Management of Coinfection in HIV Patients

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August, 25 2023

Figure source: Verhofstede C et al. Viruses, 2019

Discussants

พญ.อัญชลี อวิหิงสานนท์

รศ.นพ.ภิรุญ มุตสิกพันธุ์

รศ.นพ.วรพจน์ ตันติศิริวัฒน์

Case 1: 49-year-old woman

- U/D: DM type 2, HTN, DLP, loss to F/U for 3 years
- CC: ซึมลง 1 วัน ก่อนมาโรงพยาบาล
- PI: 8 วัน PTA ปวดศีรษะรอบขมับและร้าวไปทั่ว ๆ ศีรษะ มีไข้ต่ำ ๆ ไม่มีไอ จาม เบ่งปวดมากขึ้น ไม่มีตาพร่ามัว ไม่มีแขนขาอ่อนแรง มีตื่นมาปวดกลางคืน รับประทานยา paracetamol อาการทุเลาลง ไม่ได้ไปรักษาที่สถานพยาบาลไหน ก่อนหน้านี้ผู้ป่วยสบายดี น้ำหนักลด 3 กก. ใน 3 เดือน ไม่มีปัสสาวะกลางคืน
- 1 วัน PTA ซึมลง ถามตอบช้าลง นอนทั้งวัน ญาติจึงพามา รพ. (10/2022)

Case 1: 49-year-old woman

- Past Hx: DM type 2, HTN, DLP, Dx in 2017, poor compliance, loss to F/U for 3 years

- Family and personal Hx:
  - No smoking or drinking
  - No drug or food allergy
  - สามีเสียชีวิตเมื่อ 7 ปีก่อน ด้วยปอดติดเชื้อ
  - Other family members are healthy

Physical examination

- **V/S** :**BT 37.8 C**, HR 118/min, RR 24/min, BP 142/79 mmHg
- **GA** : A female, looked cachexia, **generalized hyperpigmented papules/macules**
- **HEENT** : mild pale conjunctivae, anicteric sclera, normal eye ground, **oral thrush positive**
- **LN** : no LN enlargement
- **Heart :** no active precordium, no heaving, no thrill, regular rhythm, normal S1, S2, no murmur
- **Lung:** symmetrical chest movement, equal BS, no adventitious sound
- **Abdomen**: no distension, normoactive BS, soft, no tenderness, no hepatosplenomegaly

Neurological examination

- **Slowly responds to command**
- E4V5M6
- No facial palsy, no dysarthria
- Motor power at least grade V all
- Sensory intact all
- DTR 2 + all
- BBK negative both
- Clonus negative
- No papilledema
- **Stiff neck positive**

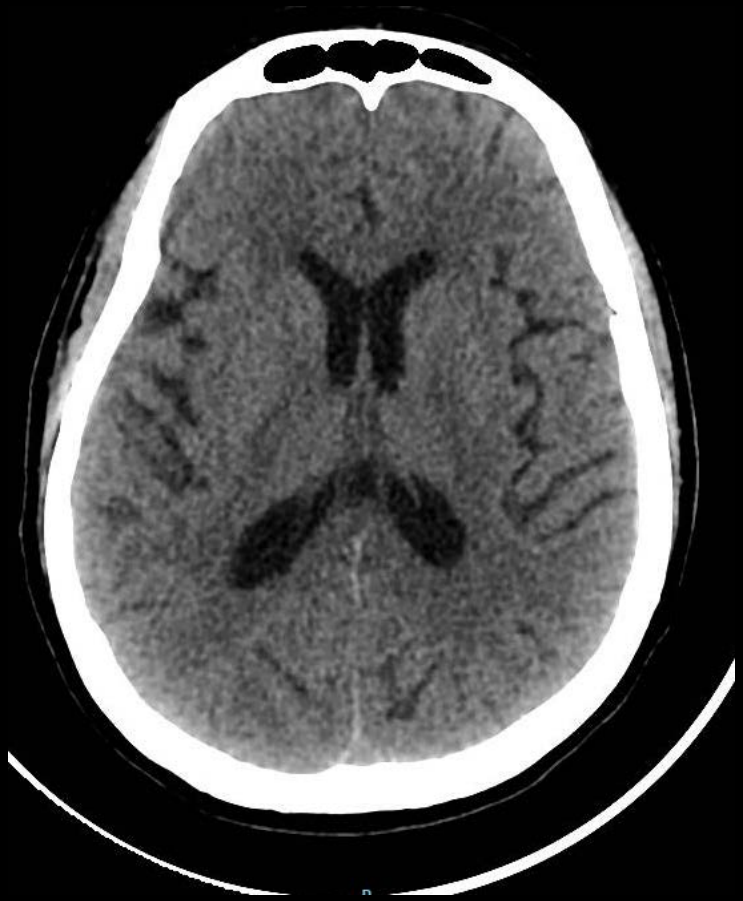
Lab Investigations

- CBC: WBC 5620 cells/µL, PMN 92%, Mono 5%, Eo 1%
  Hct 31.4%, Hb 10.2 mg%, MCV 96.3 fL, RDW 14.5%
  Platelet 348,000 cells/µL

- Chem: Cr 1.33 mg/dL, BUN 17 mg/dL, Na 135 mmol/L,
  K 3.1 mmol/L, HCO_3 26 mmol/L

- LFT: TB 0.33, DB 1.77, SGOT 20 U/L, SGPT 15 U/L, ALP 200 U/L

- UA: normal



- Anti HIV positive
- CSF profile
- Open pressure 33 cm. of CSF
- WBC 280 cells/mm^3
- PMN 6%, lymphocytes 94%
- Protein 116 mg/dL
- Glucose 96 mg/L
- Plasma glucose 210 mg/dL

