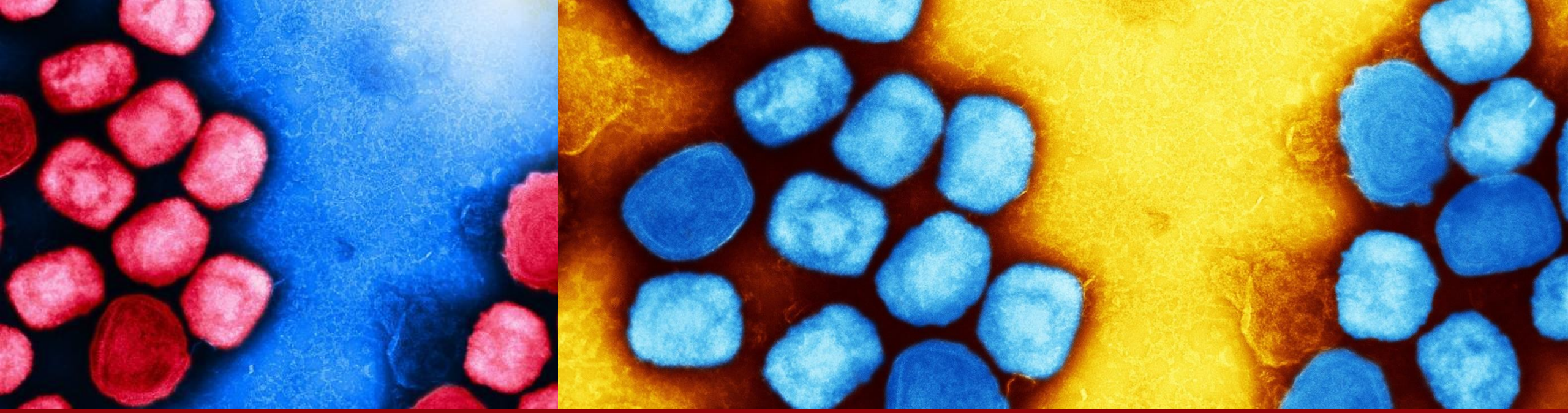

IST émergentes

DIU Stratégies Thérapeutiques et Préventives et Pathologie Infectieuse

Dr Romain PALICH

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MÉDECINE SORBONNE UNIVERSITÉ

iPLesp
Institut Pierre Louis d'Épidémiologie et de Santé Publique
Pierre Louis Institute of Epidemiology and Public Health

Définitions

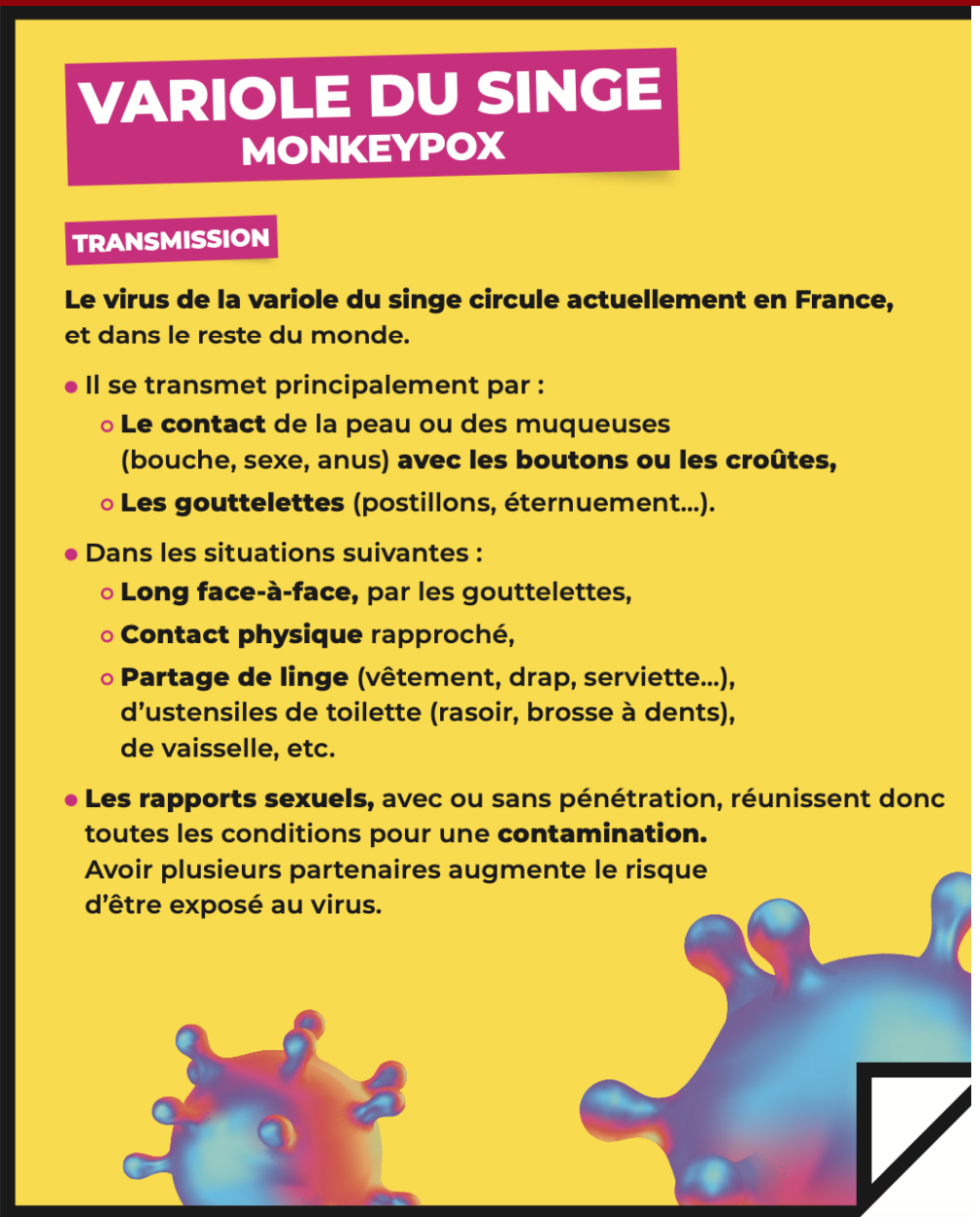
émergence ?

R quelle est la définition d'infection émergente ?

Une infection émergente est une maladie infectieuse qui apparaît soudainement dans une population donnée, ou qui se propage dans une nouvelle région géographique, et qui présente un potentiel de menace pour la santé publique en raison de sa nouveauté, de sa capacité à se propager rapidement et de son impact sur la santé humaine. Ces infections émergentes sont souvent causées par des agents pathogènes tels que des virus, des bactéries, des parasites ou des champignons, qui peuvent avoir muté, évolué ou été transmis à l'homme à partir d'animaux ou d'autres sources.

IST ?

Mpox : nouvelle IST ?



Clinical Infectious Diseases

VIEWPOINTS

Is Mpox a Sexually Transmitted Infection? Why Narrowing the Scope of This Disease May Be Harmful

Aniruddha Hazra[1] and Joseph N. Cherabie[2]

[1]Section of Infectious Diseases and Global Health, University of Chicago Medicine, Chicago, Illinois, USA; and [2]Division of Infectious Diseases, Washington University School of Medicine–St. Louis, St. Louis, Missouri, USA

(See the Viewpoints by Allan-Blitz et al. on pages 1508–12.)

The 2022 multinational mpox outbreak has been characterized by unprecedented spread among men who have sex with men outside of sub-Saharan Africa. Close contact during sex and intimacy has been well established as a key pathway for human-to-human transmission in the current outbreak. Discussions on whether to assign this illness as a sexually transmitted infection (STI) have been ongoing since the initiation of the outbreak. While sexual contact certainly appears to be a primary means of spread, classifying mpox as an STI is inaccurate based on its known transmission dynamics, yields potential unintended consequences, and ignores the historical impact of the disease in Central and West Africa. Rather than focusing our energy on disease categorization, more effort should be placed on destigmatizing this illness and empowering communities at risk to protect themselves from mpox.

Hazra, *CID*, 2023

Mpox : épidémiologie

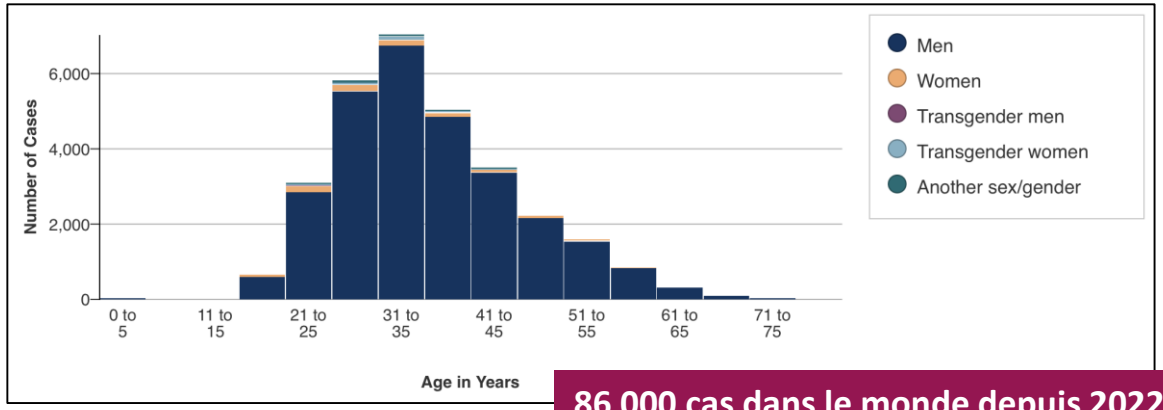
The NEW ENGLAND JOURNAL of MEDICINE

Monkeypox Virus Infection in Humans across 16 Countries — April–June 2022

Table 1. Demographic and Clinical Characteristics of the Persons with Monkeypox.*

Characteristic	All Persons (N=528)
Median age (range) — yr	38 (18–68)
Sex or gender — no. (%)	
Male	527 (>99)
Female	0
Trans or nonbinary	1 (<1)
Sexual orientation — no. (%)†	
Heterosexual	9 (2)
Homosexual	509 (96)
Bisexual	10 (2)
Race or ethnic group — no. (%)†	
White	398 (75)
Black	25 (5)
Mixed race	19 (4)
Latinx	66 (12)
Other or unknown	20 (4)
HIV positive — no. (%)	218 (41)
HIV negative or status unknown — no. (%)	310 (59)
Use of preexposure prophylaxis against HIV — no./total no. (%)	176/310 (57)

- 99% d'hommes, dont 98% de HSH
- PVVIH : 41% / séronégatifs sous PrEP : 33%
- IST concomitante : 29%
- Participation à un évènement communautaire festif sexuel : 32%



86 000 cas dans le monde depuis 2022

Quasiment que des hommes jeunes

Orkin, *NEJM*, 2022 / **données CDC**

Mpox : détection dans le sperme (1/2)

THE LANCET
Infectious Diseases

Viral loads in clinical samples of men with monkeypox virus infection: a French case series

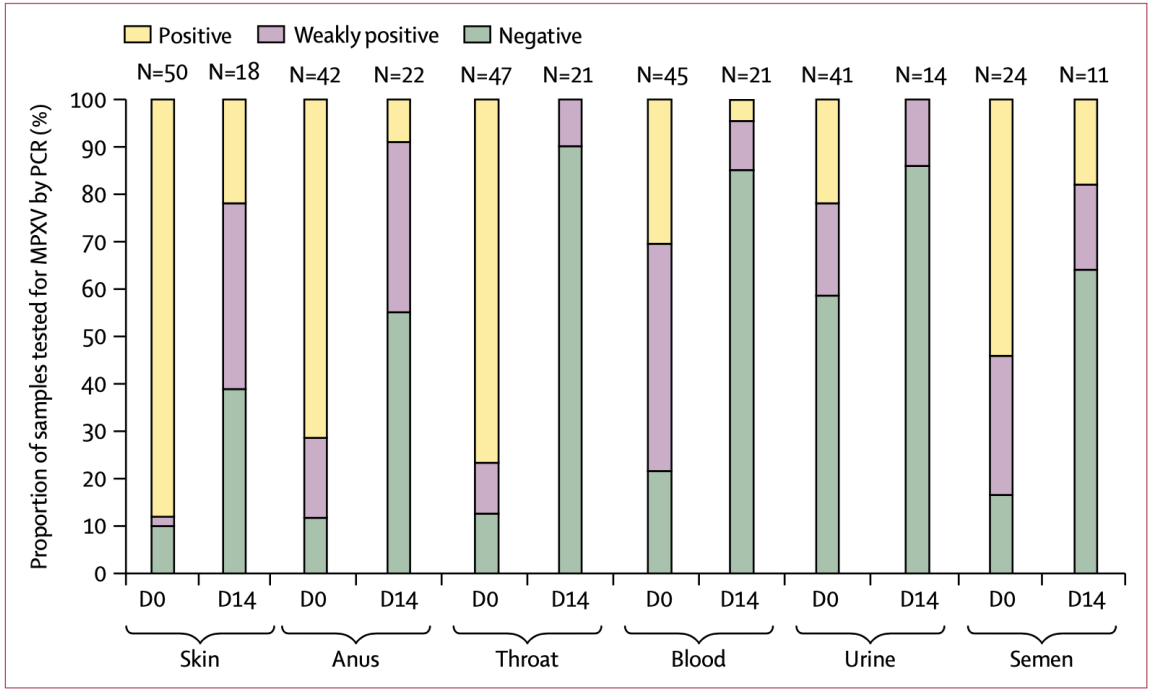


Figure 1: **Proportion of clinical samples found to be positive, weakly positive, and negative for MPXV at diagnosis, by use of PCR**

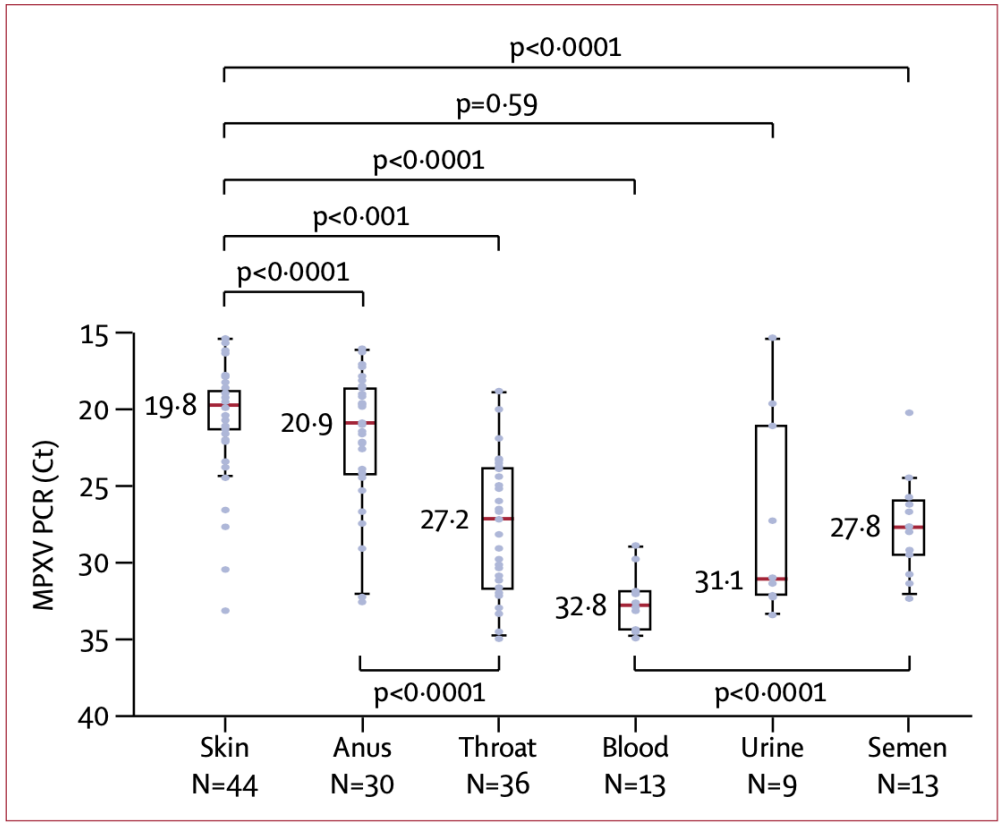


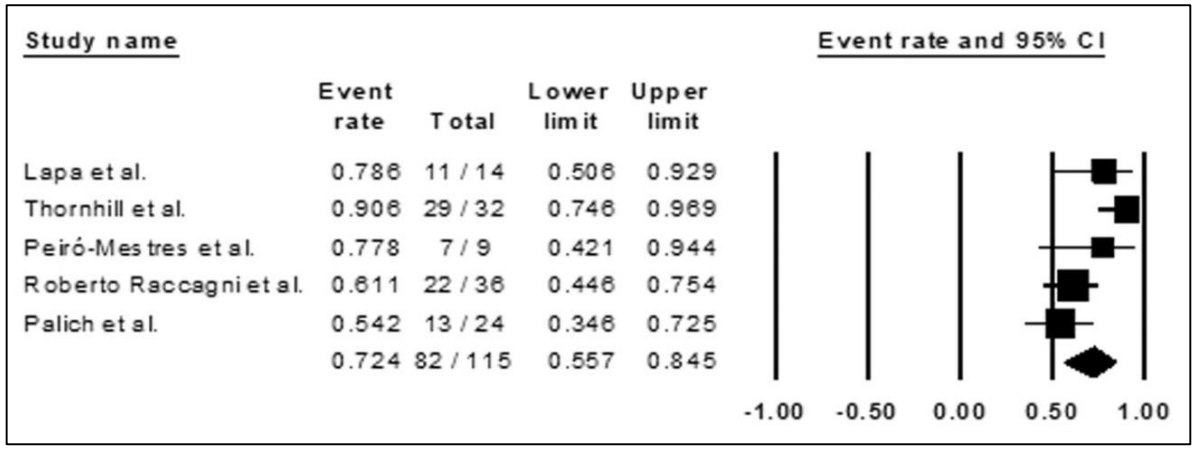
Figure 2: **MPXV viral loads given as cycle thresholds, according to sampled sites**

Palich, LID, 2022

Mpox : détection dans le sperme (2/2)

JOURNAL OF MEDICAL VIROLOGY

Monkeypox viral detection in semen specimens of confirmed cases: A systematic review and meta-analysis



- Données poolées : 115 patients
- PCR MPXV positive dans 72% des cas, de J1 à J19

THE LANCET Infectious Diseases

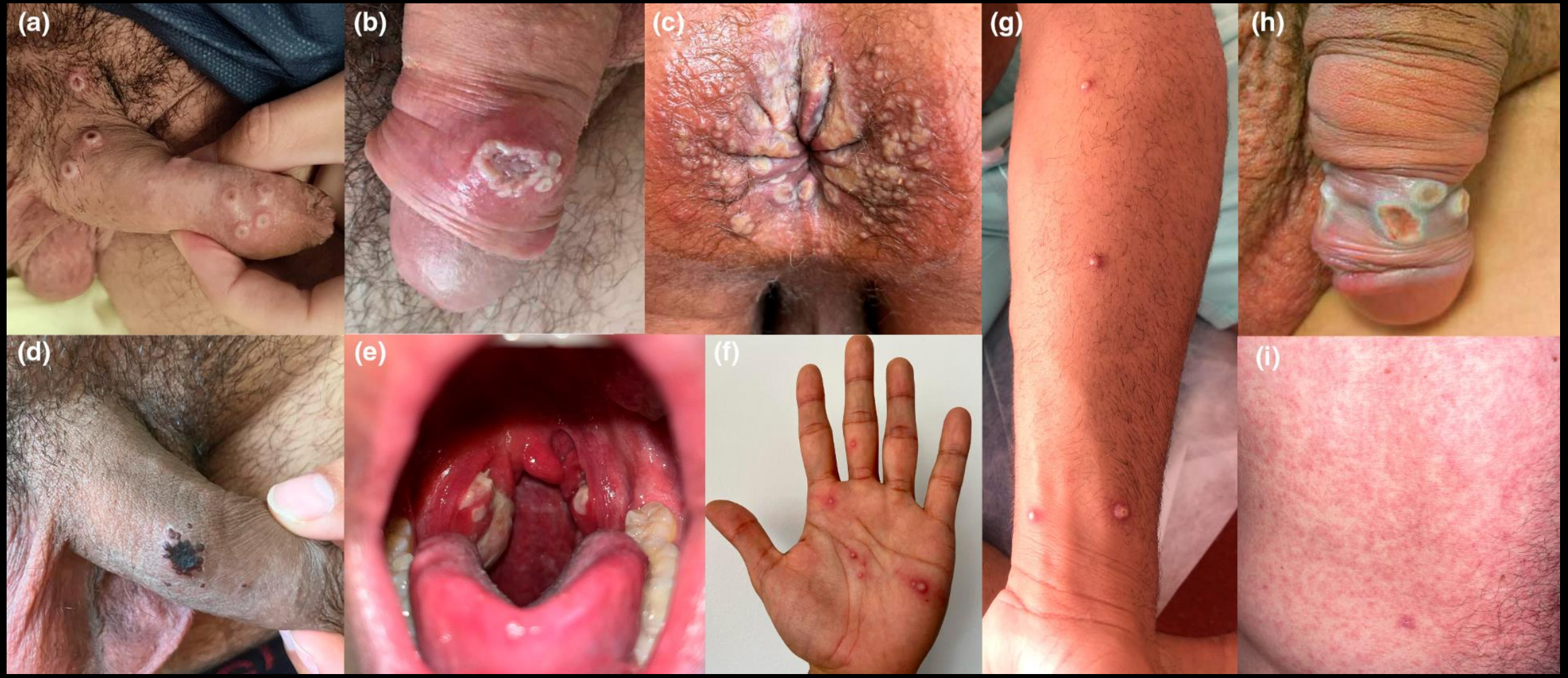
Monkeypox virus isolation from a semen sample collected in the early phase of infection in a patient with prolonged seminal viral shedding

