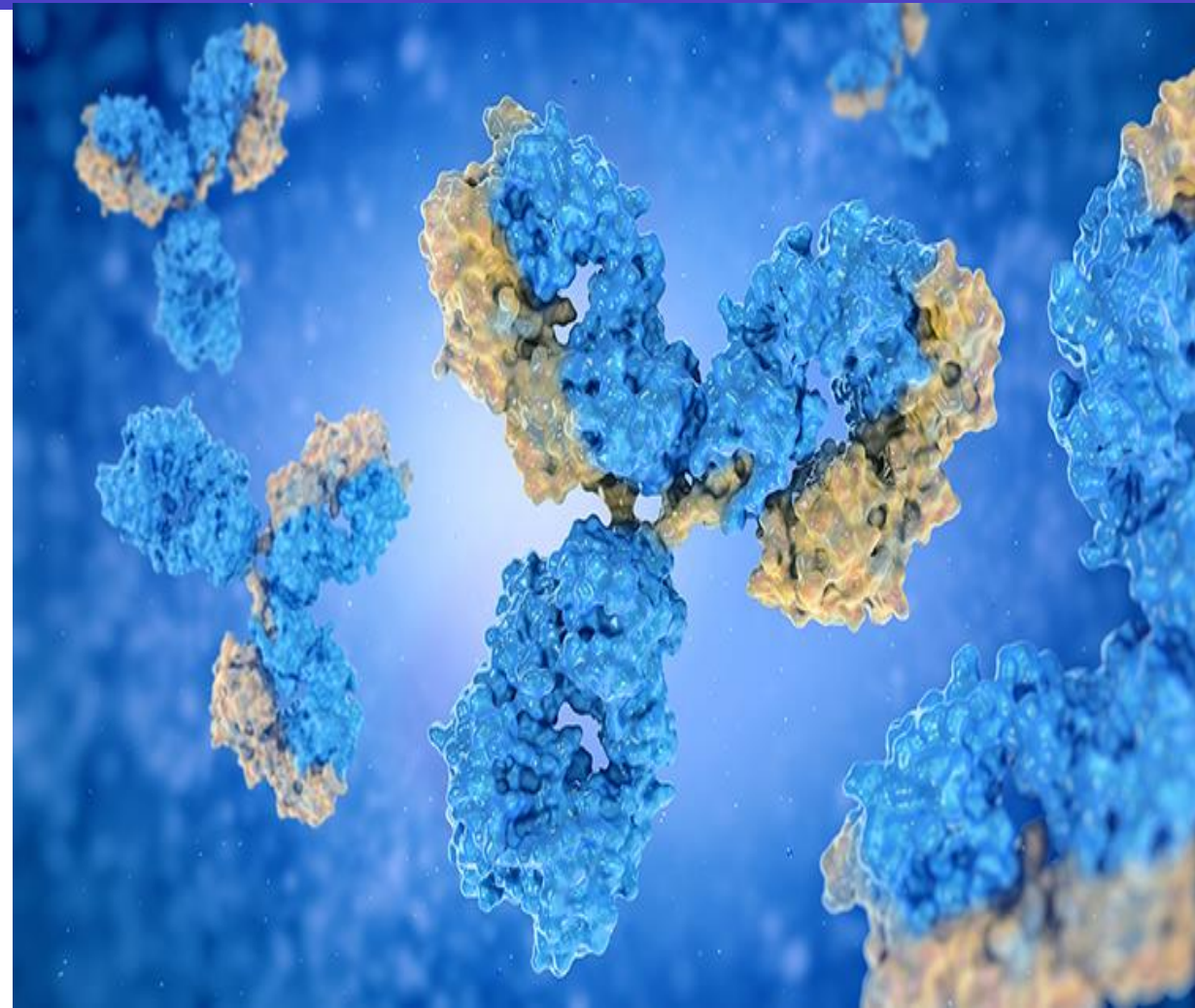
Low quality of data- limited follow-up

179 patients

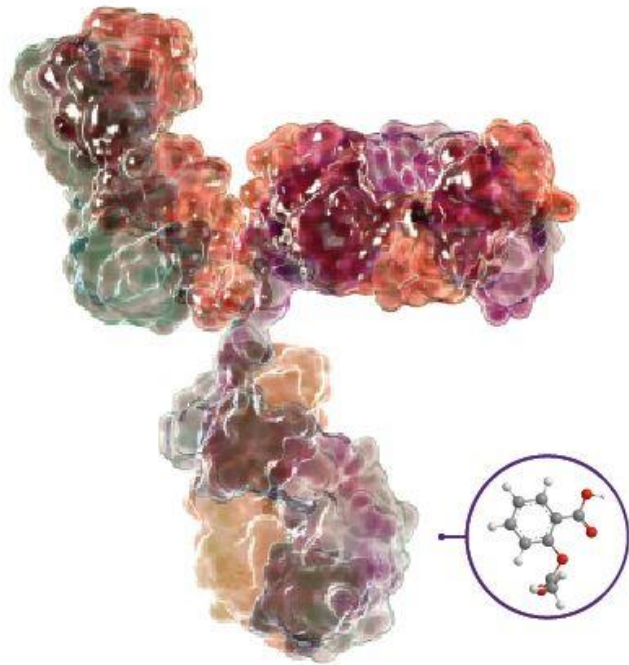
Most commonly used biologic: TNF inhibitors

Generally safe

In some pts transient elevation in HIV viral load after biologic initiation



Immunosuppressives and biologics



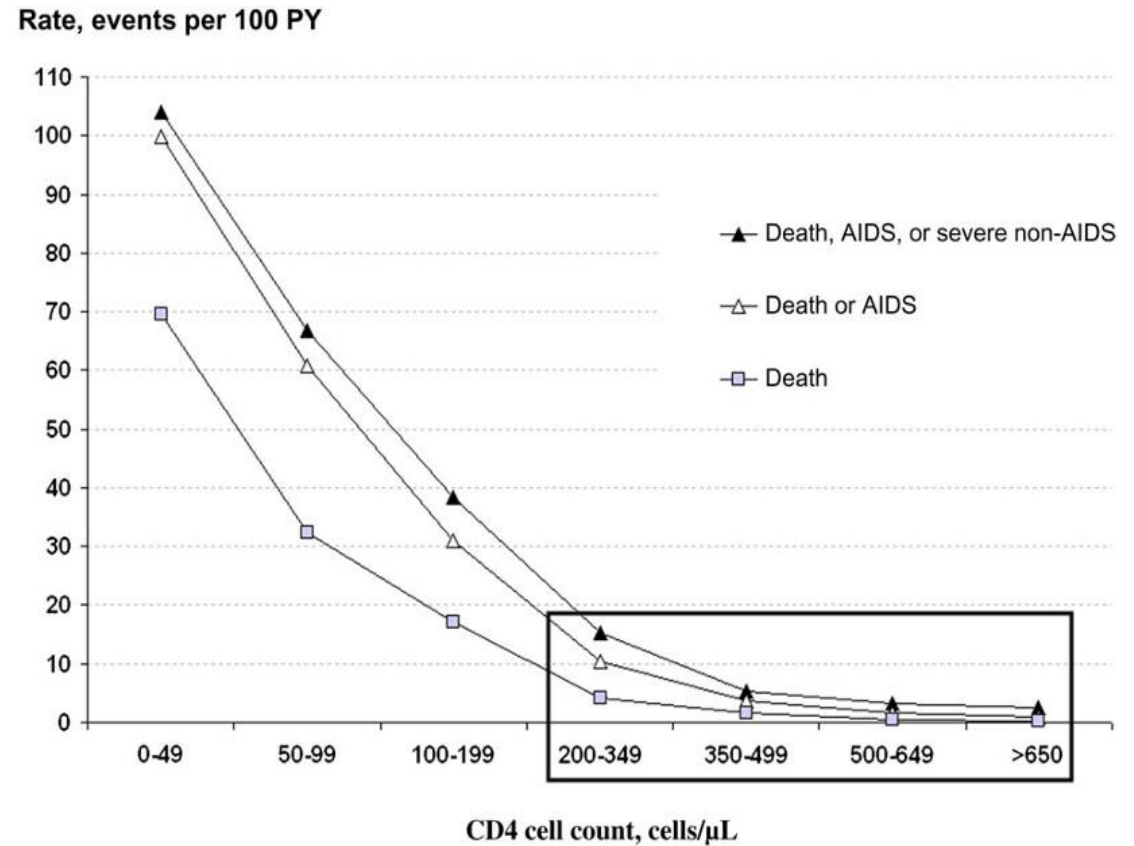
IL17/ 23 biologics- very limited experience (only a handful of case reports)

IL-6 inhibitors only some case reports

JAK inhibitors suppress IFN- γ signaling (crucial for defense against viral infections, eg. Herpes)

Anti CD-20 Mabs with caution (example of Hep B reactivation)

What is the risk of infection in HIV-infected individuals?



Thank you