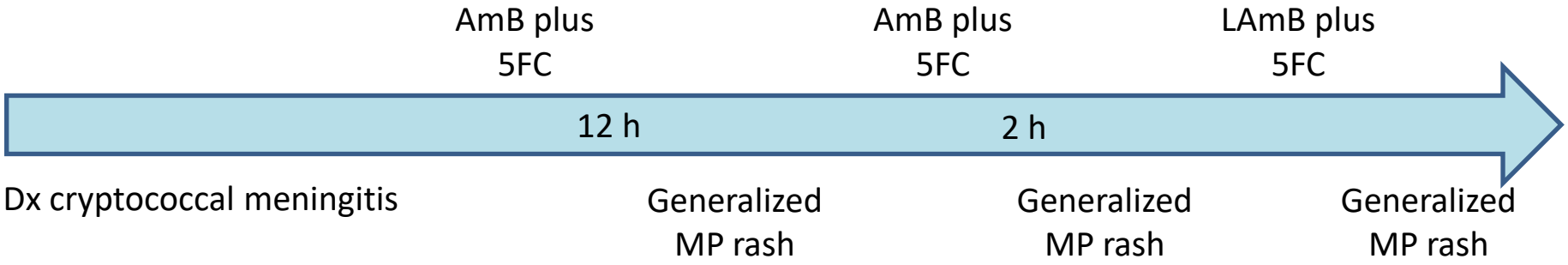
- Serum and CSF CrAg: positive
- H/C and CSF CS: *Crptococcus neoformans*

- Cr 1.33 mg/dL (CrCl 36)

- CSF ADA = 4 U/L
- PCR for TB: negative

Amphotericin B plus Flucytosine

Progression



FLC+ 5FC
Were started

- AmB allergic reaction (rare)
- DDX: Acute infusion-related reactions (AIRRs)*
  - Most AIRRs (86%) occurred within the first 5 min of infusion
  - Chest pain, dyspnea, and hypoxia
  - Severe abdomen, flank, or leg pain
  - Flushing and urticaria

*Roden MM et al. CID, 2003

CSF Profile : CM vs TBM

	WBC	Glu	Protein	Other
Cryptococcal meningitis	Normal, rarely increased lymphocytes **(<20)** Median 49 (IQR 10, 220)*	Decreased or normal	Normal or increased	Opening pressure frequently raised; India ink stain 75% sensitive; CSF CrAg: high sensitivity and specificity Gelatinous pseudocyst in MRI (rarely seen) ↑ ***CSF CrAg*** titre ***associated with poor prognosis***, but change of titre with treatment has little correlation with prognosis
Tuberculous meningitis	Increased lymphocytes **(50-300)**	Decreased	Normal or increased	***MTB culture*** has variable sensitivity, but use of ***microscopy*** for acid-fast bacilli and ***CSF NAAT*** can increase sensitivity to >80%

Tan et al. Lancet Neurol, 2012
. Tunkel et.al. Mandell, Douglas, and Bennett's Principles and Practice of Infectious Diseases, 2020
*Teekaput C et al. Pathogens, 2023

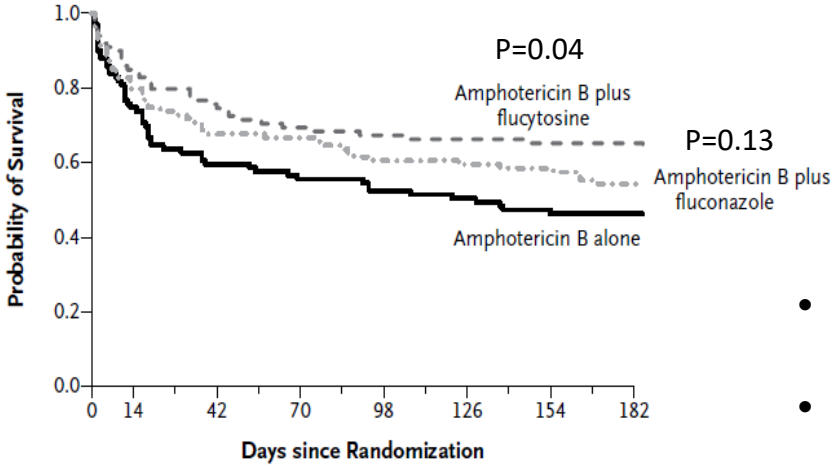
Treatment

- **Antifungal therapy**

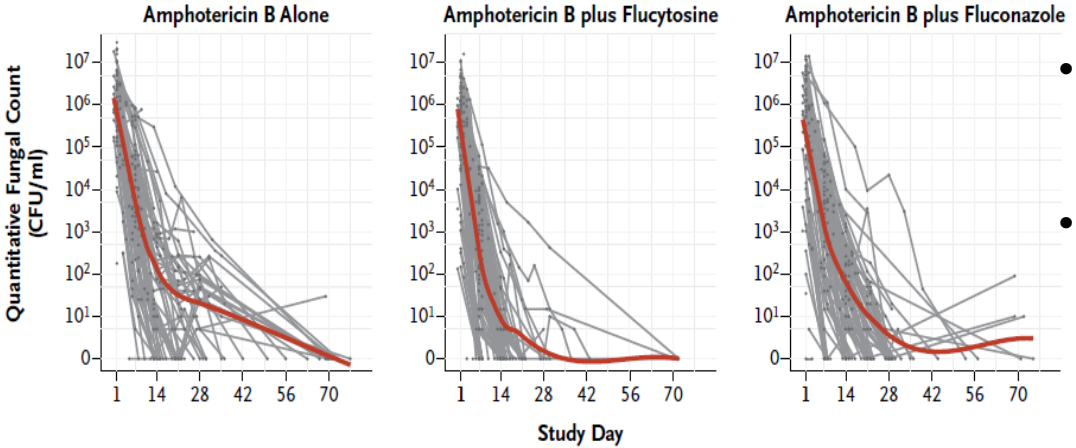
- **Intracranial pressure management**
  - If the CSF pressure is ***25 cm of CSF and there are symptoms of increased intracranial pressure*** during induction therapy relieve by CSF drainage
  - ***Reduce the opening pressure by 50%*** if it is extremely high or ***to a normal pressure of 20 cm of CSF***
  - ***Repeat lumbar puncture daily*** until the CSF pressure and symptoms have been ***stabilized for >2 days***