(table). Monkeypox virus DNA was detected in plasma collected on day 8 after symptom onset only. Urine samples were negative. Monkeypox virus DNA was detected in all semen samples tested during the period of observation (Cq range 27·8–40·6). Semen collected on day 6 after symptom onset was inoculated in Vero E6 cells (ATCC; Manassas VA, USA). Clear cytopathic effect was observed 48 h after the inoculum and monkeypox virus replication was confirmed by real-time PCR on DNA purified from cell growth medium collected after 48 h, 72 h, and 96 h. Notably, on day 6 after symptom onset, anti-monkeypox virus IgG antibodies (1:80) were

Virus isolé à partir du sperme capable d'infecter des cellules *in vitro*

Reda, *J Med Virol*, 2023 / **Lapa**, LID, 2022

Mpox : expression clinique



Nouchi, JEADV, 2022

Mpox : lésions et pratiques sexuelles

THE LANCET

Human monkeypox virus infection in women and non-binary individuals during the 2022 outbreaks: a global case series

- Femmes trans : sexe anal dans 81% des cas, lésions anales dans 76% des cas
- Femmes cis : sexe anal dans 15% des cas, lésions anales dans 24% des cas

	Trans women (n=62)	Cis women and non-binary individuals (n=74)
(Continued from previous page)		
Type of sex		
Anal only	3/62 (5%)	0/74
Oral and anal	47/62 (76%)	1/74 (1%)
Oral only	1/62 (2%)	1/74 (1%)
Vaginal and anal	0/62	1/74 (1%)
Vaginal and oral	0/62	25/74 (34%)
Vaginal only	0/62	17/74 (23%)
Vaginal, oral, and anal	0/62	9/74 (12%)
Not known	11/62 (18%)	20/74 (27%)

	Trans women (n=62)	Cis women and non-binary people (n=74)
(Continued from previous page)		
Vulvar skin lesions (non-mucosal)		
No	59/60 (98%)	29/71 (41%)
Yes	1/60 (2%)	42/71 (59%)
Not known	2	3
Perianal skin lesions (non-mucosal)		
No	14/59 (24%)	55/72 (76%)
Yes	45/59 (76%)	17/72 (24%)
Not known	3	2

Thornill, Lancet, 2022

Mpox : nouvelle IST !

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MPOX

Mpox and Safer Sex

Vaccination is an important tool in preventing the spread of mpox. If you are at risk for mpox but haven't received your two-dose vaccine yet, temporarily changing some parts of your sex life might reduce the risk of being exposed to the virus.

Scan this code for information on mpox vaccines, including where to get one.

Reducing or avoiding behaviors that increase risk of mpox exposure is also important when you are between your first and second shots of vaccine. Your protection will be highest when you are two weeks after your second dose of vaccine.

Make a habit of exchanging contact information with any new partner to allow for sexual health follow-up, if needed.

Talk with your partner about any mpox symptoms and be aware of any new or unexplained rash or lesion on either of your bodies, including the mouth, genitals (penis, testicles, vulva, or vagina), or anus (butthole). If you or your partner have or recently had mpox symptoms or have a new or unexplained rash anywhere on

www.cdc.gov/mpox

your body, do not have sex and see a healthcare provider. In some cases, symptoms may be mild, and some people may not even know they have mpox.

If you or a partner has mpox or think you may have mpox, the best way to protect yourself and others is to avoid sex of any kind (oral, anal, vaginal) and kissing or touching each other's bodies – while you are sick. **Especially avoid touching any rash.** Do not share things like towels, fetish gear, sex toys, and toothbrushes.

Even if you feel well, here are some ways to reduce your chances of being exposed to mpox if you are sexually active:

- Take a temporary break from activities that increase exposure to mpox, until you are two weeks after your second dose. This will greatly reduce your risk.

Continue to Next Page →

CDC

CS 333304-A | 06/16/2023

Clinical Infectious Diseases

VIEWPOINTS

IDSA Infectious Diseases Society of America

hivma hiv medicine association

OXFORD

A Position Statement on Mpox as a Sexually Transmitted Disease

Lao-Tzu Allan-Blitz,[1] Monica Gandhi,[2,3] Paul Adamson,[4] Ina Park,[5] Gail Bolan,[6] and Jeffrey D. Klausner[7]

[1]Division of Global Health Equity, Department of Medicine, Brigham and Women's Hospital, USA; [2]Division of HIV, Infectious Diseases, and Global Medicine, Department of Medicine, University of California, USA; [3]Ward 86 HIV Clinic, San Francisco General Hospital, USA; [4]Division of Infectious Diseases, Department of Medicine, University of California, USA; [5]Department of Family and Community Medicine and Department of Obstetrics, Gynecology, and Reproductive Sciences, School of Medicine, University of California, San Francisco, USA; [6]Berkeley, California; and [7]Department of Population and Public Health Sciences, Keck School of Medicine, University of Southern California, USA

(See Viewpoints by Hazra and Cherabie on pages 1504–7.)

The global outbreak of mpox virus constituted an international public health emergency. Reports have highlighted (1) a temporal association between sexual activity and mpox, (2) an association between specific sexual practices and location of lesion development, (3) a high frequency of sexual practices conferring risk for other sexually transmitted infections among cases of mpox, (4) that mpox virus can be isolated from sexual fluids, (4) that isolated virus is infectious, and (5) a high frequency of anogenital lesions prior to disease dissemination suggesting direct inoculation during sexual activities. Finally, a growing body of evidence suggests that sexual transmission is the *predominant* mode of transmission for mpox virus. We therefore conclude that mpox is a sexually transmitted disease. Labeling it as such will help focus public health interventions, such as vaccinations, testing, and treatment, as well as facilitate focused awareness and education programs toward behavioral modifications to reduce exposures.

Allan-Blitz, *CID*, 2023

Une maladie bénigne ?

Date and Location	1970–1979 Central and West Africa	1981–1986 DRC	1996–1998 DRC	2003 USA	2005 South Sudan
Case Fatality Rate (%)	17 [40]	9.8 [1] [41–43]	1.5 [2] [44]	No recorded deaths	No recorded deaths

[1] Specifically between 1981 and 1985 the recorded CFR was 9% [43]; [2] The low CFR between 1996 and 1997 was suggestive of varicella not MPXV [28].

- Complications rapportées dans les séries africaines historiques : surinfection cutanée, atteintes pulmonaires, digestives, neurologiques / mortalité plus importante chez les enfants
- Aux USA (2005), sur 34 cas confirmés, 5 formes sévères (fièvre ≥38,3°C et ≥100 lésions cutanées), 9 hospitalisations de plus de 48h, aucun décès
- Au Niger (2007-2022), sur 257 cas confirmés, 9 décès, chez des PVVIH fortement immunodéprimés : taux de mortalité de 3,5%

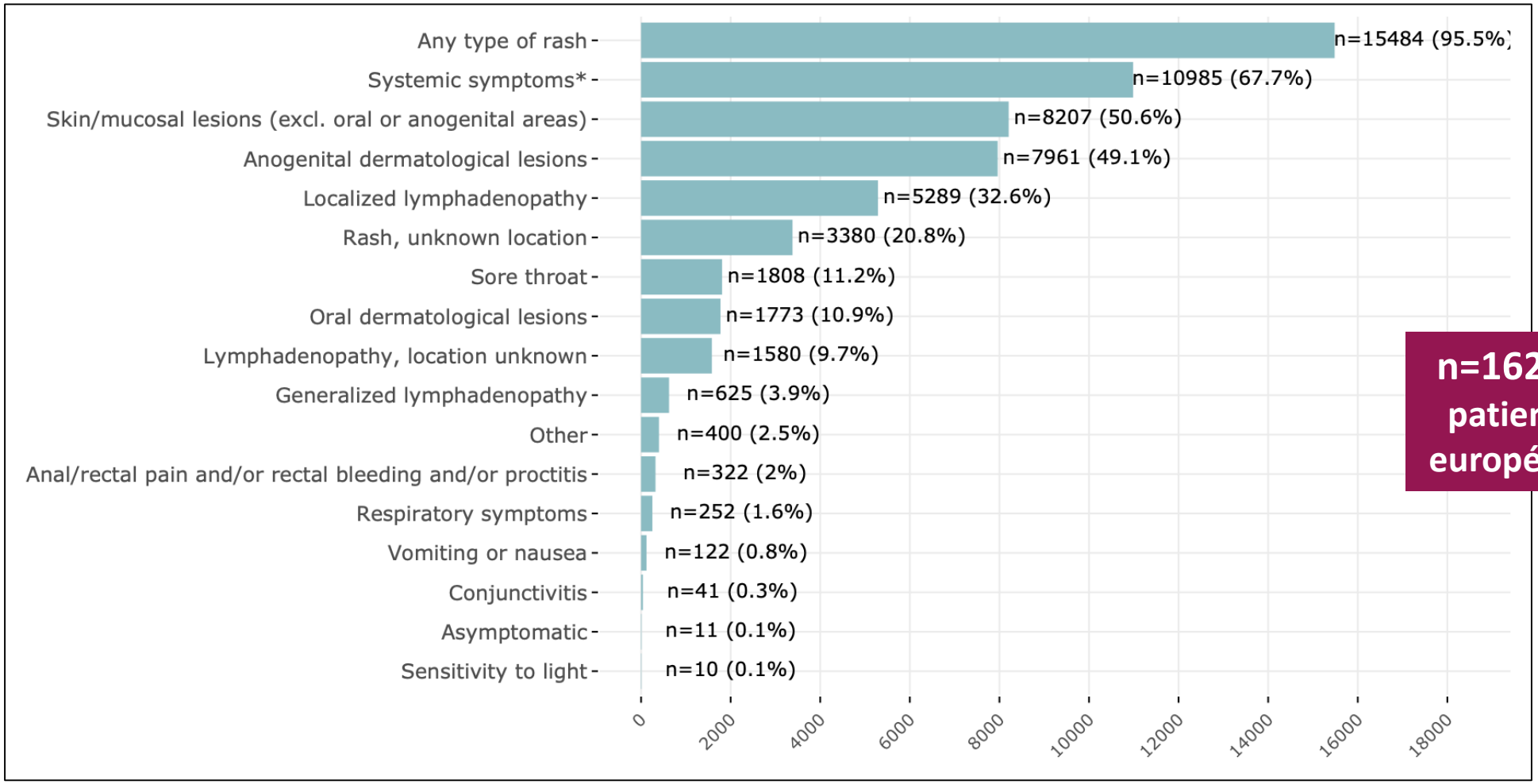
- Clade I / clade II

WHO Region	Total confirmed cases	Total deaths	Cases in last three weeks[i]	3-week change in cases (%)
Region of the Americas	59 480	117	67	-50
European Region	25 912	7	22	214
African Region	1 741	21	41	-61
Western Pacific Region	665	0	74	-30
Eastern Mediterranean Region	90	1	0	-
South-East Asia Region	84	1	33	560
Total	87 972	147	237	-34

Pandémie 2022-2023 : 147 décès sur 88 000 cas confirmés = taux de mortalité de 0,17%

Huhn, *CID*, 2005 / **données WHO**, 2023

Présentation clinique



n=16215 patients européens

Données ECDC, 2023

Patients hospitalisés

Patient	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Age (y)	34	35	30	31	44	47	25	28	36								
Medical history	HIV	HIV	None	None	None	Venous thrombosis	None	Cured ALL	HIV Chemsex								
Symptoms																	
Fever	X	X	X		X	X	X	X	X								
Total number of skin lesions	30–50	6–15	6–15	6–15	6–15	6–15	6–15	15–30	6–15								
Lymph nodes	X			X	X	X	X	X	X								
Necrotic cellulitis							Genital + perineal										
Reason for hospitalization																	
Paronychia			X	X		X											
Lymphangitis			X	X		X											
Dysphagia		X			X												
Colitis								X									
Rectitis	X							X									
Ocular signs			X						X								
Urologic	Uretritis																
Respiratory																	
Surgical management			X			X											
Antibiotics	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X
Antiviral treatment			Cidofovir														
Pain killers	Opioids	Opioids	Acetaminophen	Acetaminophen	Acetaminophen	Acetaminophen	Nefo-pam	Opioids	Opioids	Acetaminophen	Acetaminophen	Acetaminophen	Opioids	Acetaminophen	Opioids	Nefo-pam	Acetaminophen
Other specialists involved			Ortho-pedist Ophthalmo-logist	Ortho-pedist	ENT surgeon	Ortho-pedist	Uro-logist	Gastro-entero-logist	Oph-thalmo-logist		Ortho-pedist	Uro-logist Dermatologist	Procto-logist		Gastro-entero-logist	ENT surgeon	ENT surgeon
Length of hospital stay (d)	2	2	7	4	5	3	3	15	3	2	3	3	4	3	3	3	3

The median (IQR) delay between the onset of symptoms and hospitalization was 7 (5–9) days. Hospitalizations were related to skin infections in six cases, gastrointestinal symptoms in four cases, severe non-cardiac angina in four cases, ocular impairment in two cases, and respiratory tract impairment in one case. One patient with an ocular involvement also had paronychia. Overall, all but one patient had a suspicion of bacterial superinfection, and 16 patients received antibiotics. Severe pain was frequent, and all patients required painkillers, including acetaminophen (17/17) and opioids (7/17).

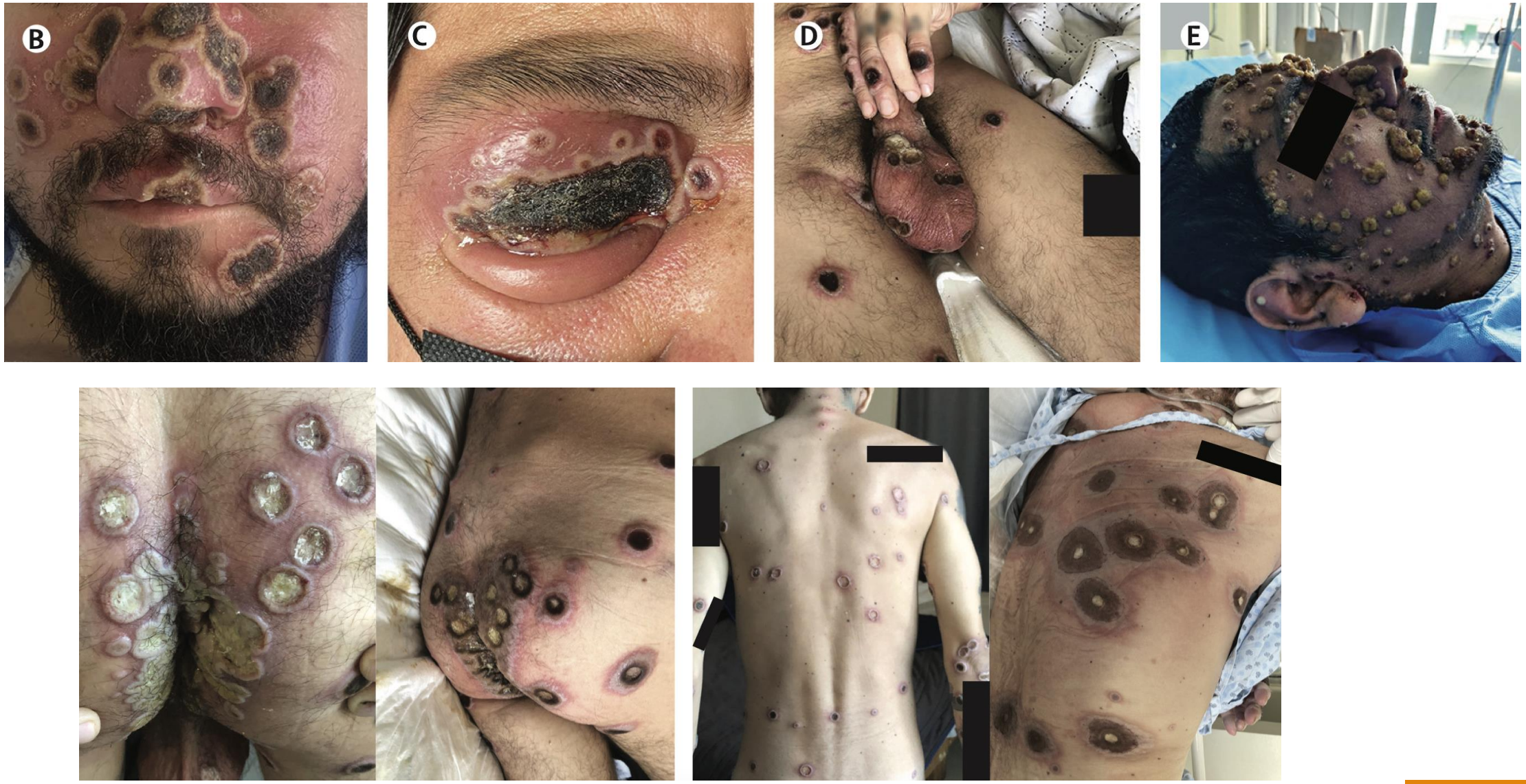
CMI CLINICAL MICROBIOLOGY AND INFECTION ESCMID

Clinical characteristics of ambulatory and hospitalized patients with monkeypox virus infection: an observational cohort study

- 17 hospitalisations sur 247 cas confirmés, 4 PVVIH avec CD4 >500/mm^3, aucun décès
- Surinfections bactériennes fréquentes (16/17 patients sous antibiotiques) + prise en charge de la douleur
- Durée médiane du séjour hospitalier : 3 jours (IQR 3-4)

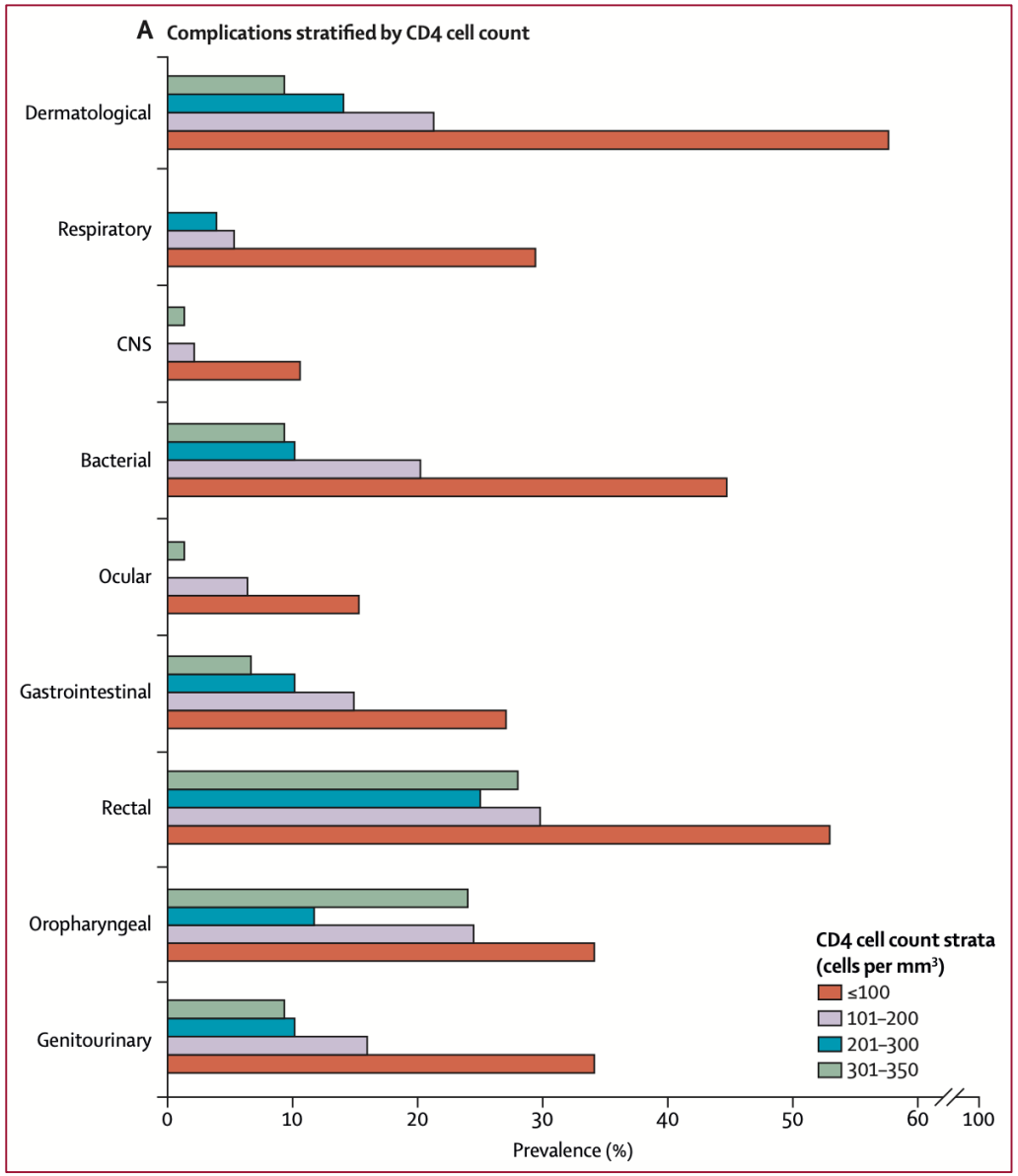
Mailhe, *CMI*, 2022

Expression clinique



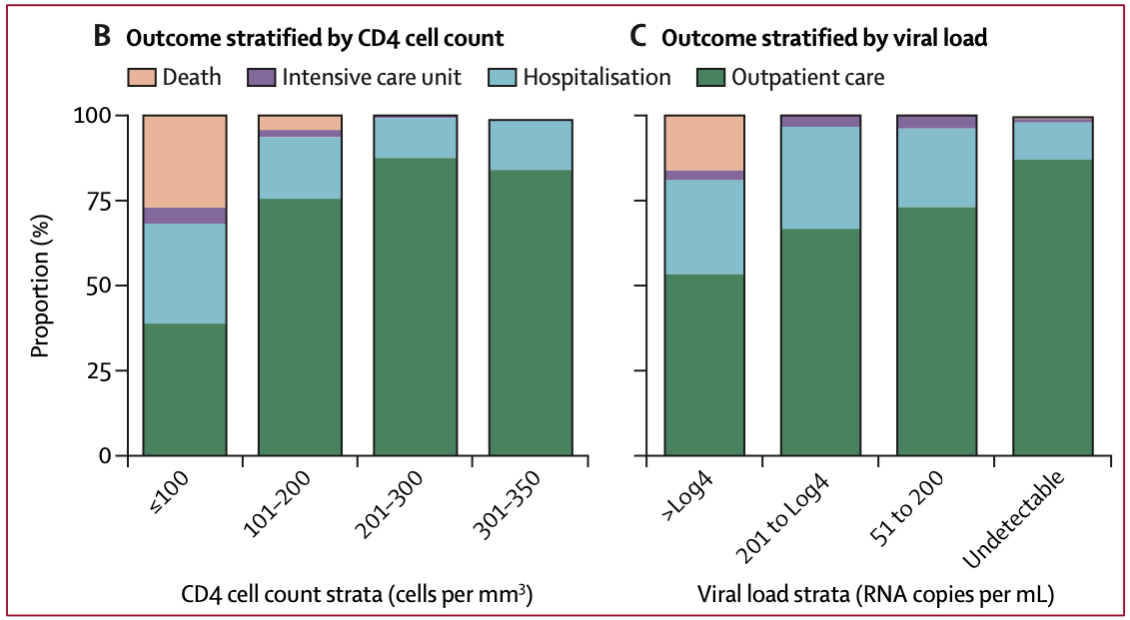
Mitja, *Lancet*, 2023

Formes graves de l'immunodéprimé



THE LANCET

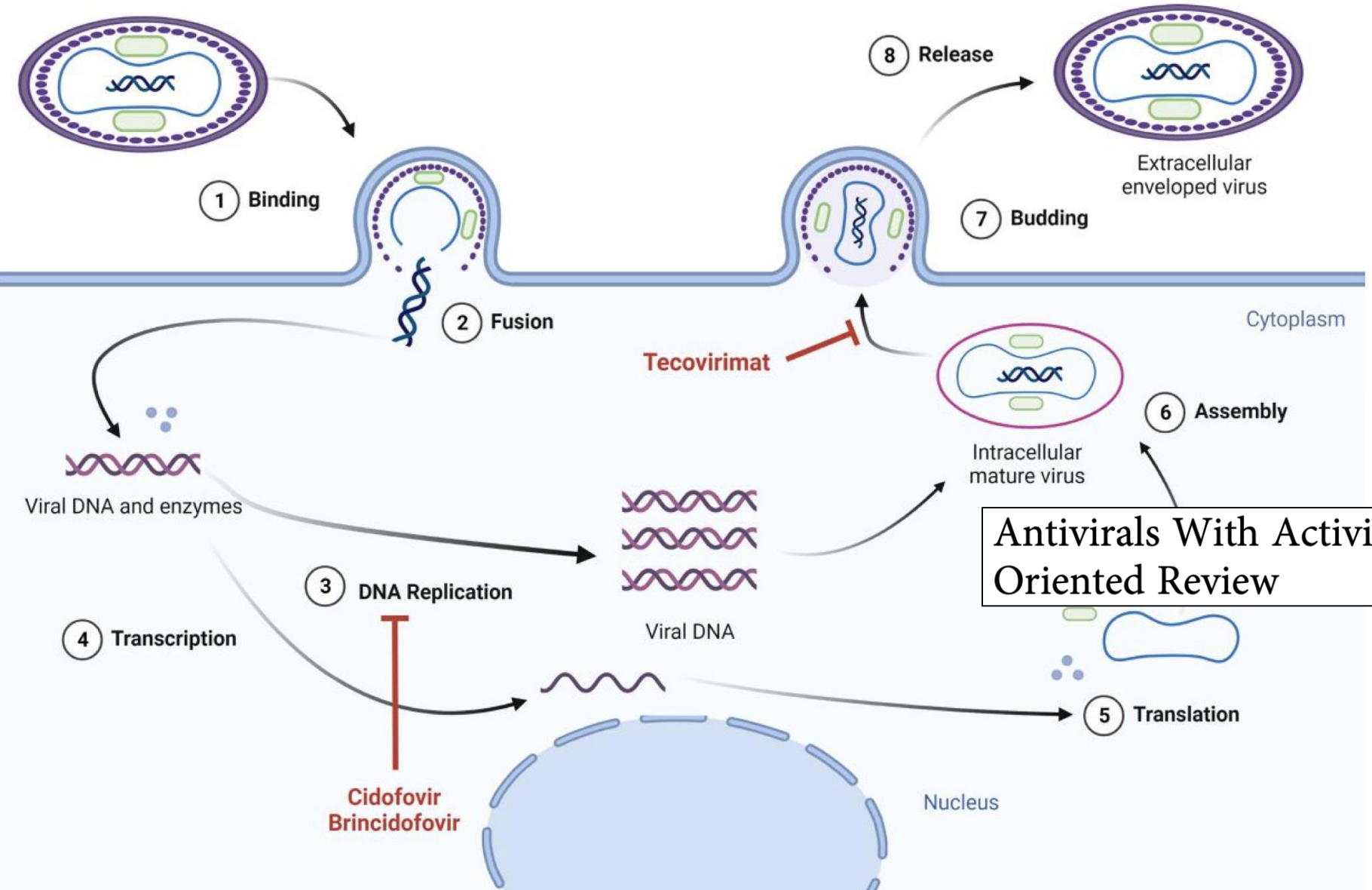
Mpox in people with advanced HIV infection: a global case series



- 382 PVVIH avec CD4 <350/mm^3
- Complications plus fréquentes chez les PVVIH avec des CD4 très bas, 107 hospitalisations (27%) et parmi ces patients, 27 décès, tous en cas de CD4 <200/mm^3

Mitja, *Lancet*, 2023

Traitements antiviraux



Clinical Infectious Diseases

REVIEW ARTICLE

Antivirals With Activity Against Mpox: A Clinically Oriented Review

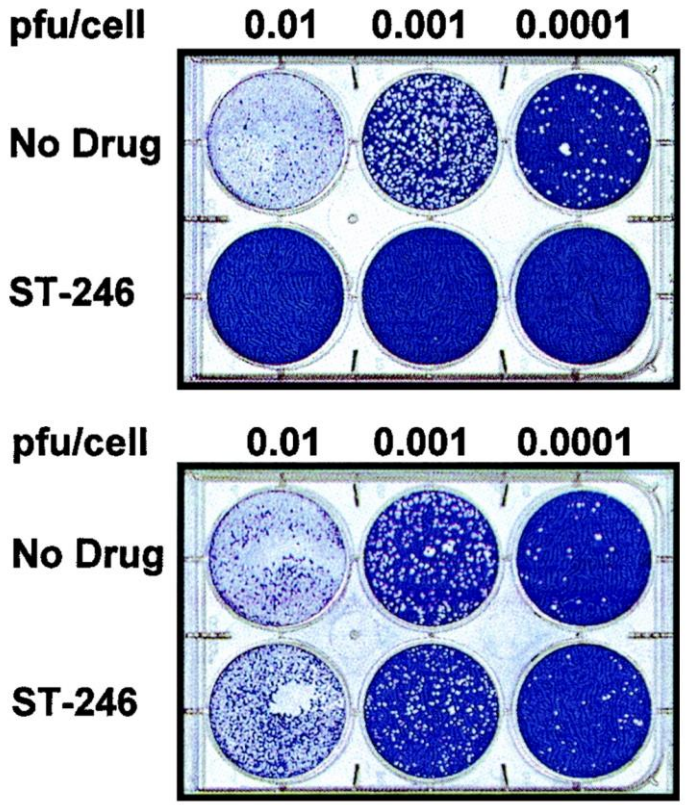
Siegrist, *CID*, 2023

Teicovirimat (1/4)

AMERICAN SOCIETY FOR MICROBIOLOGY | Journal of Virology®

An Orally Bioavailable Antipoxvirus Compound (ST-246) Inhibits Extracellular Virus Formation and Protects Mice from Lethal Orthopoxvirus Challenge

Virus (strain)	Family	Classification	EC_{50} (μM)[a]
Vaccinia virus (NYCBH)	*Orthopoxviridae*	Double-stranded DNA	0.01
Variola virus (Butler)	*Orthopoxviridae*	Double-stranded DNA	0.02
Variola virus (Bangladesh)	*Orthopoxviridae*	Double-stranded DNA	0.05
Cowpox virus (Brighton Red)	*Orthopoxviridae*	Double-stranded DNA	0.05
Ectromelia virus (Moscow)	*Orthopoxviridae*	Double-stranded DNA	0.07
Monkeypox virus (Zaire)	*Orthopoxviridae*	Double-stranded DNA	0.01
Camelpox virus	*Orthopoxviridae*	Double-stranded DNA	0.01
Herpes simplex virus type 1	*Herpesviridae*	Double-stranded DNA	>40
Cytomegalovirus	*Herpesviridae*	Double-stranded DNA	>40
Respiratory syncytial virus	*Paramyxoviridae*	Negative single-strand RNA	>40
Rotavirus	*Reoviridae*	Double-stranded RNA	>40
Bovine viral diarrhea virus	*Flaviviridae*	Positive single-strand RNA	>40
Rift Valley fever virus	*Bunyaviridae*	Negative single-strand RNA	>40
Tacaribe virus	*Arenaviridae*	Ambisense RNA	>40
Lymphocytic choriomenigitis virus	*Arenaviridae*	Ambisense RNA	>40



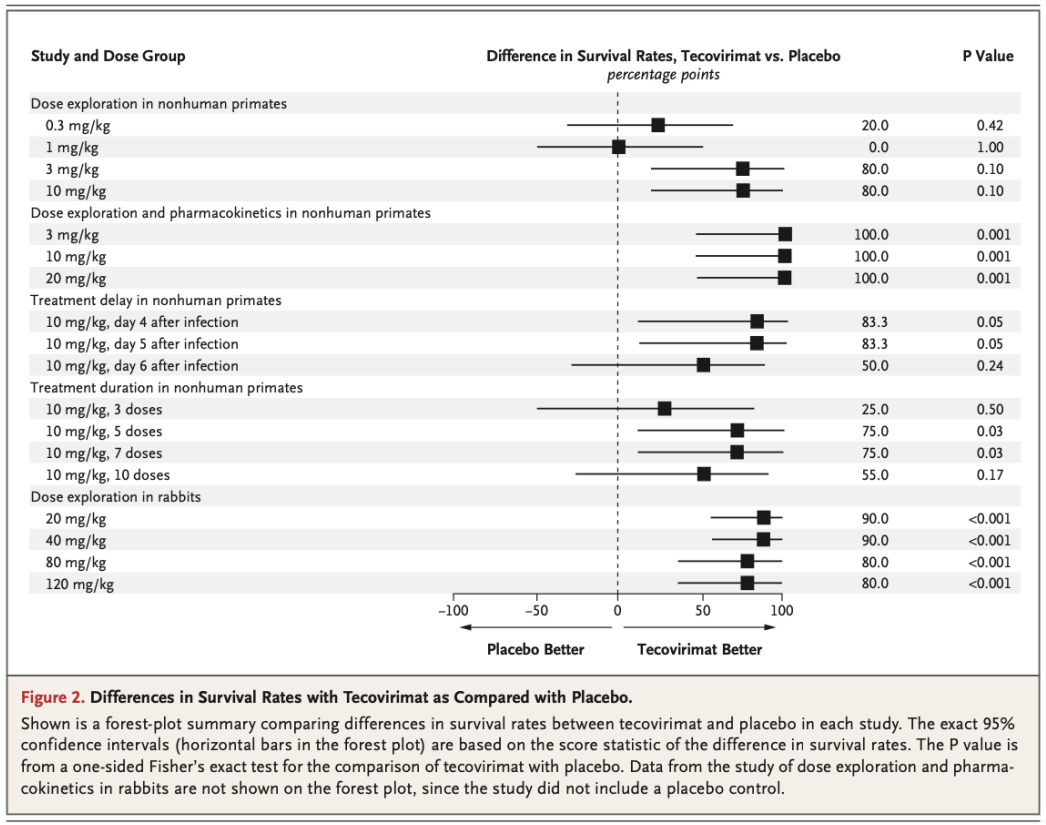
- Efficacité *in vitro* sur MPXV (inhibition de la protéine virale VP37, empêchant la formation des virions enveloppés et leur sortie de la cellule)
- Identification de variants viraux résistant au teicovirimat

Yang, *J Virol*, 2005

Teicovirimat (2/4)

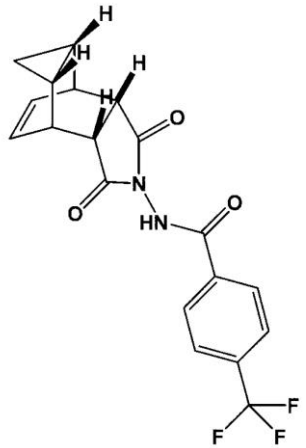
The NEW ENGLAND JOURNAL of MEDICINE

Oral Tecovirimat for the Treatment of Smallpox



Study and Dose Group	Difference in Survival Rates, Tecovirimat vs. Placebo (percentage points)	P Value
Dose exploration in nonhuman primates		
0.3 mg/kg	20.0	0.42
1 mg/kg	0.0	1.00
3 mg/kg	80.0	0.10
10 mg/kg	80.0	0.10
Dose exploration and pharmacokinetics in nonhuman primates		
3 mg/kg	100.0	0.001
10 mg/kg	100.0	0.001
20 mg/kg	100.0	0.001
Treatment delay in nonhuman primates		
10 mg/kg, day 4 after infection	83.3	0.05
10 mg/kg, day 5 after infection	83.3	0.05
10 mg/kg, day 6 after infection	50.0	0.24
Treatment duration in nonhuman primates		
10 mg/kg, 3 doses	25.0	0.50
10 mg/kg, 5 doses	75.0	0.03
10 mg/kg, 7 doses	75.0	0.03
10 mg/kg, 10 doses	55.0	0.17
Dose exploration in rabbits		
20 mg/kg	90.0	<0.001
40 mg/kg	90.0	<0.001
80 mg/kg	80.0	<0.001
120 mg/kg	80.0	<0.001

Figure 2. Differences in Survival Rates with Tecovirimat as Compared with Placebo.
Shown is a forest-plot summary comparing differences in survival rates between tecovirimat and placebo in each study. The exact 95% confidence intervals (horizontal bars in the forest plot) are based on the score statistic of the difference in survival rates. The P value is from a one-sided Fisher's exact test for the comparison of tecovirimat with placebo. Data from the study of dose exploration and pharmacokinetics in rabbits are not shown on the forest plot, since the study did not include a placebo control.



600 mg x2/jour pendant 14 jours (voie orale)

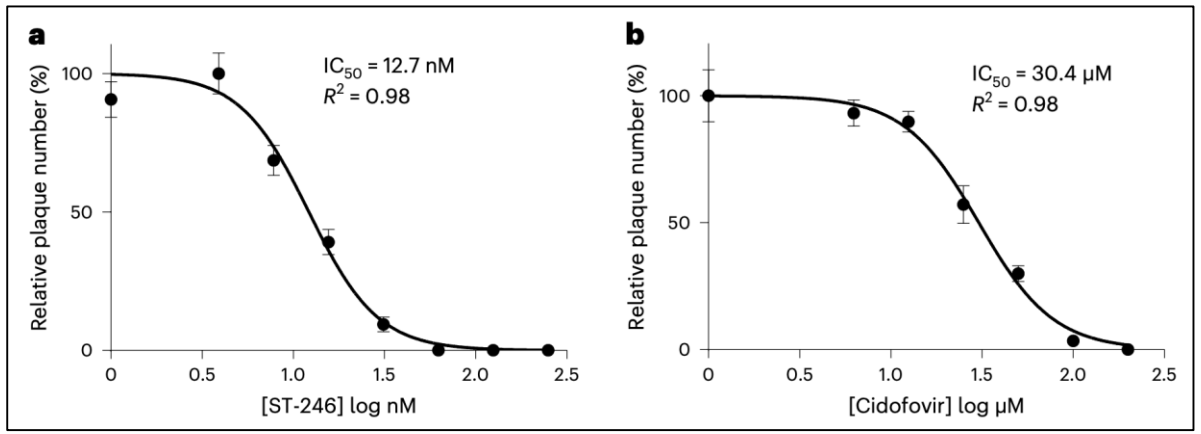
- Efficacité *in vivo* (souris, lapins, primates non humains)
- Pas de données d'efficacité chez l'homme (maladie rare)
- AMM européenne sous circonstances exceptionnelles début 2022 (variole, mpox, cowpox)
- **Indication en cas de mpox grave (complications, localisation des lésions) ou de terrain à risque (immunodéprimés, enfants, femmes enceintes, maladies dermatologiques sévères)**

Grosenbach, *NEJM*, 2018

Teicovirimat (3/4)

nature microbiology

Tecovirimat is effective against human monkeypox virus in vitro at nanomolar concentrations