- **Antiretroviral agents** in 4-6 weeks

Perfect et al. CID 2010



No. at Risk								
Amphotericin B alone	99	74	59	54	51	49	46	30
Amphotericin B plus flucytosine	100	84	73	67	64	63	62	46
Amphotericin B plus fluconazole	99	79	67	65	59	58	57	39



Combination Antifungal Therapy for CM :

AmB vs AmB + FLC vs AmB + 5FC

- Randomized, three-group, open-label trial
- 299 patients with HIV and CM
- **AmB + 5FC vs AmB:**
  - **Fewer deaths by days 14 and 70**
- **AmB + FLC vs AmB:**
  - **No significant effect on survival**
- **AmB + 5FC vs AmB:**
  - **↑rates of yeast clearance at day 14**

Day JN et al. NEJM, 2013

DHHS Guideline, Jul 1, 2021

Induction Therapy (For At Least 2 wks, Followed by Consolidation Therapy)

Preferred Regimens:

- **LAmB** 3–4 mg/kg IV daily plus **flucytosine** 25 mg/kg PO QID (AI); or
- **AmBd** 0.7–1.0 mg/kg IV daily plus **flucytosine** 25 mg/kg PO QID (AI)

AmB + Flucytosine

Alternative Regimens:

ABLC 5 mg/kg IV daily plus **flucytosine** 25 mg/kg PO QID (BII); or

- **LAmB** 3–4 mg/kg IV daily plus **fluconazole 800 mg** PO or IV daily (BIII); or
- **AmBd** 0.7-1.0 mg/kg IV daily plus **fluconazole 800 mg** PO or IV daily (BI); or

AmB + Fluconazole

LAmB 3–4 mg/kg IV once daily plus **flucytosine** 25 mg/kg PO four times a day for **1 wk** followed by **fluconazole** 1,200 mg PO once daily (BIII)

AmB + Flucytosine -> Fluco

LAmB 3–4 mg/kg IV daily alone (BI); or

AmBd 0.7–1.0 mg/kg IV daily alone (BI); or

AmB

Fluconazole 400 mg PO or IV daily plus **flucytosine** 25 mg/kg PO QID (BII); or

Fluconazole 800 mg PO or IV daily plus **flucytosine** 25 mg/kg PO QID (BIII); or

Fluconazole + Flucytosine

Fluconazole 1200 mg PO or IV daily alone (CI)

Fluconazole

Consolidation Therapy (For At Least 8 wks, Followed by Maintenance Therapy for 1 year after induction Tx: FLC 200 mg/d)

Preferred Regimen: **Fluconazole 800 mg** PO or IV once daily (AI) **(clinically stable, negative CSF C/S 400 mg)**

Alternative Regimen: **Itraconazole 200 mg** PO BID (CI)

If CSF remains positive (but clinically stable) after 2 wks of induction Tx >> Fluconazole 1,200 mg and LP 2 weeks later (BIII)

Duration of consolidation therapy should be 8 wks from the time of negative CSF culture (AI)

Antifungal Combinations for Treatment of CM : ACTA trial

Table 4. Unadjusted Time-to-Event Analysis of Mortality and Rate of Fungal Clearance in CSF According to Treatment Strategy and Partner Treatment with Amphotericin B in the Intention-to-Treat Population.*

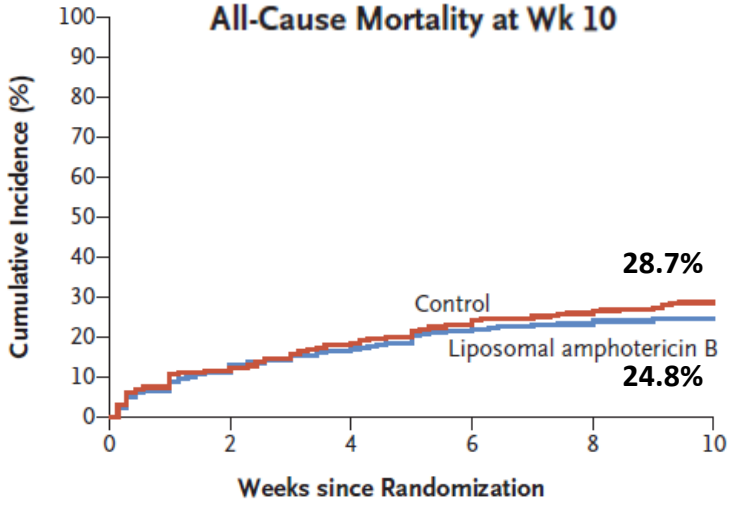
Outcome	Oral Regimen (N=225)	1-Wk Amphotericin B + Fluconazole (N=111)	1-Wk Amphotericin B + Flucytosine (N=113)	2-Wk Amphotericin B + Fluconazole (N=114)	2-Wk Amphotericin B + Flucytosine (N=115)	Hazard Ratio vs. 2-Wk Amphotericin B + Flucytosine (95% CI)				P Value†
	FLC+ 5FC					Oral Regimen	1-Wk Amphotericin B + Fluconazole	1-Wk Amphotericin B + Flucytosine	2-Wk Amphotericin B + Fluconazole	
Mortality at 10 wk										
No. of deaths	79	54	27	47	44					
Mortality (95% CI) — %	35.1 (28.9 to 41.3)	48.6 (39.4 to 57.9)	24.2 (16.2 to 32.1)	41.3 (32.3 to 50.4)	38.3 (29.4 to 47.2)	0.87 (0.60 to 1.27)	1.42 (0.95 to 2.12)	0.56 (0.35 to 0.91)	1.10 (0.73 to 1.67)	0.001
Mortality at 2 wk										
No. of deaths	41	36	13	25	24					
Mortality (95% CI) — %	18.2 (13.2 to 23.3)	32.4 (23.7 to 41.1)	11.6 (5.7 to 17.5)	21.9 (14.3 to 29.5)	20.9 (13.4 to 28.3)	0.84 (0.50 to 1.39)	1.64 (0.97 to 2.78)	0.51 (0.26 to 1.00)	1.03 (0.59 to 1.82)	0.002
Mortality at 4 wk										
No. of deaths	56	46	20	40	37					
Mortality (95% CI) — %	24.9 (19.2 to 30.5)	41.4 (32.3 to 50.6)	17.8 (10.7 to 24.9)	35.1 (26.3 to 43.8)	32.2 (23.6 to 40.7)	0.74 (0.49 to 1.12)	1.41 (0.91 to 2.18)	0.50 (0.29 to 0.86)	1.10 (0.70 to 1.72)	<0.001
						Difference from 2 Wk Amphotericin B + Flucytosine in Mean Clearance Rate (95% CI)				
Fungal clearance‡										
No. of patients	182	81	98	94	88					
Clearance rate — $\log_{10}$ CFU/ml/day	−0.26±0.18	−0.36±0.23	−0.44±0.25	−0.37±0.24	−0.49±0.26	0.14 (0.11 to 0.17)§	0.08 (0.04 to 0.12)§	0.03 (−0.01 to 0.06)¶	0.06 (0.03 to 0.10)§	