Patient	Specimen (source)	VP37 mutations detected (allele frequency[b])
A	A.1 (Unknown)	**A290V (0.97)**
	A.2 (Unknown)	N267D (0.24), **A288P (0.76)**
	A.3 (Penis)	N267D (0.38), A288P (0.37), A295E (0.31), I372N (0.22)
	A.4 (Scrotum)	**A288P (0.95)**
	A.5 (Lt[g] Thigh)	**A288P (1.0)**
	A.6 (Rt[h] Sole)	**A295E (0.82)**
	A.7 (Rt Heel)	**I372N (0.84)**
	A.8 (Lt Back Knee)	N267D (0.55), A288P (0.18), D294V (0.29)
	A.9 (Unknown)	**N267D (0.91)**
	A.10 (Unknown)	T220A (0.44)[i], A265D (0.50)[i], A295E (0.51)
	A.11 (Lt 2nd Finger)	**A288P (0.62),** I372N (0.10)
	A.12 (Lt Medial Thigh)	N267D (0.37), **A288P (0.63)**
	A.13 (Rt Eyelid)	**A288P (1.0)**
	A.14 (Tongue)	**A288P (1.0)**
	A.15 (Rt Forehead)	**I372N (0.96)**
	A.16 (Lt Forehead)	**N267D (0.88),** D294V (0.11)
	A.17 (Between Eyes)	**A288P (0.88)**
	A.18 (Lt Ear)	**I372N (0.94)**
	A.19 (Lt Nose)	A288P (0.19), A290V (0.25), I372N (0.35)
	A.20 (Rt Cheek)	A288P (0.12), **I372N (0.87)**
	A.21 (Lower Lip)	**N267D (0.70),** A288P (0.22)
	A.22 (Lt Neck)	**A288P (0.85)**
	A.23 (Lt Chest)	T220I (0.49)[i], P243S (0.50), A295E (0.51)
	A.24 (Rt Hand)	**A290V (0.88)**
	A.25 (Lt Elbow)	**D294V (1.0)**
	A.26 (Lt Shoulder)	**H238Q (0.99)**
B	B.1 (Unknown)	T245I (0.12)[i], **D294V (0.91)**
	B.2 (Rt Ear)	H238Q (0.27), A288P (0.21), D294V (0.15), I372N (0.33)
C	C.1 (Unknown)	**A290V (1.0)**
	C.2 (Unknown)	**A290V (1.0)**
D	D.1 (Penis)	**N267D (0.68),** A288P (0.29)
E	E.1 (Lt Foot Between Toes)	**I372N (1.0)**
	E.2 (Rt Cheek)	**D294V (1.0)**
	E.3 (Lt Hand by Thumb)	**A290V (1.0)**
	E.4 (Lt Foot)	A290V (0.30), **I372N (0.86)**
	E.5 (Lt Ring Finger)	**H238Q (1.0)**
	E.6 (Rt Foot)	**N267D (0.97)**
	E.7 (Lt Foot, Scab)	A290V (0.56), **I372N (0.77)**
	E.8 (Lt Chin, Scab)	**D294V (1.0)**
	E.9 (Lt Great Toe)	**I372N (1.0)**
	E.10 (Lt 4th Finger)	**H238Q (1.0)**
	E.11 (Rt Medial Foot)	**N267D (1.0)**
	E.12 (Lt Great Toe, Tissue)	**I372N (1.0)**
	E.13 (Rt Medial Foot, Tissue)	N267D (0.45), I372N (0.56)

AMERICAN SOCIETY FOR MICROBIOLOGY | Antimicrobial Agents and Chemotherapy®

Identification of Tecovirimat Resistance-Associated Mutations in Human Monkeypox Virus - Los Angeles County

Frenois-Veyrat, *Nat Commun*, 2022 / **Garrigues**, *AAC*, 2023

Teicovirimat (4/4)

Tecovirimat Treatment of People With HIV During the 2022 Mpox Outbreak

A Retrospective Cohort Study

Annals of Internal Medicine®

infection

Tecovirimat for the treatment of severe Mpox in Germany

Tecovirimat Resistance in an Immunocompromised Patient With Mpox and Prolonged Viral Shedding FREE

Annals of Internal Medicine®

JOURNAL OF MEDICAL VIROLOGY

Effect of tecovirimat on healing time and viral clearance by emulation of a target trial in patients hospitalized for mpox

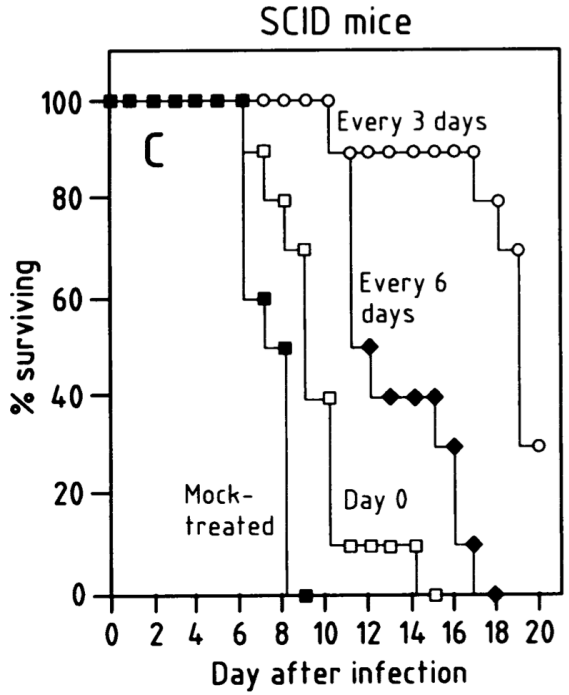
McLean, *Ann Intern Med*, 2023 / **Hermanussen**, *Infection*, 2023 / **Mertes**, *Ann Intern Med*, 2023 / **Mazzotta**, *J Med Virol*, 2023

Cidofovir

Antiviral Research

Cidofovir in the treatment of poxvirus infections

5 mg/kg en une perfusion par semaine pendant 2 semaines (puis entretien possible) + probénécide



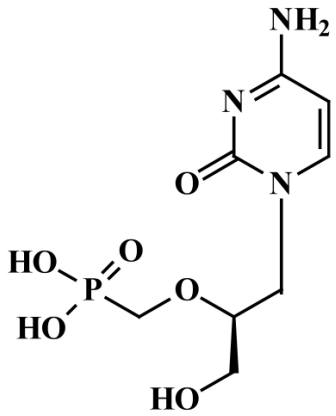


Table 4. Serious Clinical Adverse Events or Laboratory Abnormalities Occurring in > 5% of Patients

	N = 135[a] # patients (%)	
Proteinuria (≥ 100 mg/dL)	68	(50)
Neutropenia (≤ 500 cells/mm^3)	33	(24)
Decreased Intraocular Pressure[b]	17	(24)
Decreased Serum Bicarbonate (≤ 16 mEq/L)	21	(16)
Fever	19	(14)
Infection	16	(12)
Creatinine Elevation (≥ 2.0 mg/dL)	16	(12)
Pneumonia	12	(9)
Dyspnea	11	(8)
Nausea with Vomiting	10	(7)

- Forte néphrotoxicité
- AMM = rétinite à CMV (sida)

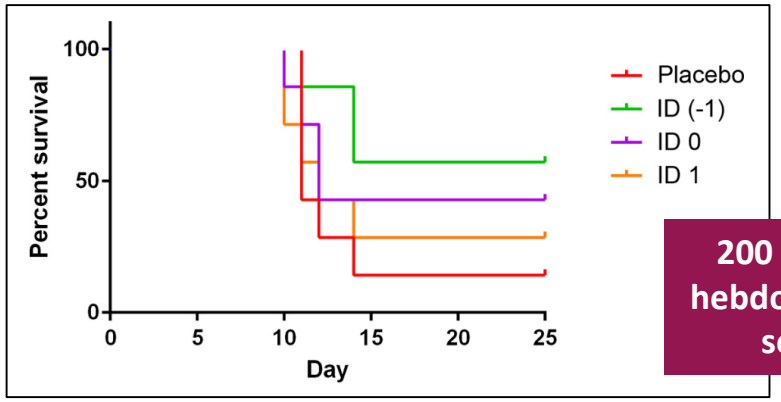
- Efficacité *in vitro* et *in vivo* (animal), pas de données d'efficacité chez l'homme dans l'indication mpox, mais efficacité démontrée dans l'indication molluscum contagiosum

Allan-Blitz, *CID*, 2023

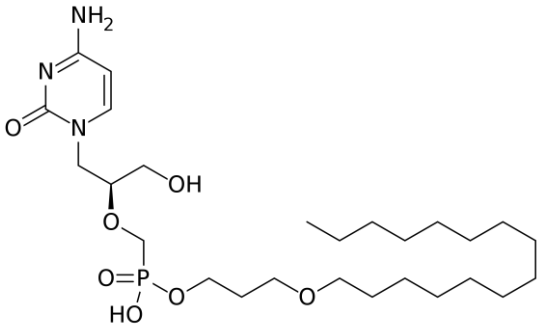
Brincidofovir

AMERICAN SOCIETY FOR MICROBIOLOGY | mSphere®

Pharmacokinetics and Efficacy of a Potential Smallpox Therapeutic, Brincidofovir, in a Lethal Monkeypox Virus Animal Model



200 mg en dose unique hebdomadaire à répéter la semaine suivante



- AMM = variole
- Efficacité *in vitro* et *in vivo* (animal), quasiment aucune donnée chez l'homme

Clinical Infectious Diseases

REVIEW ARTICLE

Antivirals With Activity Against Mpox: A Clinically Oriented Review

Table 2. Case Reports of Brincidofovir Use in Humans With Poxvirus Infections

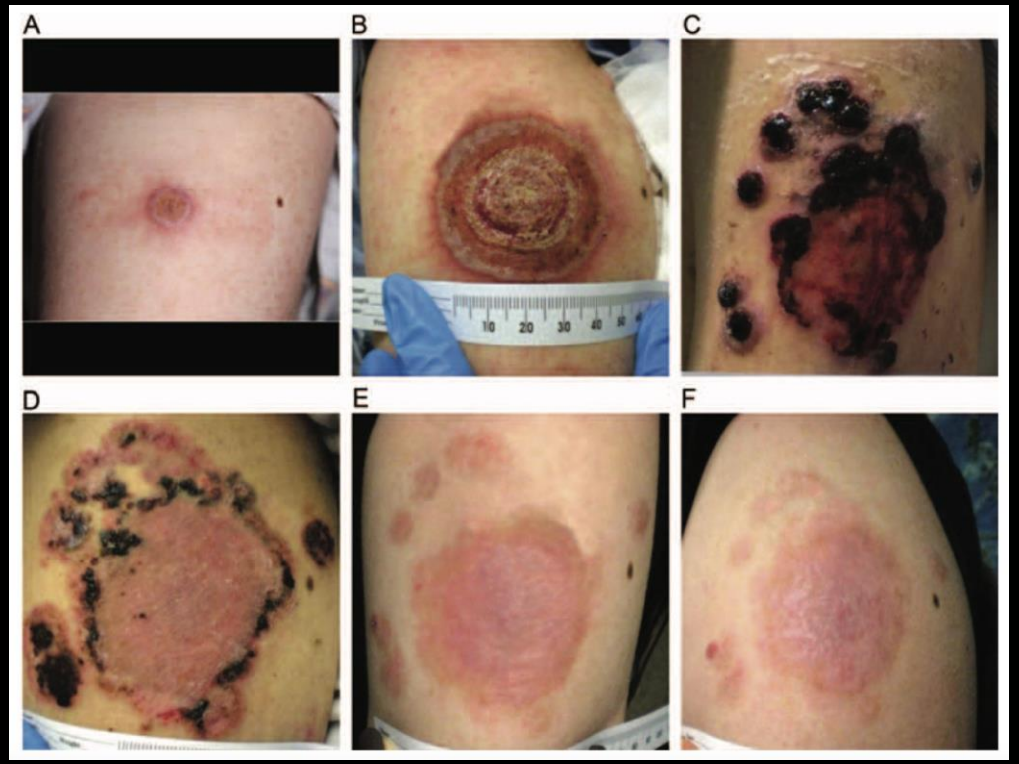
Case	Age (Years), Sex	Virus	Risk Factor	Site of Infection	Brincidofovir Dose/Frequency	Duration of Brincidofovir
1	Adult M	Vaccinia	Acute myeloid leukemia diagnosis after smallpox vaccine	Skin (progressive vaccinia)	100 mg orally once a week (initial dose 200 mg)	6 weekly doses
2	30–40, M	Mpox	Travel to endemic area	Skin	200 mg orally	One dose
3	30–40, M	Mpox	Travel to endemic area	Skin, deep soft tissue abscesses	200 mg orally once a week	Two doses
4	30–40, F	Mpox	Exposure to patient with mpox	Skin, conjunctivitis, subungual lesion	200 mg orally once a week	Two doses
5	17, M	Cowpox	Exposure to pet cat, renal transplant recipient	Skin, tonsils, disseminated	Not reported	Not reported

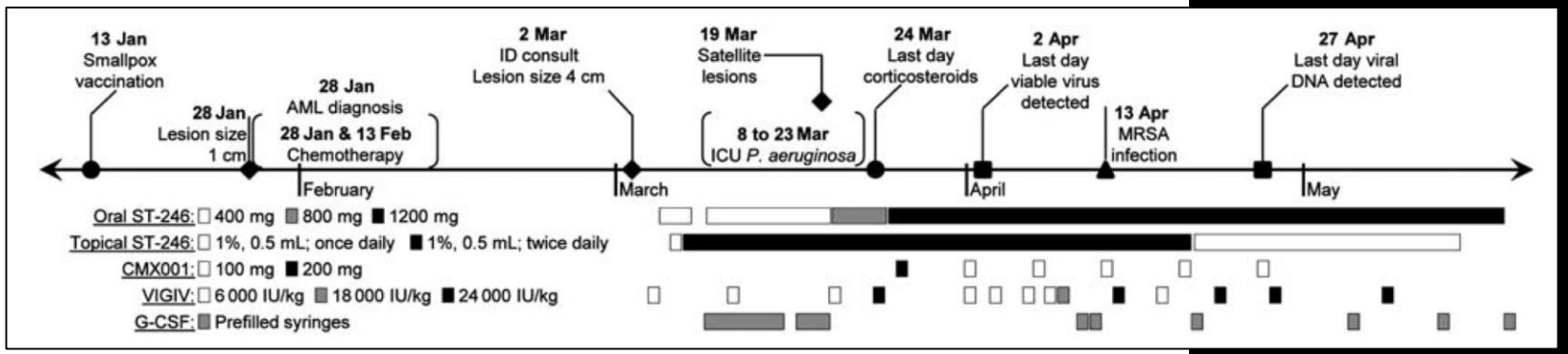
Hutson, *mSphere*, 2021 / **Siegrist**, *CID*, 2023

Immunoglobulines anti-vaccine

The Journal of Infectious Diseases

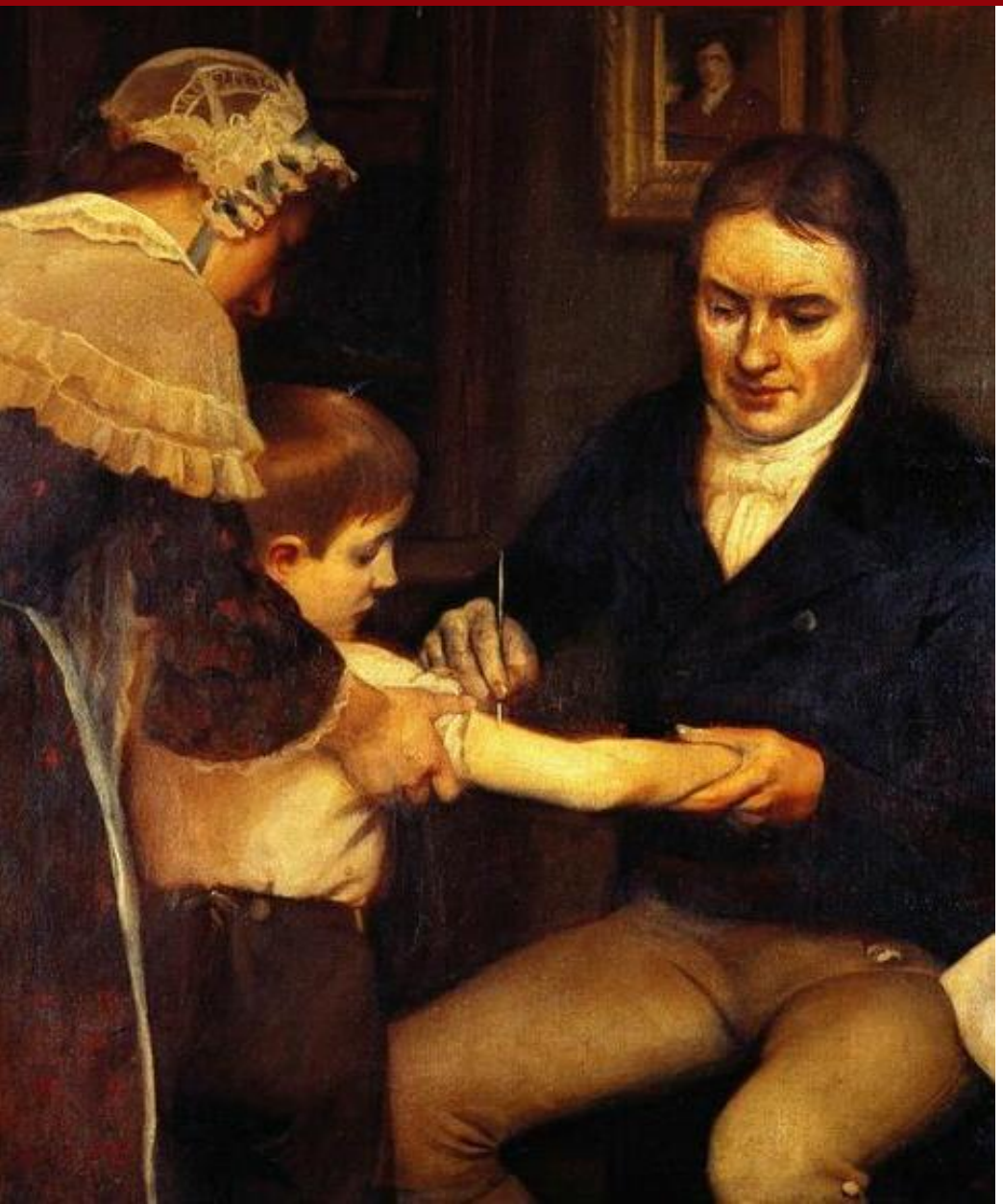
Progressive Vaccinia: Case Description and Laboratory-Guided Therapy With Vaccinia Immune Globulin, ST-246, and CMX001





Lederman, *JID*, 2012

Prévention : vaccination



- Vaccins anti-varioliques de troisième génération : MVA-BN (*Modified Vaccine Ankara – Bavarian Nordic*)
- Vaccin vivant (très) atténué, non contre-indiqué chez l'immunodéprimé
- Voie sous-cutanée ou intradermique
- Deuxième dose à au moins 28 jours d'intervalle

The adverse event rate was highest following dose 1 of intradermal vaccination (53%) and lowest following dose 2 of subcutaneous vaccination (31%) (**Table 1**). The most common adverse events were local redness, itching, and swelling following intradermal vaccination and local pain, swelling, and redness following subcutaneous vaccination. Cardiorespiratory symptoms were rare. Local adverse events were highest following intradermal vaccination and following dose 1 for both administration routes (intradermal: 52% after dose 1 vs 34% after dose 2; subcutaneous: 44% after dose 1 vs 28% after dose 2) (**Table 2**). Systemic adverse events rates were similar between administration routes, but highest following dose 1 for both administration routes (intradermal: 21% after dose 1 vs 15% after dose 2; subcutaneous: 23% after dose 1 vs 14% after dose 2).

Deng, *JAMA*, 2023

Lésions cicatricielles au long cours ?

- 70 patients avec mpox évalués initialement
- 35 patients revus en consultation à 20-23 mois de l'épisode aigu
- **Cicatrices chez 25 patients (63%)**
  - Macules hyperpigmentées (36%)
  - Cicatrices déprimées (32%)
  - Macules hypopigmentées (16%)
  - Lésions hypertrophiques (8%)
- **Cicatrices significativement plus fréquentes chez les sujets de phototype foncé (IV, V ou VI)**

Salvia-Prats, *JEADV*, 2025

Impact psychologique ?

eClinicalMedicine
Part of THE LANCET Discovery Science

Experiences of mpox illness and case management among cis and trans gay, bisexual and other men who have sex with men in England: a qualitative study

T Charles Witzel,[a,*] Andrew Ghobrial,[a] Romain Palich,[a,b] Hannah Charles,[c] Alison J. Rodger,[a] Caroline Sabin,[a,d] Alex Sparrowhawk,[e] Erica R. M. Pool,[a] Mateo Prochazka,[f] Roberto Vivancos,[c,g,h] Katy Sinka,[c] Kate Folkard,[c] Fiona M. Burns,[a] and John Saunders[a,c,d]

- **Etude qualitative, 22 HSH, un an après l'épisode aigu de mpox**
- Diffusion de stéréotypes homophobes dans les médias, majorant la stigmatisation et la honte
- Les PVVIH avaient mieux supporté la stigmatisation grâce à leur expérience passée liée au VIH
- Les plus jeunes hommes gay avaient vécu le diagnostic plus traumatisant et exprimaient un besoin accru de soutien
- Accès au dépistage de mpox parfois très compliqué lorsque les professionnels de santé ne reconnaissaient pas les symptômes
- Informations contradictoires sur l'évolution de la maladie, l'isolement et la vaccination après la guérison
- La prise en charge hospitalière et le traçage des contacts renforçaient la stigmatisation
- L'impact à long terme incluaient des troubles mentaux, ainsi que des symptômes urétraux ou rectaux persistants

Witzel, *eClin Med*, 2024

Recontaminations possibles ?

THE LANCET

Mpox in people with past infection or a complete vaccination course: a global case series

- 37 cas de réinfection à MPXV malgré un premier épisode (112 jours avant, en médiane – n=8) et/ou une vaccination double-dose (42 jours avant, en médiane – n=30)
- Tableaux cliniques moins sévères au cours du deuxième épisode de mpox

	Mpox after first infection		Mpox infection after two MVA-BN vaccines (n=30)
	First infection (n=8)	Second infection (n=8)	
Median score by category			
Active lesion burden, number†	1	1	1
Lesion burden, extent of body involvement‡	1·5	1	1
Confluent lesion or lesions with diameter >2 cm	0	0	0
Treatment for bacterial superinfection	0	0	0
Mucosal areas affected§¶	3	2	0
Level of care‖	1	1	1
Pain, analgesia requirement**	1	0	0
Overall score	7 (7–10); 3–12	5·5 (4–7); 3–10	5 (3–7); 3–11

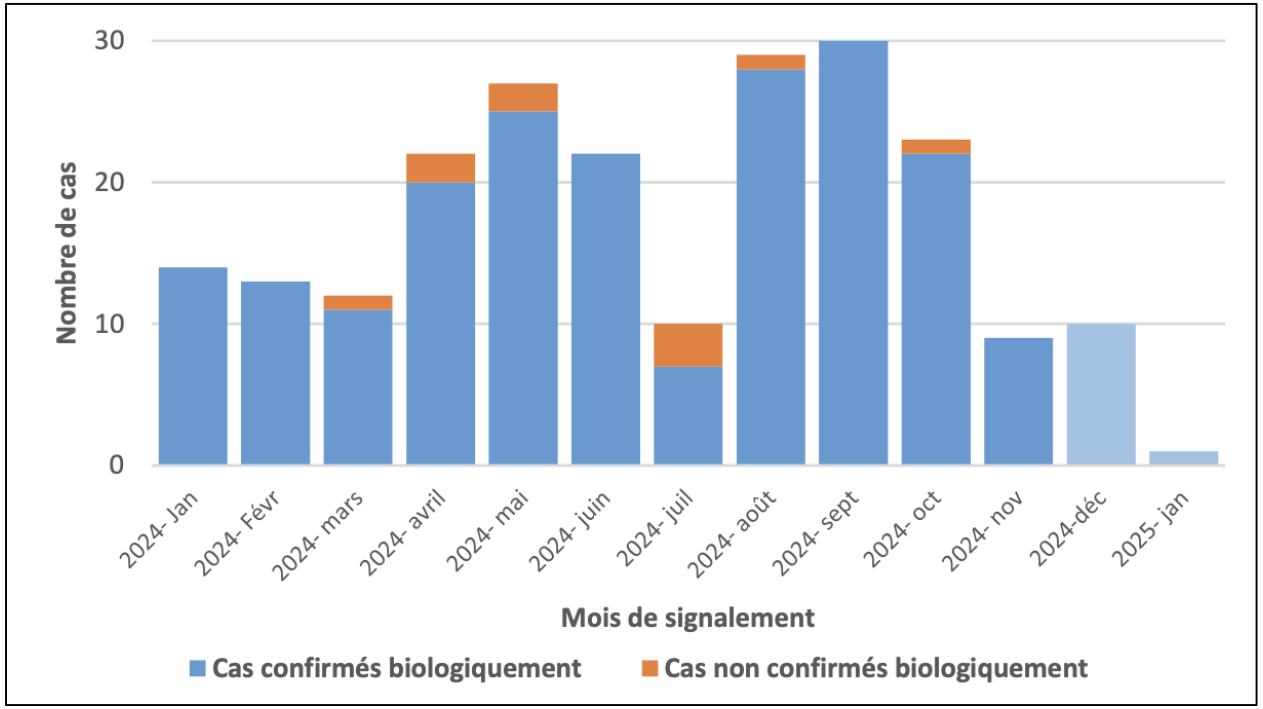
Data are median or median (IQR); range. MVA-BN=Modified Vaccinia Ankara-Bavarian Nordic. *Each category ranges in score between 1 and 4; the sum of scores ranges from 1 through 23; full scoring system available in the appendix (p 4). †Includes only pox lesions. Healed lesions (scab absent and fresh skin present) not included. Rash from erythema multiforme or any other causes not included. ‡Includes each area as discrete area (head or neck; chest or abdomen; back; groin, buttocks, or anus; left arm; left hand; right arm; right hand; left leg; left foot; right leg; and right foot). §Includes each area as discrete area (anorectal; oropharyngeal; genital [solely mucosal]; and ocular). ¶Includes proctitis, urethritis,and oropharyngitis in the absence of lesions. ‖Highest level of care required (outpatient; inpatient, non-intensive care unit related to mpox; inpatient, intensive care unit related to mpox; and death). **Highest level of analgesia required (no pain medication; outpatient over-the-counter pain medication, including topical; inpatient, oral pain medication; inpatient, intravenous pain medications).

Table 3:* Mpox severity score system calculations

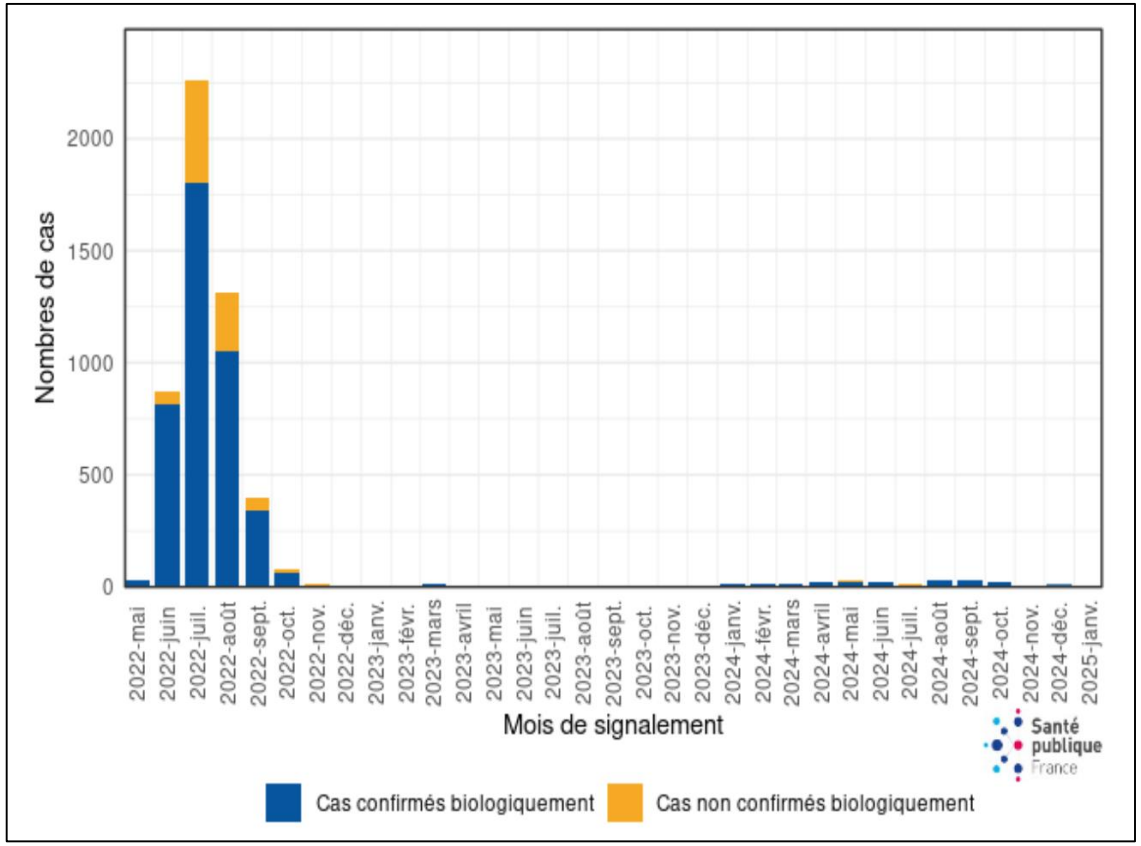
Hazra, *Lancet*, 2023

Situation actuelle en France

Nombre de cas mensuels en France depuis janvier 2024



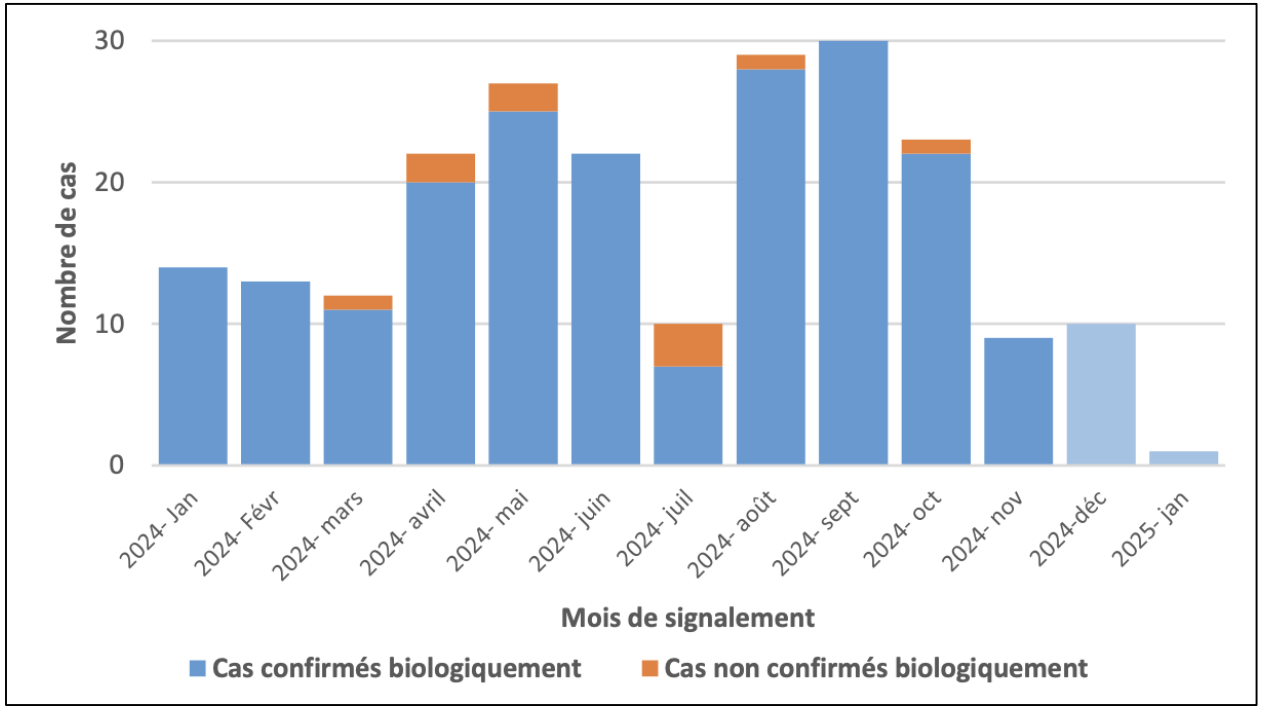
Nombre de cas mensuels en France depuis mai 2022



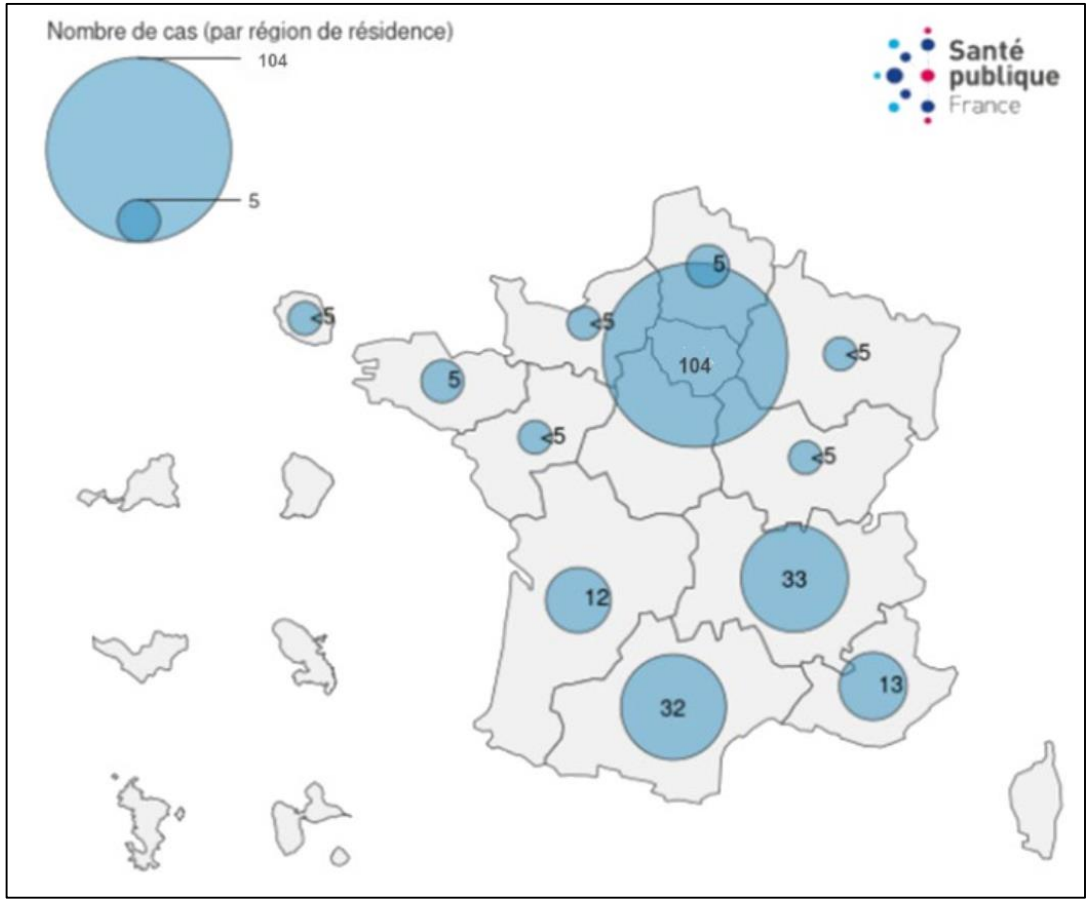
Données Santé Publique France, 2025

Situation actuelle en France

Nombre de cas mensuels en France depuis janvier 2024



Distribution des cas en France depuis janvier 2024



Données Santé Publique France, 2025

Covid-19 : une IST ?

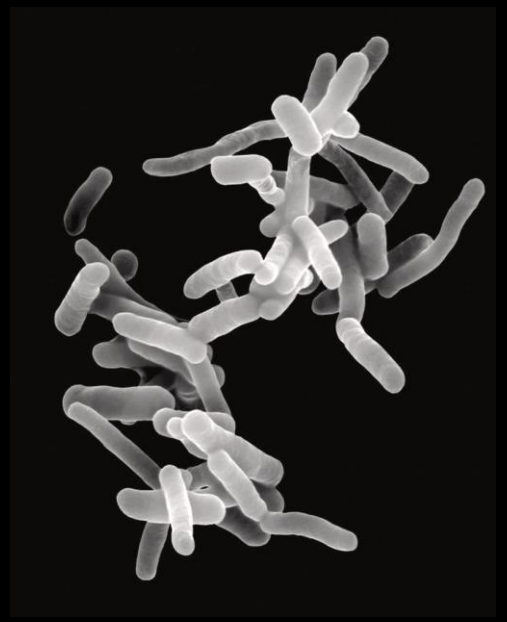
Facteurs de risque de Covid-19 chez les PVVIH au Royaume-Uni : étude Positive Voices 2022 (n=4160)

recoded_covid	Odds Ratio	Std. Err.	z	P>|z|	[95% Conf.	Interval]
age_categ						
40-49 years	.6367061	.0809421	-3.55	0.000	.4962825	.8168628
50-59 years	.5421119	.0667216	-4.97	0.000	.4259175	.6900052
60 years and more	.4713076	.0634273	-5.59	0.000	.3620362	.6135598
new_demog						
Black GBMSM	.5269917	.0854752	-3.95	0.000	.3834807	.7242092
Other men	.7617345	.1007886	-2.06	0.040	.5877291	.9872567
Black women	.6165037	.0754177	-3.95	0.000	.485073	.7835457
Other women	.7879502	.1052613	-1.78	0.074	.60644	1.023787
recoded2_education						
ISCED1/2/3/4/5	.7644319	.0575694	-3.57	0.000	.6595303	.8860186
nojob						
Yes	.5572738	.0497649	-6.55	0.000	.4677952	.6638675
recoded_householdnumber						
2 persons	1.200628	.1037372	2.12	0.034	1.01359	1.422179
At least 3 persons	1.442015	.160444	3.29	0.001	1.159476	1.793402
number4_partners						
1 sex partner	1.21609	.1079508	2.20	0.028	1.021893	1.447191
2-5 sex partners	1.436872	.1718383	3.03	0.002	1.136636	1.816414
6-10 sex partners	2.219222	.4222755	4.19	0.000	1.528387	3.222316
More than 10 sex partners	2.058672	.4511618	3.29	0.001	1.339815	3.163221
novaccine_anyreason						
Yes	1.230334	.1096235	2.33	0.020	1.033191	1.465095
_cons	2.404718	.3481195	6.06	0.000	1.810672	3.193659

BC Centre for Disease Control

Palich, *données non publiées*

Shigellose (1/3)



- Entérobactérie (bacille Gram négatif), non commensale, pathogène
- 5 espèces : *S. dysenteriae, S. flexneri, S. boydii, S. sonnei*
- Transmission par l'eau et les aliments souillées (péril oro-fécal)
- Diarrhée liquidienne ou glairo-sanglante, crampes abdominales, fièvre
- Rares complications, surtout chez l'immunodéprimé : bactériémie, syndrome hémolytique et urémique (SHU), mégacôlon toxique
- Traitement : rien ou quinolone / macrolide / cotrimoxazole / C3G

Shigellosis
Another sexually transmitted disease?