* Plus–minus values are means ±SD. Missing values were not imputed.
† P values in this column pertain to the comparison of all five survival curves and were calculated with the use of the log-rank test.
‡ Data are from a mixed-effects model with treatment, day, and interaction between treatment and day as fixed effects, the log baseline measurement of fungal count as a covariate, and patient as a random effect.
§ P<0.001 for the difference from the 2-week amphotericin B–flucytosine group.
¶ P=0.16 for the difference from the 2-week amphotericin B–flucytosine group.

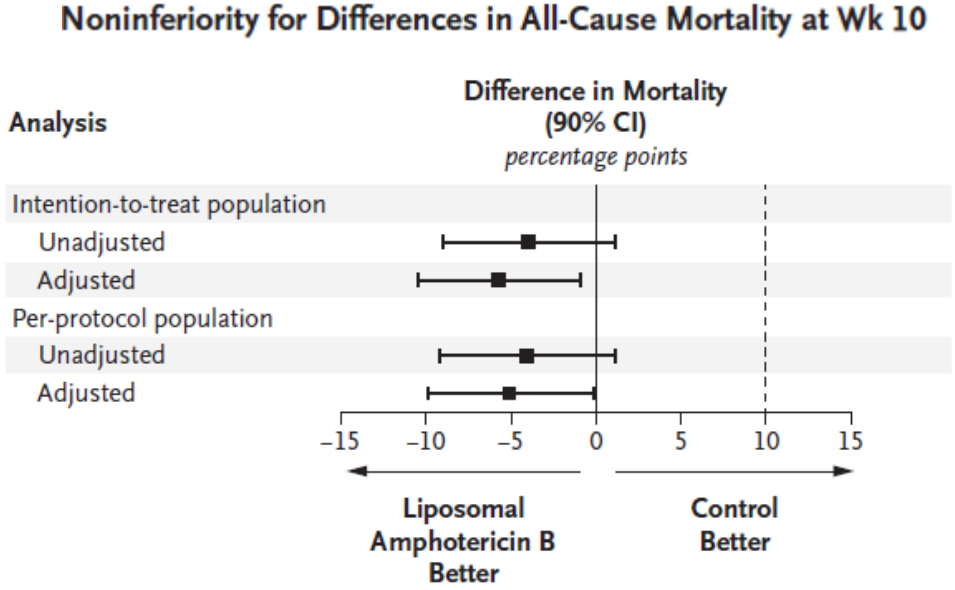
Molloy SF et al. NEJM, 2018

Single-Dose Liposomal AmB Treatment for CM in HIV Patients

- Phase 3 randomized, controlled, non-inferiority trial
- Single high dose of **LAmB** (10 mg/kg) + **14 days of 5FC** (100 mkd) + **FLC** (1200 mg/d) vs WHO regimen
- Non-inferior to WHO regimen, lower adverse events (50% vs 62.3%)



No. at Risk						
Control	407	359	332	311	299	288
Liposomal amphotericin B	407	360	337	317	310	304



Jarvis JN et al. NEJM, 2022

Case 2: 37-year-old man

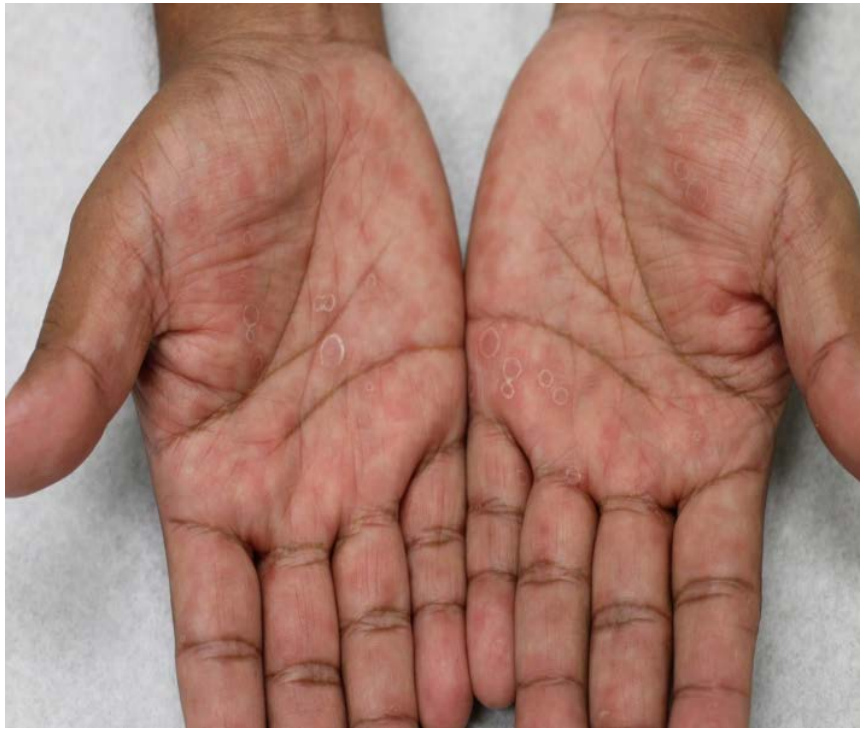
- CC: ผื่น 5 วัน
- Known case HIV infection, in 2018, on TLD, CD4 600 cell/mm^3, VL<20 copies/ml (2023)