LEWIS M. DRUSIN, GAIL GENVERT, BARBARA TOPF-OLSTEIN, AND ELLEN LEVY-ZOMBEK

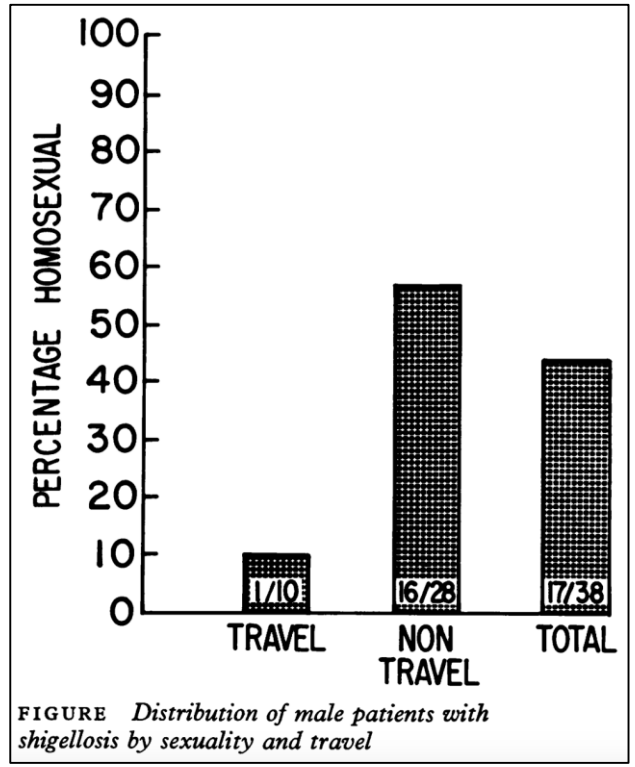
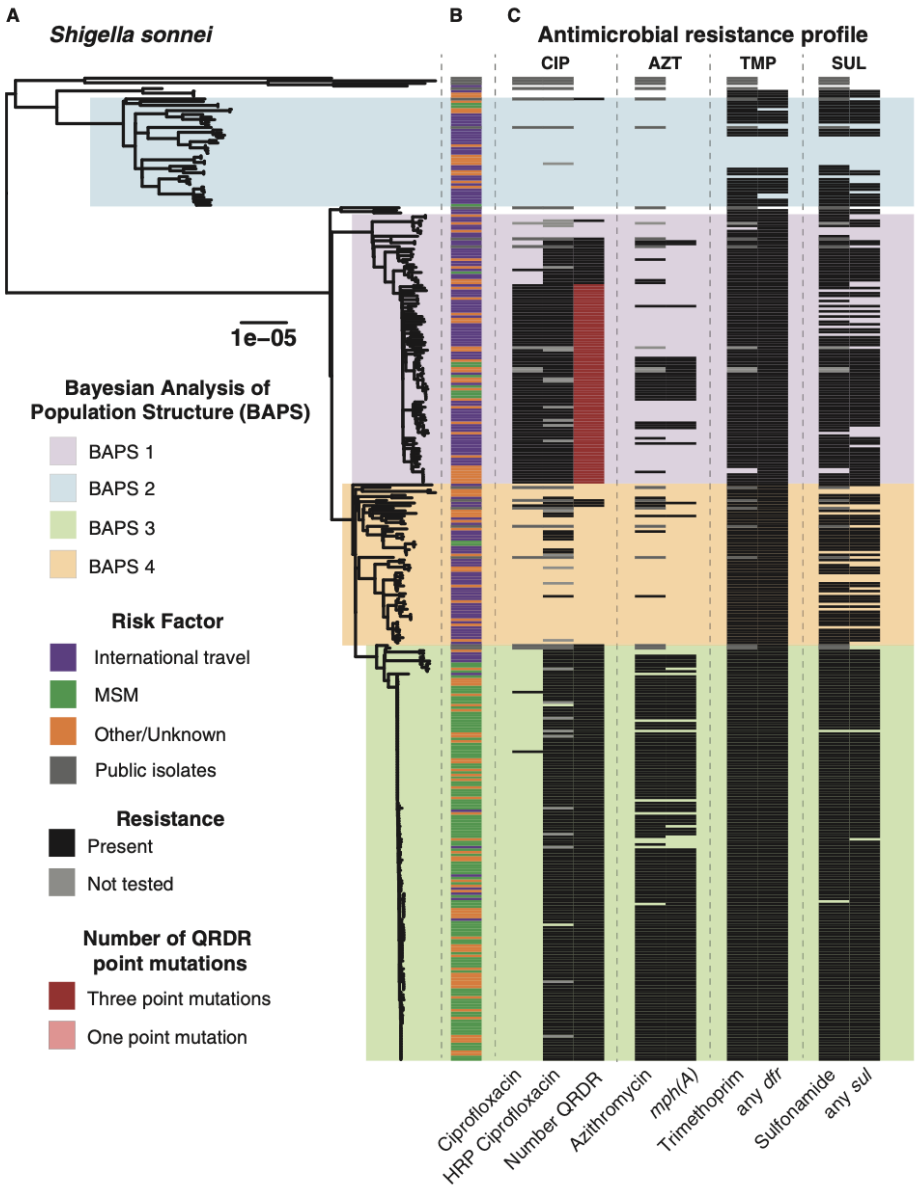


FIGURE *Distribution of male patients with shigellosis by sexuality and travel*

Drusin, *Br J Vener Dis*, 1976

Shigellose (2/3)



Clinical Infectious Diseases

Co-circulation of Multidrug-resistant *Shigella* Among Men Who Have Sex With Men in Australia

THE LANCET Infectious Diseases

Intercontinental dissemination of azithromycin-resistant shigellosis through sexual transmission: a cross-sectional study

- Identification de plus en plus fréquente de souches de shigelle multi-résistantes (quinolones / azithromycine / cotrimoxazole)
- Clusters parmi les HSH, sans notion de voyage
- Circulation internationale des souches

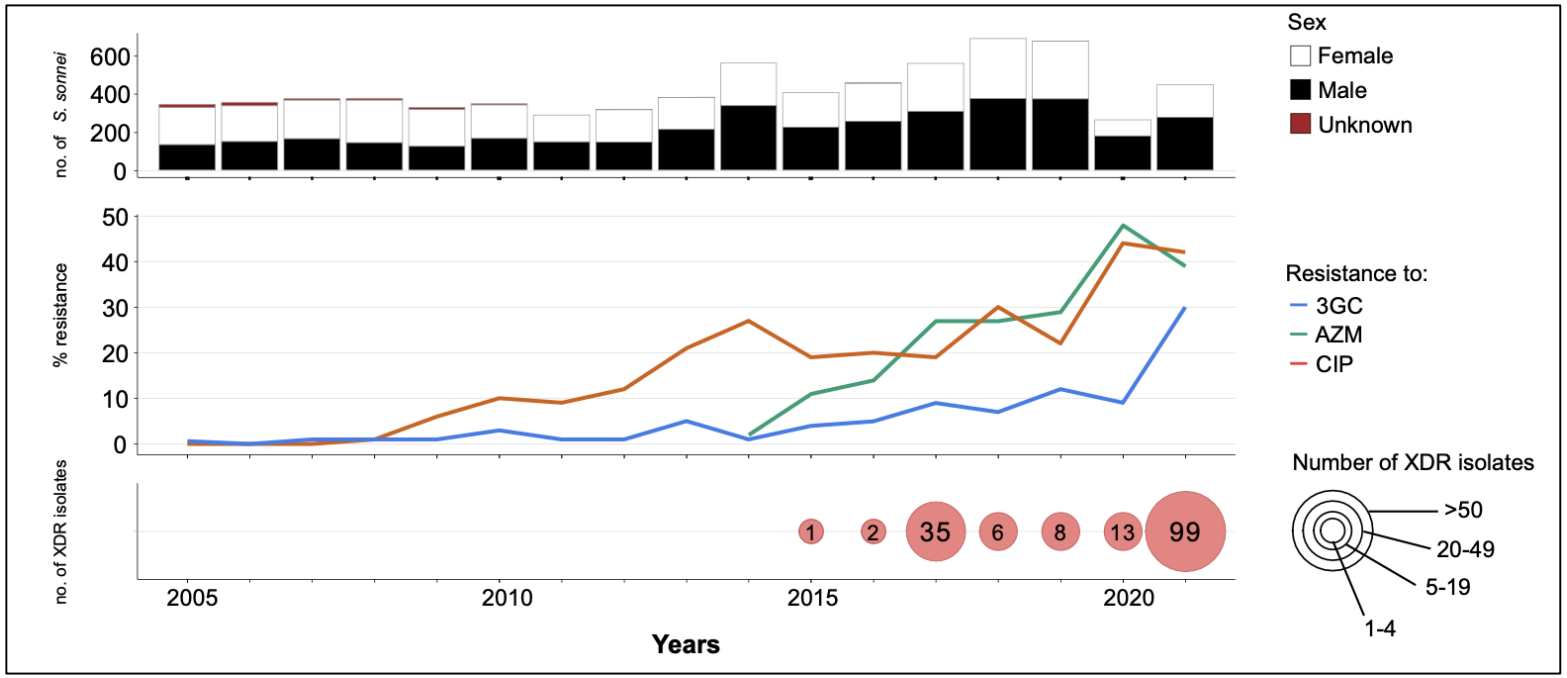
Baker, *LID*, 2015 / **Ingle**, *CID*, 2019

Shigellose (3/3)

nature COMMUNICATIONS

https://doi.org/10.1038/s41467-023-36222-8

Rapid emergence of extensively drug-resistant *Shigella sonnei* in France



- Analyse de 7121 isolats de *K. sonnei* entre 2005 et 2021
- Augmentation très préoccupante des souches « XDR » (résistant à la ciprofloxacine / à l'azithromycine / aux C3G)
- Ratio hommes/femmes et absence de notion de voyage en faveur de la transmission sexuelle

Lefèvre, *Nat Commun*, 2023

Entérobactéries productrices de BLSE

Clinical Infectious Diseases

Evidence of Sexual Transmission of Extended-Spectrum β-Lactamase–Producing Enterobacterales: A Cross-sectional and Prospective Study

- Les HSH vivant avec le VIH et négatifs sous PrEP étaient plus susceptibles d'être porteurs d'E-BLSE
- Association positive avec le nombre de partenaires sexuels
- *Escherichia coli* Sequence Type 14, BLSE : *bla*SHV-12 retrouvée uniquement chez les HSH

- 2157 individus consultant en CeGIDD / Maladies Infectieuses dépistés pour E-BLSE : 10,5% étaient positifs (et 25% étaient toujours positifs à M6)

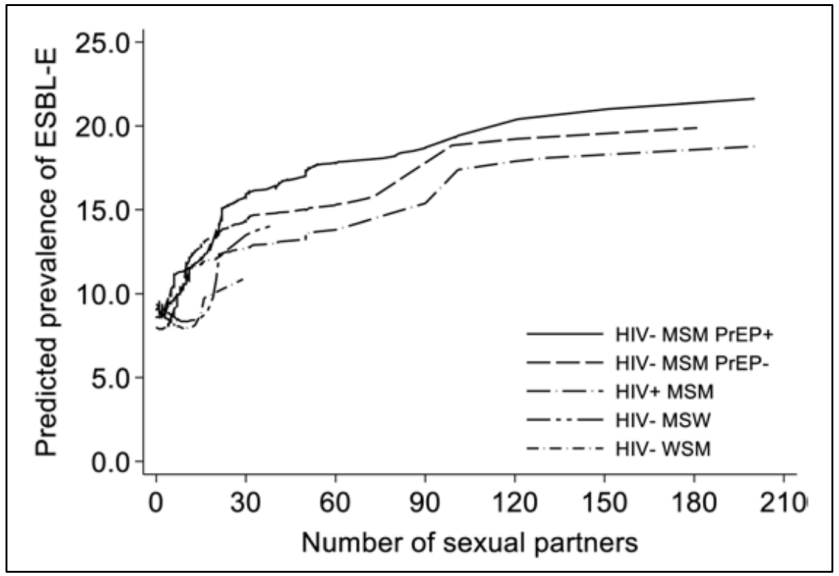


Table 3. Association Between Sexual Groups and Extended-Spectrum β-Lactamase–Producing Enterobacterales Carriage

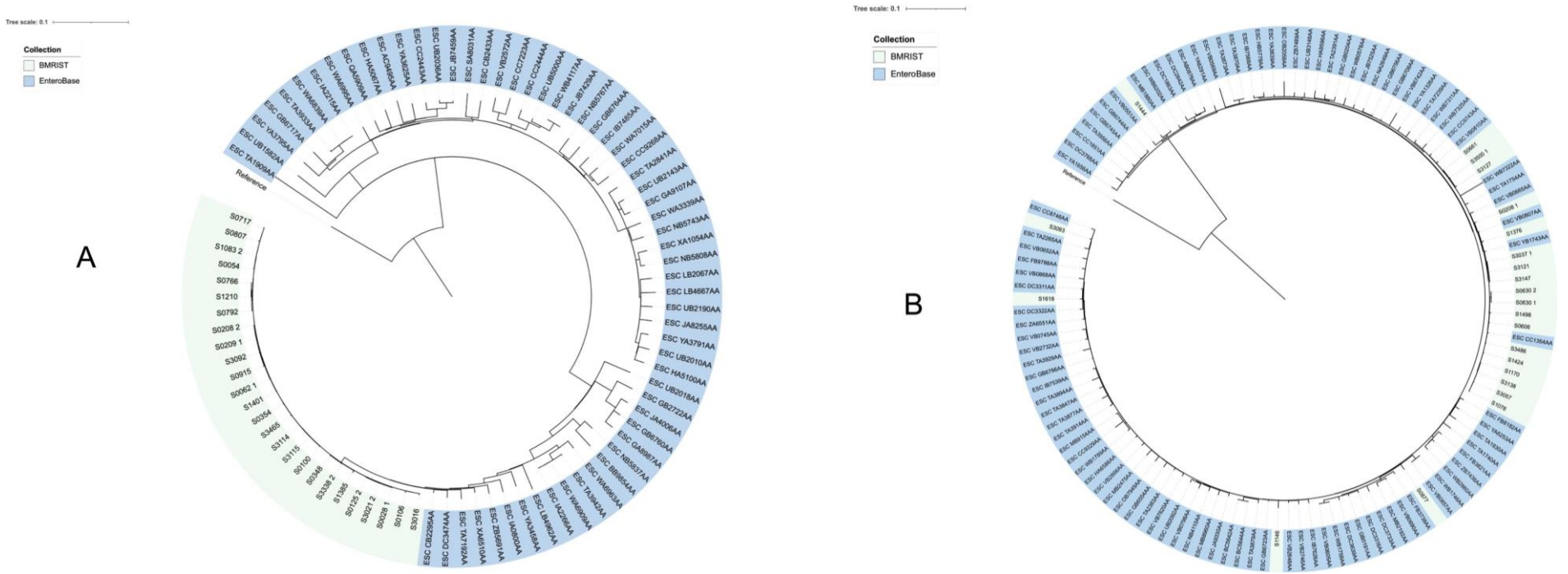
Sexual Group	Participants, No.	ESBL-E Positive, No. (%)	Univariable Analysis OR (95% CI)	*P* Value	Model 1[a] aOR (95% CI)	*P* Value	Model 2[b] aOR (95% CI)	*P* Value
HIV-negative MSM on PrEP	251	41 (16.3)	2.64 (1.63–4.30)	<.001	2.58 (1.53–4.34)	<.001	1.94 (1.09–3.44)	.02
HIV-negative MSM not on PrEP	487	47 (9.7)	1.45 (.91–2.30)	.12	1.44 (.89–2.32)	.14	1.19 (.72–1.97)	.51
HIV-positive MSM	500	61 (12.2)	1.88 (1.21–2.93)	.005	1.96 (1.17–3.28)	.01	1.75 (1.03–2.97)	.04
HIV-negative MSW	439	44 (10.0)	1.51 (.94–2.42)	.09	1.50 (.93–2.42)	.09	1.48 (.92–2.38)	.11
HIV-negative WSM	480	33 (6.9)	Reference	…	Reference	…	Reference	…

Surgers, *CID*, 2022

Entérobactéries productrices de BLSE

JOURNAL OF INFECTION

Extensive dissemination of ESBL-producing Clonal Complex 14 *Escherichia coli* is likely spread through sexual transmission among men who have sex with men at risk of sexually transmitted infections

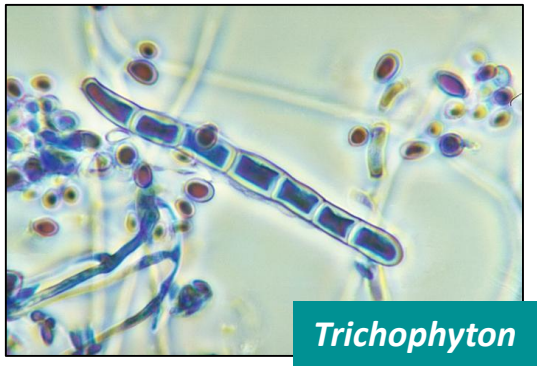


Danjean, *J Infect*, 2025

Dermatophytoses (1/5)


Epidermophyton


Microsporum


Trichophyton

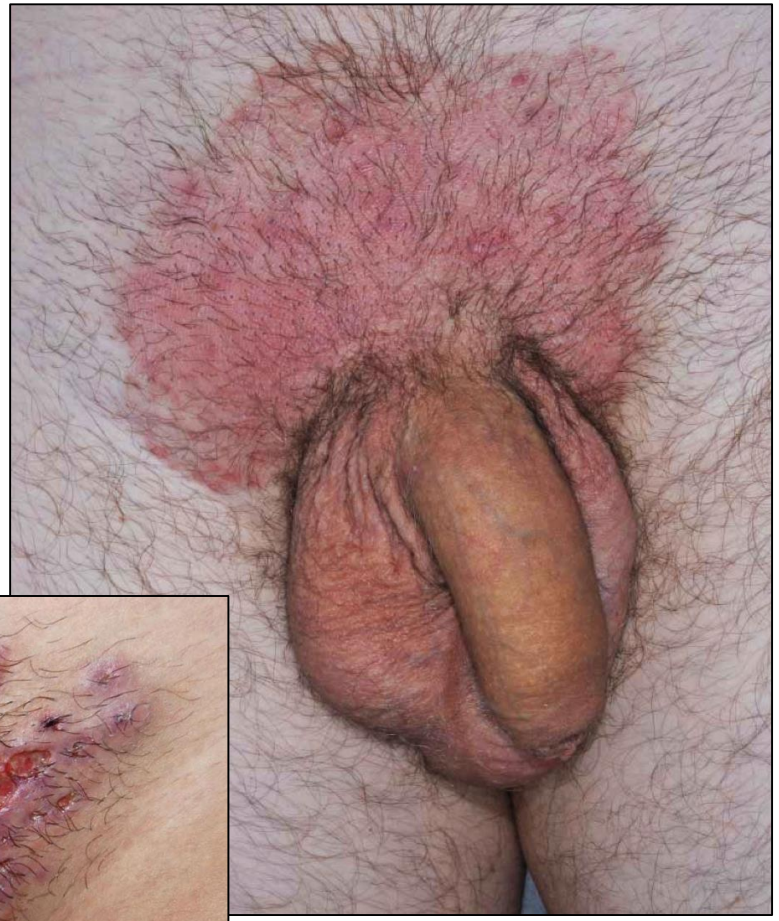
- Champignons filamenteux kératinophiles
- Transmission inter-humaine, de l'animal à l'homme et environnementale
- Formes superficielles :
  - Teigne du cuir chevelu
  - Teigne de la barbe
  - Teigne de la peau glabre (herpès circiné)
  - Teigne des plis inguinaux
  - Teigne des pied (pied d'athlète) – intertrigo, onychomychose, plantes
- Quelques rares infections invasives (liées au terrain)

Dermatophytoses (2/5)

STI

Tinea genitalis: a new entity of sexually transmitted infection? Case series and review of the literature

- En 2002, cas de teigne inguinale chez des travailleuses du sexe
- En 2009, cas de transmission d'une teigne génitale dans un couple hétérosexuelle
- Depuis 2015, cas de teigne inguinale liés à l'activité sexuelle (après rapport avec des travailleurs/euses du sexe en Asie, lésions identifiées chez d'autres partenaires) / pas de contact avec des animaux



Luchsinger, *STI*, 2015

Dermatophytoses (3/5)

EMERGING INFECTIOUS DISEASES

Sexually Transmitted *Trichophyton mentagrophytes* Genotype VII Infection among Men Who Have Sex with Men

- Lésions génitales, glutéales, de la peau glabre (corps) et de la barbe

- *T. mentagrophytes*, génotype VII
- Pas (ou peu) de transmission de l'animal à l'homme

Jabet, *EID*, 2023

Dermatophytoses (4/5)

Table 1. Main epidemiologic and clinical features of 13 cases of *Trichophyton mentagrophytes* genotype VII infections diagnosed in Paris, France, 2021–2022*

Pt no.	Age, y	HIV+	PrEP	STI history	Travel	Tinea genitalis	Tinea glutealis	Tinea corporis	Tinea faciei/barbae	Prior treatment	*T. mentagrophytes* treatment
1†	45	No	Yes	Ng, Ct, Mg	No	No	Yes	Yes	Yes	No	TRB 1 mo
2	34	No	Yes	Ng	EE	No	Yes	Yes	Yes	ECZ, TS	TRB 5 d, then ITR 200 mg 1 mo, then ITR 100 mg 1 mo
3	28	No	No	ND	ND	Yes	No	Yes	No	No	TRB 4 mo + BFZ 1 mo
4	59	Yes	NA	Ng, Ct, Mg, Tp, HCV	No	Yes	Yes	Yes	Yes	No	TRB 2 mo + ECZ
5‡	39	Yes	NA	Tp	ND	Yes	Yes	Yes	Yes	No	TRB + CPX 3 wk
6‡	41	Yes	NA	Tp	ND	No	Yes	Yes	Yes	No	TRB + CPX 3 wk
7	40	No	Yes	Ng, Ct, Tp	No	No	No	No	Yes	PRI + MPC	TRB 6 wk
8	48	Yes	NA	Ng, Ct, Tp, Ss	No	No	No	Yes	No	No	CPX 4 wk
9‡	26	Yes	NA	Ng, Ct, Tp	ND	Yes	Yes	Yes	No	No	ECZ 6 wk
10‡§	35	No	Yes	Tp	ND	No	No	Yes	No	No	ECZ 6 wk
11§	22	No	Yes	Ng, Ct, Tp	DE	No	Yes	Yes	Yes	AMX then FLC	TRB 4 wk
12	35	Yes	NA	Ng,Tp	IN	No	No	Yes	No	TS then CPX	BFZ 4 wk
13	46	Yes	NA	Ng, Ct, Tp, Ss	ES	No	No	No	Yes	FCD + TS then FCD alone then PRI then AMX/CLAV	ITR 100 mg 2 d, then IV VRC 10 d, then TRB