- PI: 5 วัน PTA ต่อมน้ำเหลืองที่ขาหนีบโต มีแผลที่อวัยวเพศ เป็นแผลเล็กหลายแผล นูน ๆ

  4 วัน PTA มีผื่นที่แขน เป็นตุ่มแดง เจ็บเล็กน้อย

  1 วัน PTA มา รพ. ได้ตรวจปัสสาวะ และส่งไปห้องฉุกเฉินเพื่อฉีดยารักษา primary syphilis
- วันนี้ (30/6/66) มาตรวจอายุรกรรมตามนัด ผื่นเป็นมากขึ้นกระจายมาที่หน้า ลำตัว เจ็บคอ ปวดเมื่อยตามตัว ไข้ต่ำ ๆ มีประวัติมีเพศสัมพันธ์กับชายที่ไม่รู้จักในซาวน่าเมื่อ 17/6/66 เป็นฝ่ายรุก

Secondary Syphilis



Papulosquamous rash

Primary Syphilis

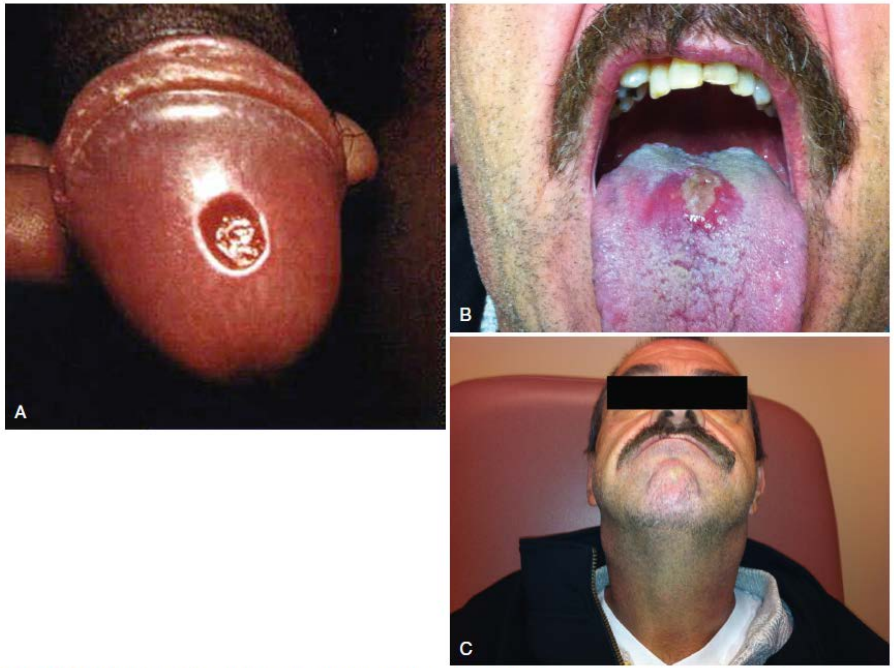


FIGURE 239-6 **A,** Classical penile chancre. **B,** Oral chancre. **C,** Bilateral cervical lymphadenopathy in same patient as in **B.** *(**B** and **C** courtesy Dr. Kevin Dieckhaus, Copyright 2013.)*

Clean based ulcer, raised, cartilaginous border, lymphadenopathy

ต้นฉบับ

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Department of Medical Sciences

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http://nih.dmsc.moph.go.th/

รายงานผลการทดสอบ

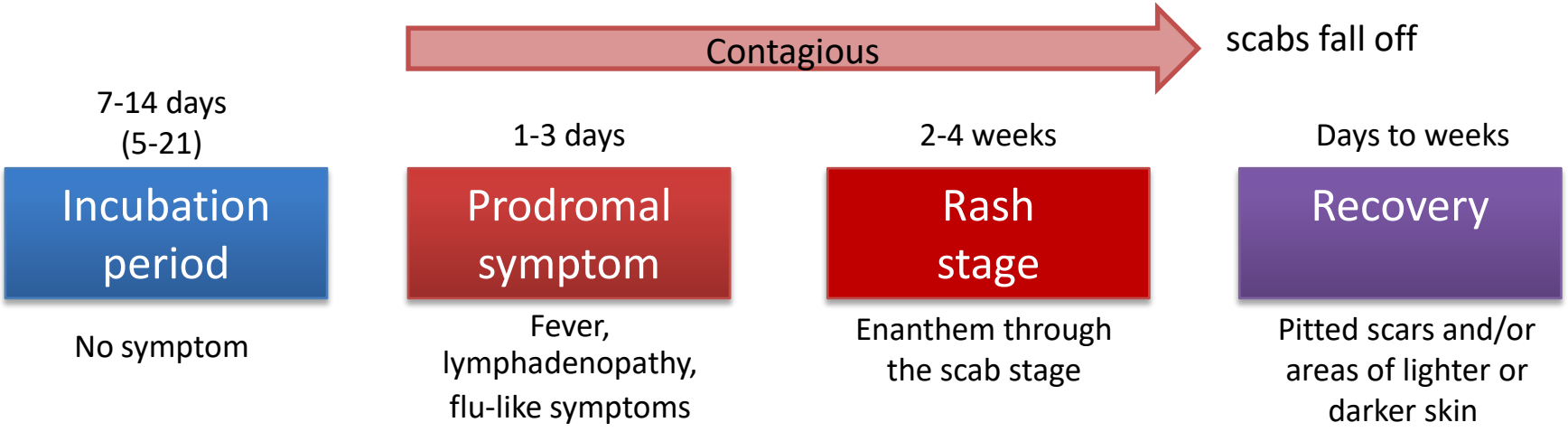
เลขที่รายงาน [redacted] หน้า 1 ของ 1 หน้า

หนังสือนำส่งที่ [redacted]	**ผู้ส่งตัวอย่าง** สถาบันป้องกันควบคุมโรคเขตเมือง
ลงวันที่ 30/06/2566	**ที่อยู่** 24/56 หมู่ 3 ถนนพหลโยธิน แขวงอนุสาวรีย์ เขตบางเขน กรุงเทพมหานคร 10220
วันที่รับตัวอย่าง 30/06/2566	
หมายเลขตัวอย่าง [redacted]	**วันที่เก็บตัวอย่าง** 30/06/2566
ชนิดตัวอย่าง lesion swab	**ปริมาณที่รับ** 1 หลอด หลอดละ - หน่วย
ชื่อตัวอย่าง [redacted]	
ลักษณะตัวอย่าง -	

รายการทดสอบ	ผลการทดสอบ	วิธีทดสอบ
การตรวจหาสารพันธุกรรมเชื้อไวรัส Monkeypox ด้วยเทคนิค real-time PCR	พบสารพันธุกรรมเชื้อไวรัส Monkeypox	Real-time PCR

หมายเหตุ 1.Orthopox virus Ct = 21.02, Monkeypox virus Ct = 21.22

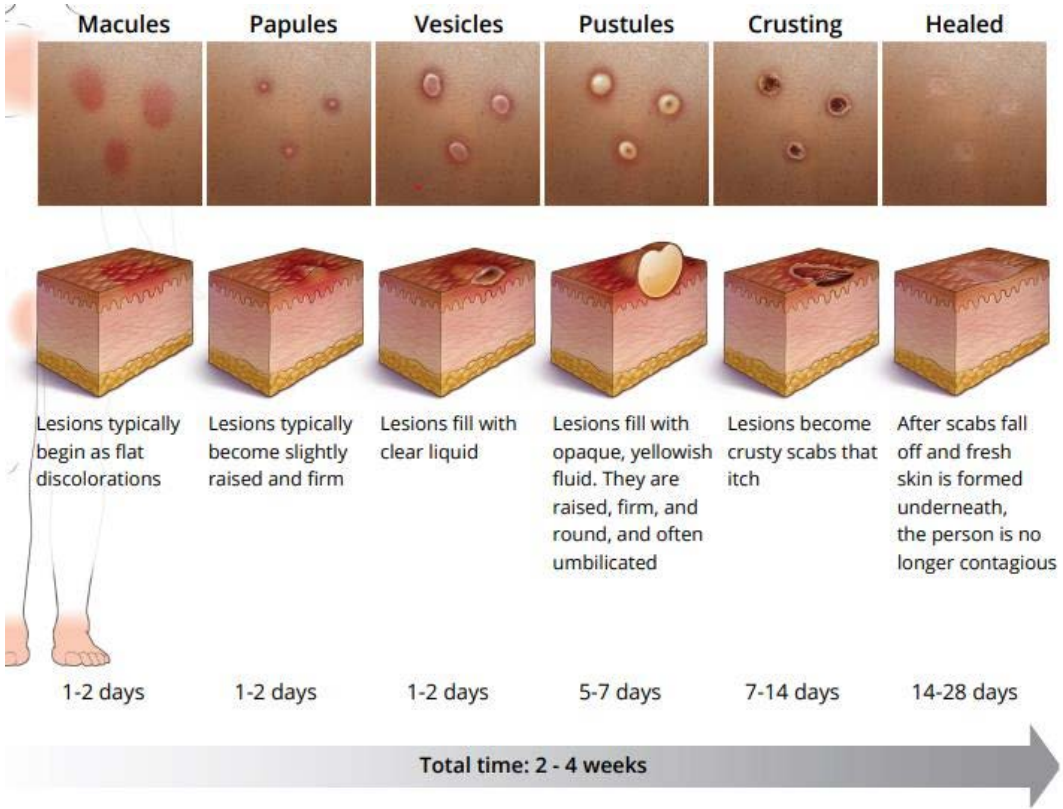
Clinical Manifestation



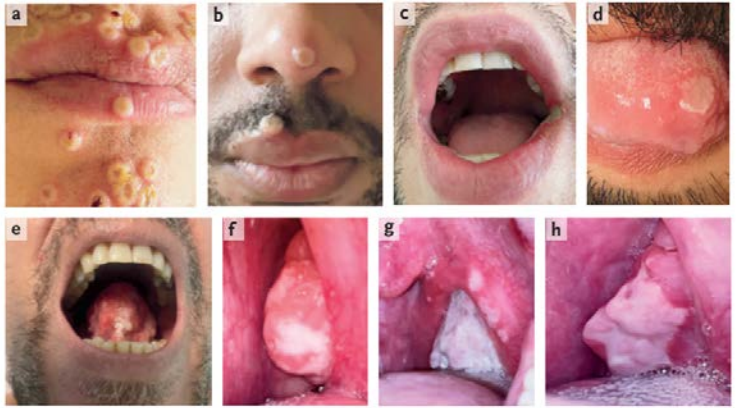
- Transmission:
- MPXV-2022 R_0 2.44
- Pre-symptomatic transmission: 4 days before rash/prodrome
- Human-to-human transmission
  - **Direct contact** with lesion or body fluid
  - **Anogenital** or **pharyngeal mucosal** contact
  - Indirect contact via grossly soil clothing
- Respiratory transmission – unknown
- **Link to sexual activity** or STD

CDC, Signs and Symptoms webpage. 2022
Branda F, J Med Virol. 2023
CDC, Detection and Transmission of Mpox. 2022
Beeson, Lancet Microbe. 2023
Allan-Blitz, CID. 2023

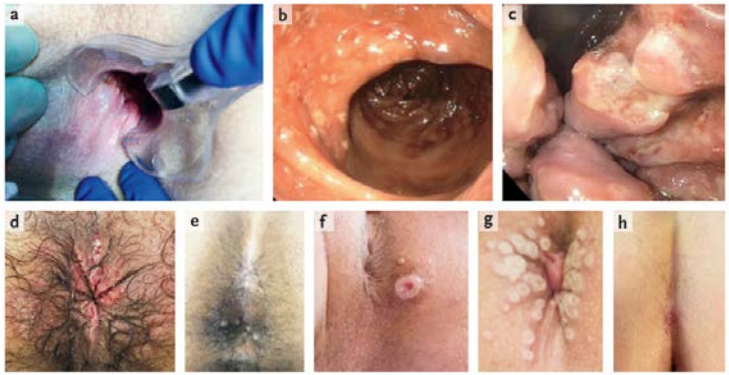
Mpox Lesions Progression



Oral pharyngeal lesions



Anogenital lesions



National STD Curriculum: Mpox Clinical Guide

Thornhill JP, N Engl J Med. 2022 Aug.