- 13 cas d'infection documentée dans 3 hôpitaux parisiens entre janvier 2021 et septembre 2022
- Sujets jeunes, HSH
- 7 PVVIH et 5 sujets séronégatifs sous PrEP
- Multiples antécédents d'IST et co-infections

Jabet, *EID*, 2023

Dermatophytoses (5/5)

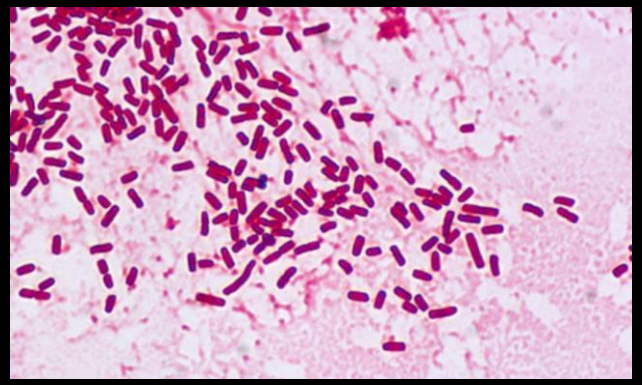
JEADV

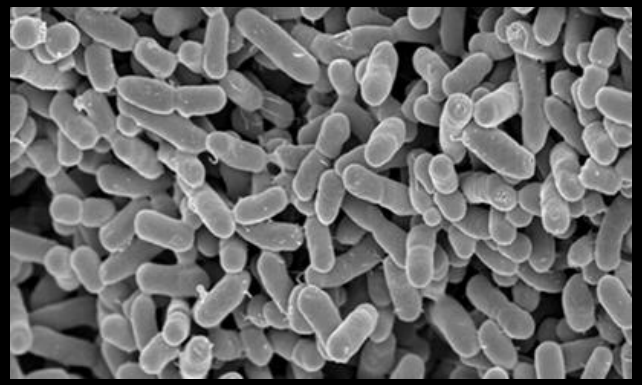
Trichophyton mentagrophytes ITS genotype VII infections among men who have sex with men in France: An ongoing phenomenon

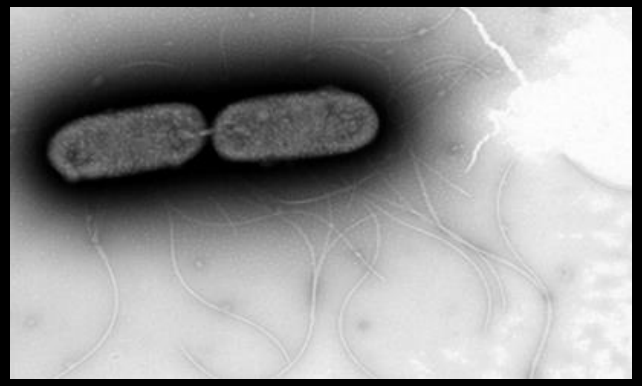
Results: We identified 32 cases of TMVII Infections. All cases occurred in men, 30 of whom reported having sex with men. Fifteen cases were sporadic cases including four among sex workers. The other 17 cases belonged to a single cluster involving a tantric masseur who infected 15 clients and his roommate. The median time from massage to lesion onset was 16 [2–52] days. Except for one patient, all other patients received systemic antifungal treatment with terbinafine. We observed five patients whose cultures remained positive even after 3–4 weeks of treatment and five patients experienced a relapse of the infection after discontinuing antifungal treatment. All French isolates exhibited identical *tef1α* and *tubb* sequences, as well as the same MAT idiomorph locus. They displayed variations in the *tef1α* sequence compared to isolates from Switzerland and the Czech Republic.

Jabet, *JEADV*, 2024

Infections à *Klebsiella aerogenes* (1/2)







- Entérobactérie (bacille Gram-négatif)
- Réservoir : eau, sols
- Commensale du tube digestif
- Infections communautaires et nosocomiales :
  - Bactériémies
  - Pneumonies
  - Méningites
- Mais également infections cutanées (folliculites)

Article

October 1984

Gram-negative Folliculitis

Follow-up Observations in 20 Patients

Marshall L. Blankenship, MD

Enterobacter aerogenes : un nouvel agent de folliculite des jacuzzis ? ☆

G. Monsel [1], J.-N. Dauendorffer [2], A. Aubry [3], B. Nebbad [4], P. Schneider [2], E. Caumes [1], O. Chosidow [5]

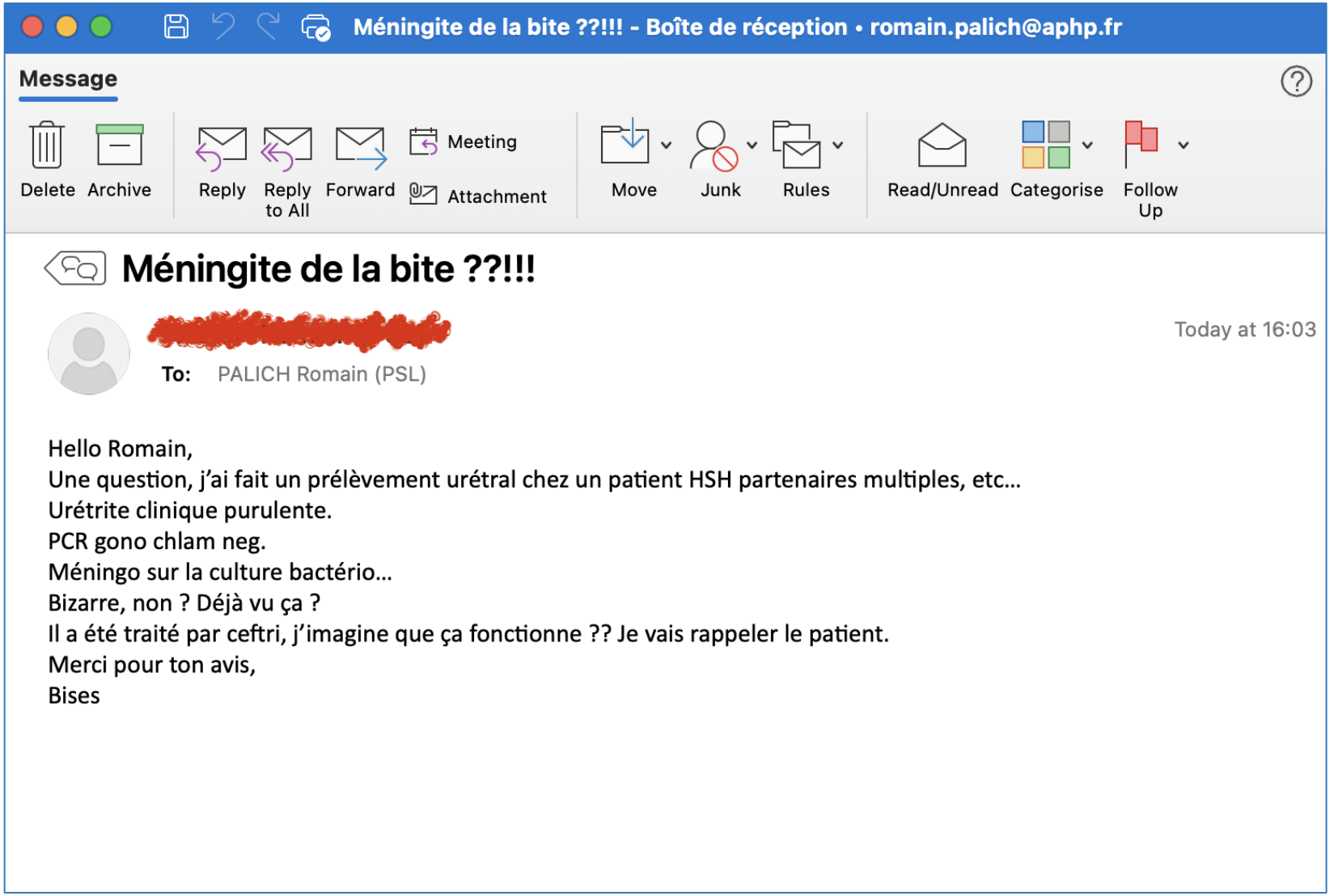
Infections à *Klebsiella aerogenes* (2/2)

Klebsiella aerogenes-related facial folliculitis: a new STI in men having sex with men?

- 7 cas d'infection documentée à Paris entre 2016 et 2022 (âge médian : 41 ans)
- Tous sont des HSH, un seul vivant avec le VIH
- 4 fréquentent les saunas
- Un sujet avec un antécédent d'acné
- 6 mois de délai pour le diagnostic
- Folliculites avec lésions parfois nodulaires, douloureuses
- Traitement par 4-6 semaines d'antibiotique (quinolones, cotrimoxazole), mais rechutes fréquentes

Bérot, *under review*

Urétrite à méningocoque (1/2)



Urétrite à méningocoque (2/2)

AMERICAN SOCIETY FOR MICROBIOLOGY | Journal of Clinical Microbiology®

Meningococcal Urethritis: Old and New

Bazan and colleagues have described recurrent infections of meningococcal urethritis in men (70). Half of the men (57%, 73/128) in the original US_NmUC cohort returned for follow-up. Of them, five had a recurrent infection with US_NmUC (7%, 5/73). All identified as heterosexual men and reported oral-genital contact (100%, 5/5). The median duration of time between the first and second episode was less than a year (median, 274 days; range, 83 to 576 days). All were previously treated with the CDC-recommended treatment regimen (intramuscular ceftriaxone [250 mg] and oral azithromycin [1 g]). Bazan and colleagues suggest considering treatment with an antibiotic regimen that eradicates meningococcal oropharyngeal carriage in sex partners of men with meningococcal urethritis caused by US_NmUC (70). Currently, the CDC's 2021 treatment guidelines for meningococcal urethritis do not recommend treating people with *N. meningitidis* of the oropharynx (69). Given the potential that meningococcal urethritis may be normal microbiota in the upper respiratory tract of a partner, it is unclear if partner-directed therapy is appropriate or necessary (see "*N. meningitidis* carriage and vaccination" above).

STD

Repeat Episodes of Symptomatic Urethritis Due to a Uropathogenic Meningococcal Clade

direct sexual contact). Such data are necessary to understand whether repeat infection isolates that shared a high degree of sequence identity could be due to a common source of infection. We are also unable to evaluate the risk of infection or reinfection with the US_NmUC after repeated exposure to an untreated sex partner. Regardless, observations from 1 patient suggest that re-exposure to an untreated sex partner can result in reinfection. We hypothesize that this patient's female sex partner had asymptomatic oropharyngeal US_NmUC carriage for at least the period between his first and second episode of urethritis. Treatment with an antibiotic regimen that effectively eradicates meningococcal oropharyngeal carriage[14] should be considered in sex partners of men diagnosed with urethritis due to the US_NmUC. Additionally, while immune correlates of protection are well-described for invasive meningococcal infection,[16] we do not have data on

Burns, *JCM*, 2022 / **Bazan**, *STD*, 2020

MÉDECINE SORBONNE UNIVERSITÉ

Mycoplasma genitalium

Sexually Transmitted Diseases

CASE REPORT

Initial Failure of Pristinamycin Treatment in a Case of Multidrug-Resistant *Mycoplasma genitalium* Urethritis Eventually Treated by Sequential Therapy

Palich, Romain MD, MSc*; Gardette, Marie MSc†; Bébéar, Cécile MD, PhD†,‡,§; Caumes, Éric MD*; Pereyre, Sabine PharmD, PhD†,‡,§; Monsel, Gentiane MD*

Author Information

Sexually Transmitted Diseases 48(11):p e163-e164, November 2021. | *DOI:* 10.1097/OLQ.0000000000001415

Abstract In Brief

We present a case of persistent *Mycoplasma genitalium* urethritis with documented macrolide and fluoroquinolone resistance, and we describe the A2062T mutation in the 23S rRNA gene, possibly associated with pristinamycin resistance. After several treatment failures and loss of the A2062T mutation, *M. genitalium* urethritis was finally cured by a sequential antibiotic treatment including minocycline.

CASE REPORT

Successful Treatment of *Mycoplasma genitalium* Urethritis With High-Dose Tinidazole

Liscynesky, Christina MD; Lipps, Ashley MD; Bazan, Jose A. DO

Author Information

Sexually Transmitted Diseases 52(2):p e2-e4, February 2025. | *DOI:* 10.1097/OLQ.0000000000002101

Abstract In Brief

A 30-year-old male patient with symptomatic *Mycoplasma genitalium* urethritis failed treatment with oral azithromycin, 2-stage doxycycline-moxifloxacin, and minocycline. Molecular testing confirmed the presence of macrolide resistance mutations. Treatment with oral tinidazole 2 g daily for 7 days resulted in clinical and microbiologic cure.

Palich, *STD*, 2021 / **Liscynesky**, *STD*, 2025

Ebola (1/5)

Ebola haemorrhagic fever in Sudan, 1976

Report of a WHO/International Study Team [1]

Emergence of Zaire Ebola Virus Disease in Guinea

Ebola Virus Disease in West Africa — The First 9 Months of the Epidemic and Forward Projections

WHO Ebola Response Team*

- Filovirus (ARN)
- Transmission par les fluides corporels infectés et par les surfaces contaminées
- Symptômes :
  - Signes généraux
  - Signes digestifs
  - Douleurs diffuses
  - +/- Conjonctivite
  - +/- Toux
- Mortalité : 40-70%

Ebola (2/5)

The NEW ENGLAND JOURNAL of MEDICINE

Ebola RNA Persistence in Semen of Ebola Virus Disease Survivors — Final Report

- 210 patients ayant survécu à Ébola, ayant fourni un échantillon de sperme avant de quitter le centre de traitement : RT-PCR EBOV positive dans 27% des cas
- Décroissance du taux de positifs au cours du temps : 100% à M3, 62% à M6, 25% à M9, 15% à M12, 11% à M15, 4% à M18… et 0% au-delà

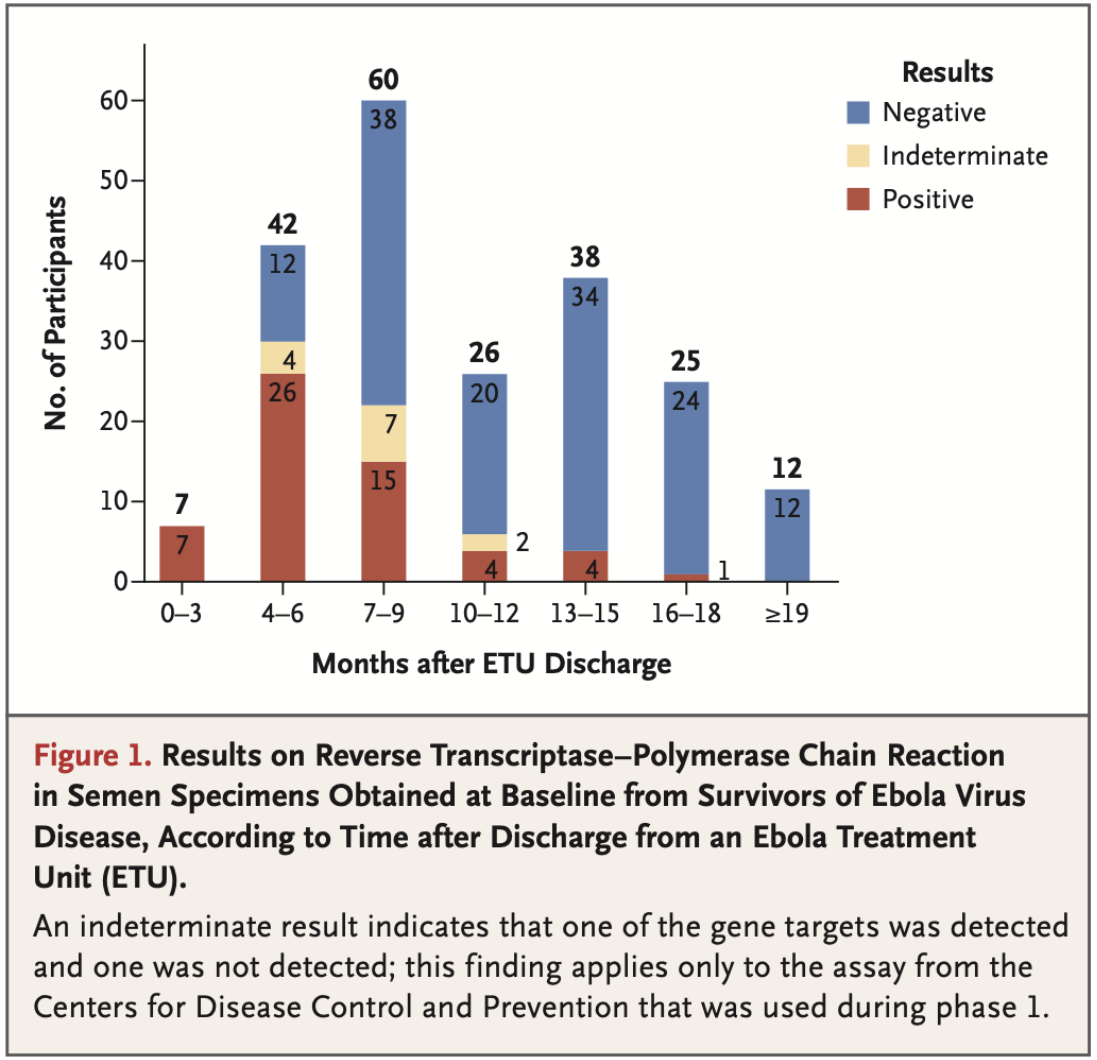


Figure 1. Results on Reverse Transcriptase–Polymerase Chain Reaction in Semen Specimens Obtained at Baseline from Survivors of Ebola Virus Disease, According to Time after Discharge from an Ebola Treatment Unit (ETU).

An indeterminate result indicates that one of the gene targets was detected and one was not detected; this finding applies only to the assay from the Centers for Disease Control and Prevention that was used during phase 1.