Table 1. Features of the Classic Form of Monkeypox and the New Clinical–Epidemiologic Form.

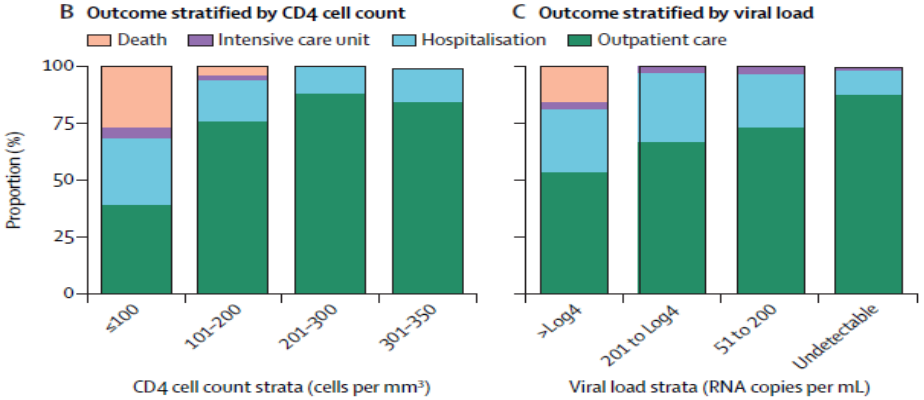
Variable	Classic Form, 1970s to the Present	New Clinical–Epidemiologic Form, 2022
Location	Central and West Africa	Countries where monkeypox is not endemic (Europe, North and South America, Middle East, Australia)
Affected population	Children and young adults (age at diagnosis increasing since 1980)	Young men who have sex with men (age, 31–40 yr)
Epidemiologic features	Sporadic cases and epidemics	Pandemic under way since May 2022
Transmission	Contact with infected animal reservoir (probably rodents), followed by human-to-human transmission	Exclusively human-to-human transmission
Dissemination	Mostly intrafamilial and limited nosocomial dissemination	Mostly sexual networking, condomless sex with multiple male partners
Clinical phase	Incubation, prodromal stage, eruption phase with skin lesions	Incubation, prodromal stage (not always present), eruption phase with lesions in an unusual distribution, especially on the genitals
Symptoms	Lesions on the face and extremities, with centrifugal distribution, often associated with cervical or axillary lymphadenopathy	Penile rash, perianal lesions, ulcerative lesions and vesicular rash, painful inguinal lymphadenopathy, pharyngitis, proctitis
Viruses	Central African and West African clades (clades 1 and 2, respectively)	West African variant (clade 3)
Case fatality rate (%)	1–15	0.025

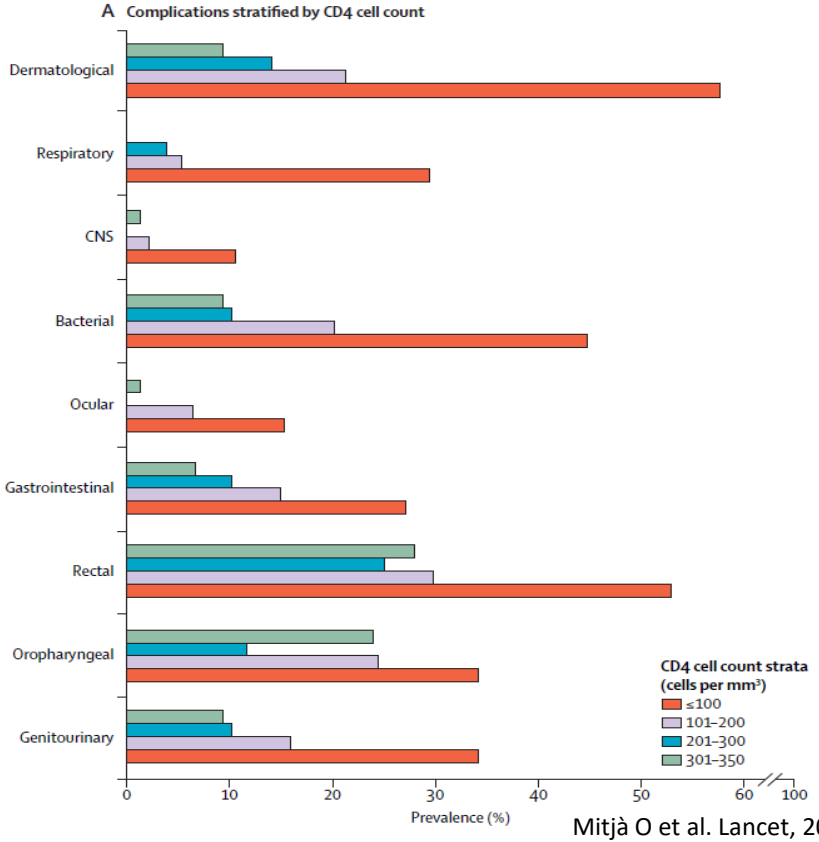
Gessain A, N Engl J Med. 2022

MPOX and HIV

- PWH have accounted for ***38–50%*** of cases in the 2022 multicountry outbreak
- From large case series of PWH with mpox, ***19 countries***, May 2022-Jan 2023
- 382 cases: ***367 cisgender men***, 91% of pt. were known to be living with HIV, 51% achieve HIV viral suppression, 22% of pt. with CD4 cell < 100 cells/mm³