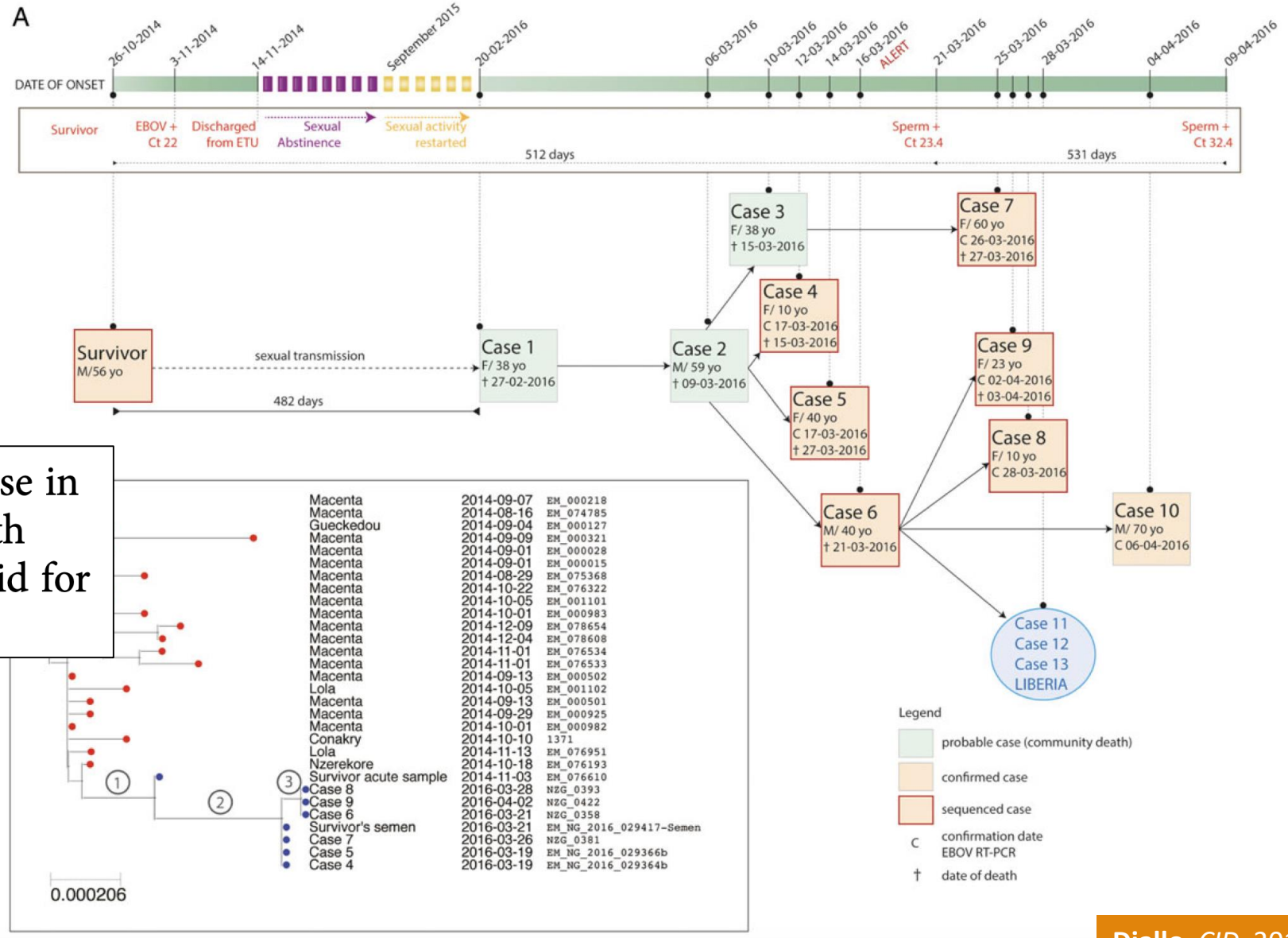
Deen, *NEJM*, 2017

Ebola (3/5)

- Transmission sexuelle du virus Ébola à partir d'un survivant, ayant toujours de l'ARN viral dans le sperme, plus de 500 jours après sa guérison

Resurgence of Ebola Virus Disease in Guinea Linked to a Survivor With Virus Persistence in Seminal Fluid for More Than 500 Days

Clinical Infectious Diseases



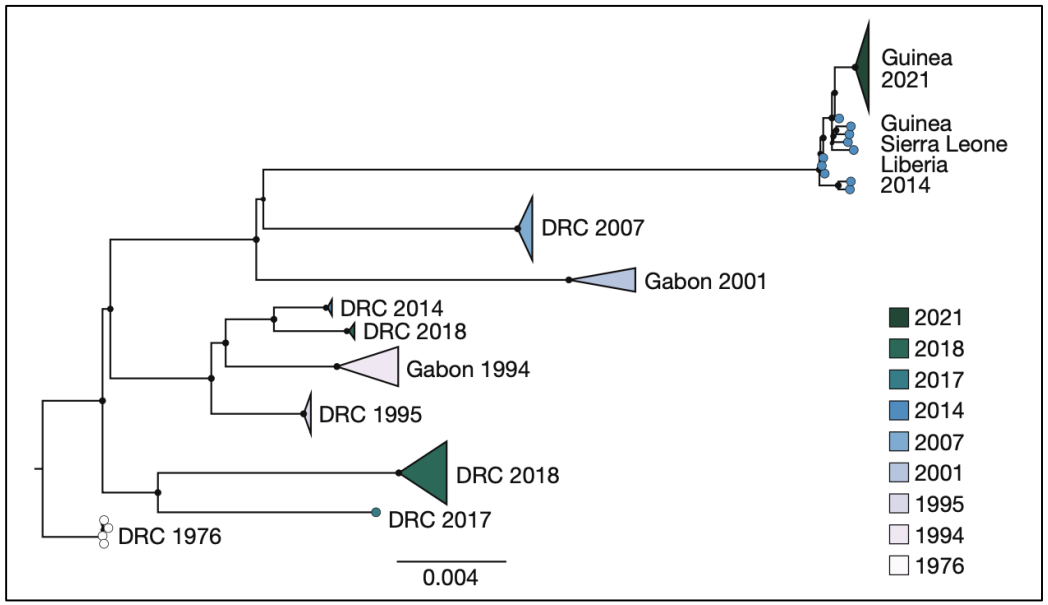
Diallo, *CID*, 2016

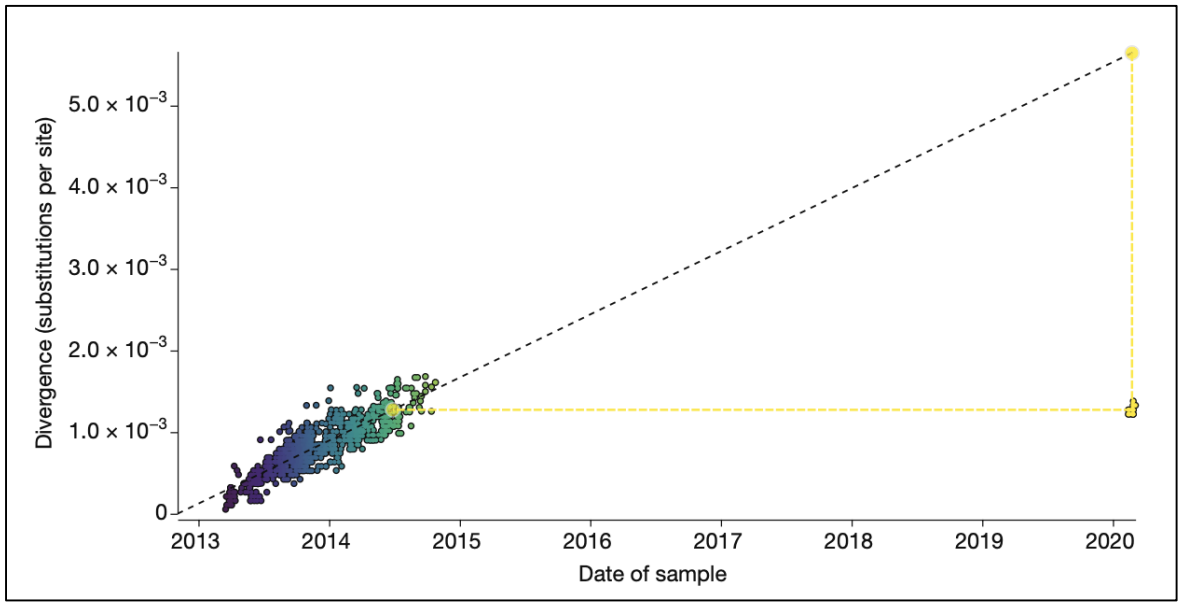
Ebola (4/5)

Article

Resurgence of Ebola virus in 2021 in Guinea suggests a new paradigm for outbreaks

nature





- Exploration de 12 cas d'infection au virus Ébola en Guinée, en 2021, 7 ans après la fin de l'épidémie précédente
- **Pas de nouvelle transmission zoonotique : hypothèse d'un réservoir humain**

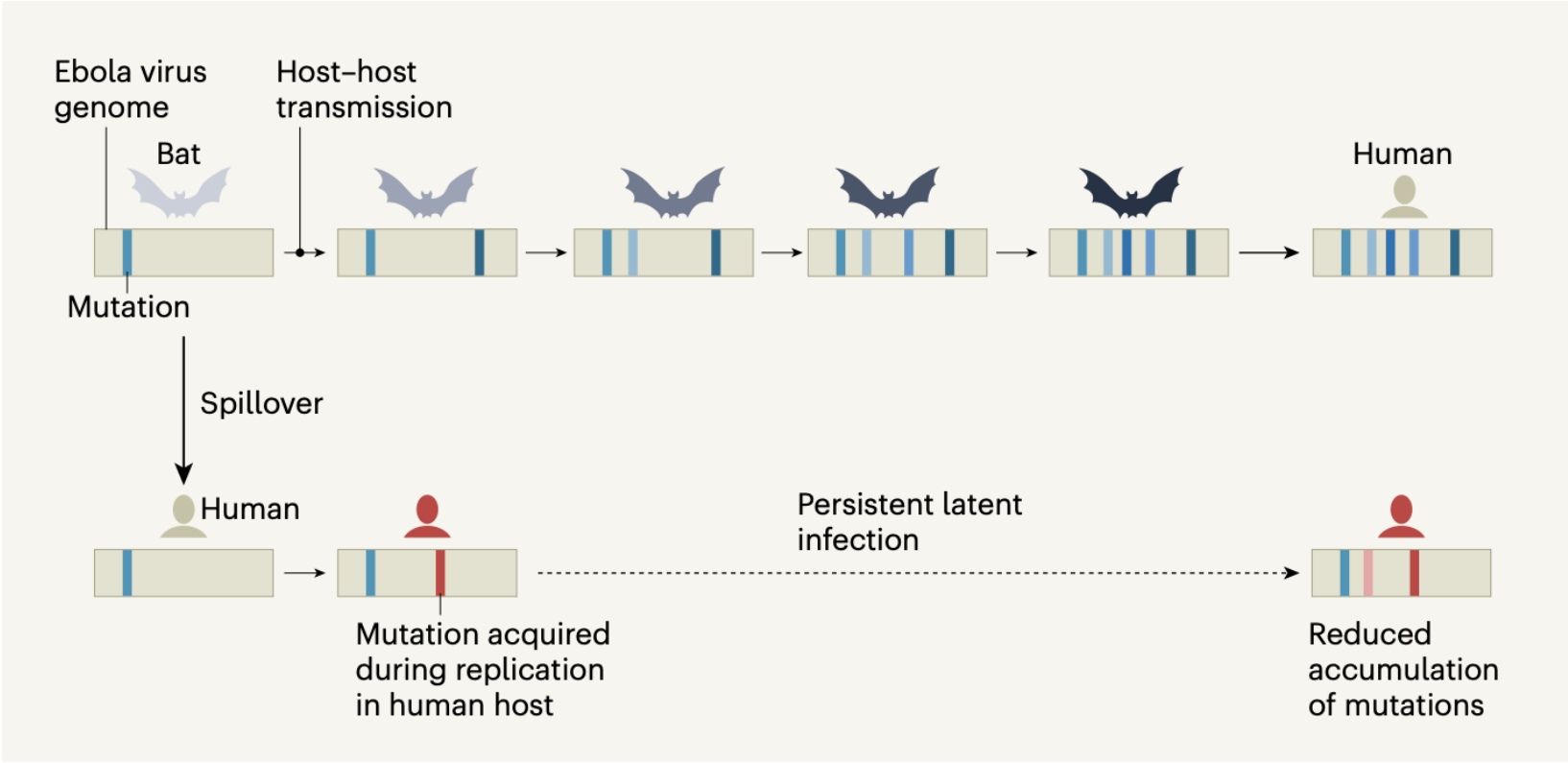
Keita, *Nature*, 2021

Ebola (5/5)

INFECTIOUS DISEASES

Ebola virus may lurk in survivors for many years

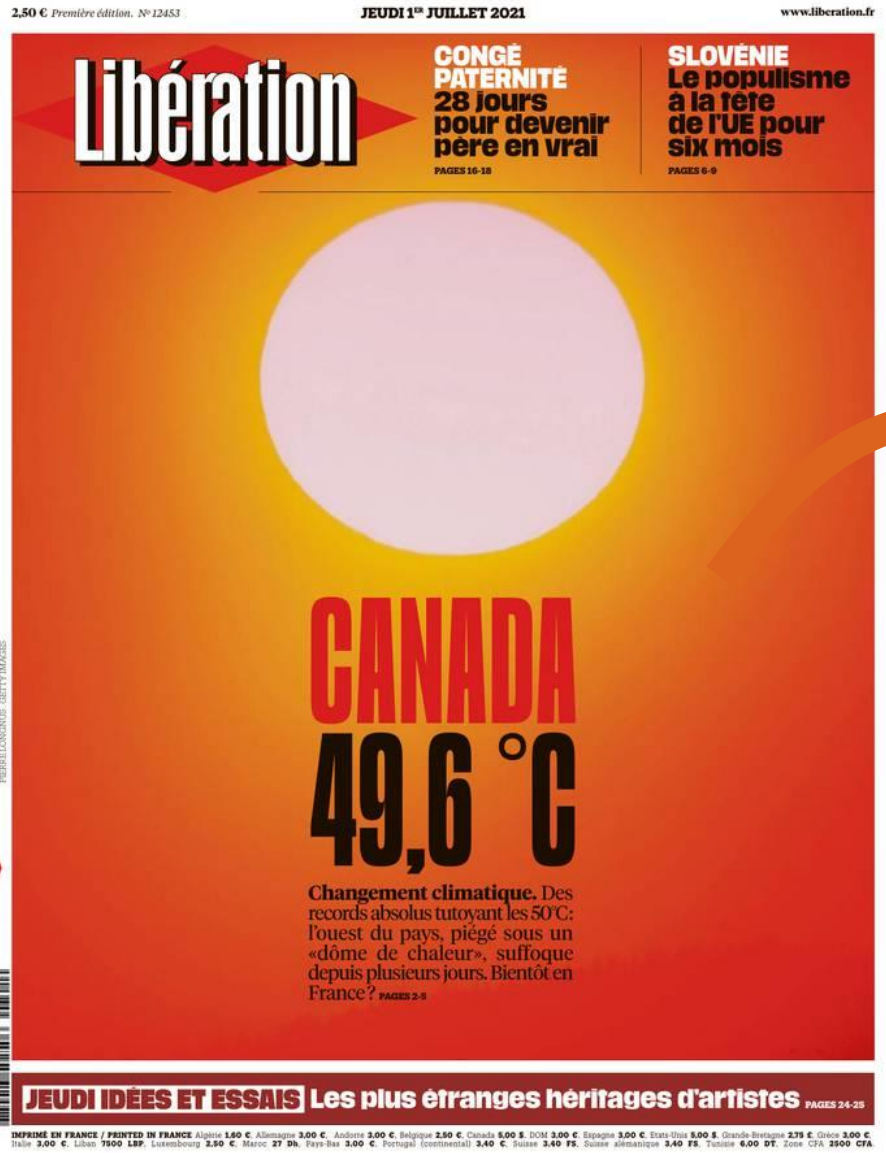
Genomic analyses of Guinea patients point to “new paradigm” for how outbreaks start



nature

Kupferschmidt, *Science*, 2023 / **Garry**, *Nature*, 2021

Zika (1/2)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PAGES 6-9
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49,6 °C
Changement climatique. Des records absolus tutoyant les 50°C: l'ouest du pays, piégé sous un «dôme de chaleur», suffoque depuis plusieurs jours. Bientôt en France? PAGES 2-5
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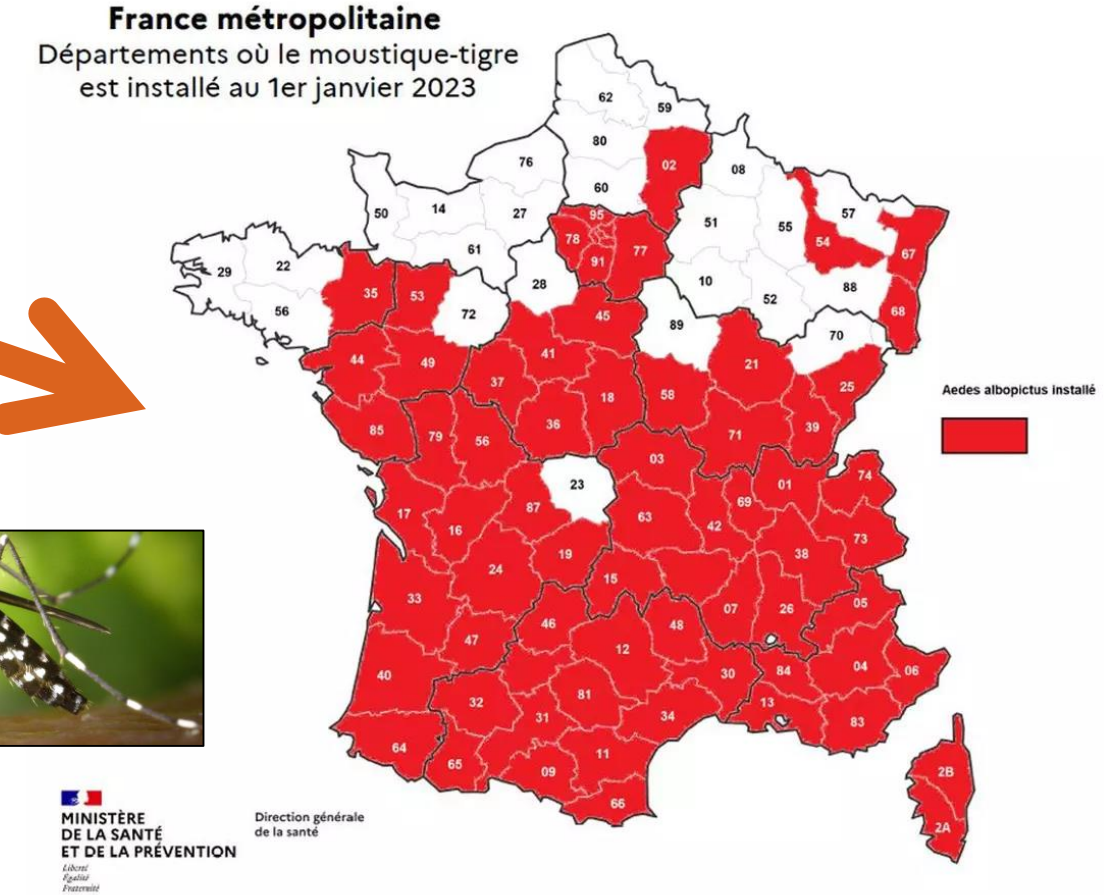
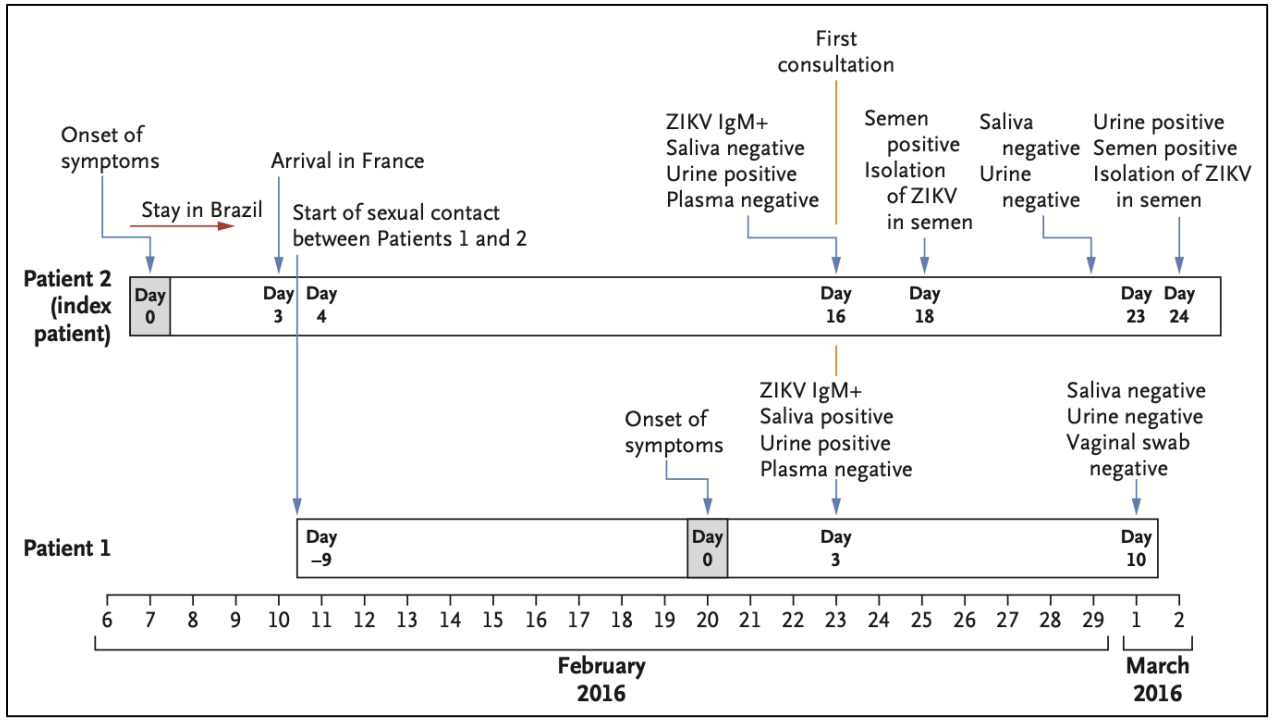

France métropolitaine
Départements où le moustique-tigre est installé au 1er janvier 2023
Aedes albopictus installé
MINISTÈRE DE LA SANTÉ ET DE LA PRÉVENTION
Liberté Égalité Fraternité
Direction générale de la santé

Zika (2/2)

The NEW ENGLAND JOURNAL of MEDICINE

Evidence of Sexual Transmission of Zika Virus



D'Ortenzio, *NEJM*, 2016


merci pour votre attention