	Total (n=382)	CD4 <100 cells per mm³* (n=85)	CD4 100–200 cells per mm³ (n=94)	CD4 201–300 cells per mm³ (n=128)	CD4 >300 cells per mm³ (n=75)
Mpox rash presentation					
Peak number of skin lesions	15 (8–35)	30 (15–100)	20 (12–35)	12 (6–20)	10 (4–15)
Rash duration in days	23 (18–33)	31 (21–45)	26 (19–40)	21 (16–28)	21 (15–30)
Mpox organ complications†					
Dermatological skin lesions distant from the point of entry					
Overall	94 (25%)	49 (58%)	20 (21%)	18 (14%)	7 (9%)
Large necrotising lesions	84 (22%)	46 (54%)	19 (20%)	14 (11%)	5 (7%)
Ecchymosis haemorrhage	10 (3%)	3 (4%)	1 (1%)	4 (3%)	2 (3%)

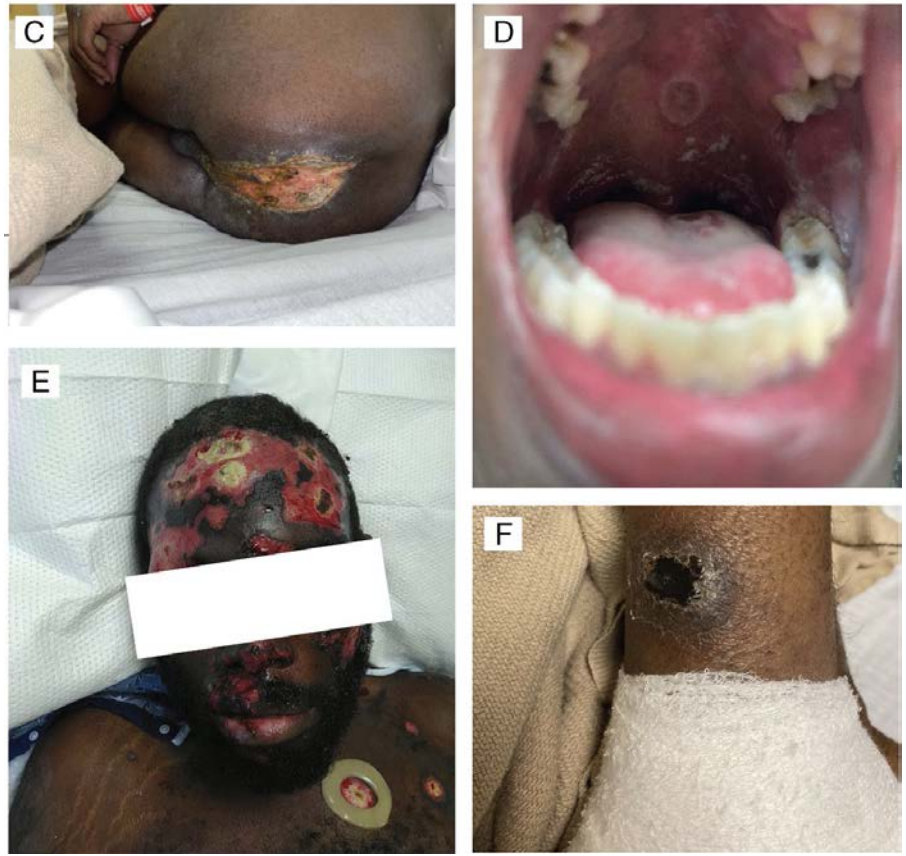




Mitjà O et al. Lancet, 2023

Figure mpox lesions in patients* with HIV.
A: Coalescent ulcers.
B: Multiple large ulcers pustules in hands.
C: Coalescent lesions in the perianal region.
D: Single mpox ulcer in the soft palate.
E: Large coalescent, necrotic facial and scalp lesions
F: Eschar in the lower extremity.

Photos by Alexandra Dretler, Jonathan Colasanti, and Valeria D. Cantos



Saldana CS et al. Current HIV/AIDS Reports, 2023

Specimen Collection and Diagnosis

ระยะของอาการ		สิ่งส่งตรวจ	ปริมาณ	การนำส่ง	การตรวจวิเคราะห์
ก่อนมีตุ่ม/ผื่น (Prodromal)	มีตุ่ม/ผื่น (Vesicle)				
+	+/-	Nasopharyngeal/ Oropharyngeal swab	ใส่หลอดปราศจากเชื้อ หรือ หลอด VTM (1-2 ml)	• แช่เย็นที่อุณหภูมิ 2-8 °C หรือแช่แข็งที่อุณหภูมิ -20 °C หรือต่ำกว่า ภายใน 1 ชั่วโมงหลังการเก็บตัวอย่าง และนำส่งห้องปฏิบัติการทันที • กรณีเก็บตัวอย่างก่อนส่งตรวจห้องปฏิบัติการนานกว่า 7 วัน ให้เก็บแช่แข็งที่อุณหภูมิ -20 °C หรือต่ำกว่า	• ตรวจหาสารพันธุกรรม Orthopoxvirus ด้วยเทคนิค Real-time PCR • ตรวจหาสารพันธุกรรม Monkeypoxvirus ด้วยเทคนิค Real-time PCR และอาจทดสอบอีกครั้ง เพื่อจำแนกว่าเป็น Congo/ Central Basin หรือ West African clades • ตรวจลำดับนิวคลีโอไทด์ด้วยเทคนิค DNA sequencing
-	+	Vesicular หรือ Pustular fluid *	0.5 – 1 ml ใส่ในหลอดปราศจากเชื้อ		
-	+	Swab สารน้ำจากแผล (lesion exudate) *	ใส่หลอดปราศจากเชื้อ หรือ หลอด VTM (1-2 ml)		
-	+	ผิวหนังส่วนบนของตุ่มน้ำ/ตุ่มหนอง (lesion roofs)			
-	+	สะเก็ดแผล (lesion crusts)			
+	+	เลือด (Whole blood)	ใส่หลอด EDTA 3-5 ml		
+	+	Serum/Clot blood	ใส่หลอด Clot blood 3 – 5 ml หรือ Serum 0.5 – 1 ml		การตรวจทางน้ำเหลืองวิทยา (Serology)

แจ้งกรมควบคุมโรคก่อนเก็บตัวอย่าง

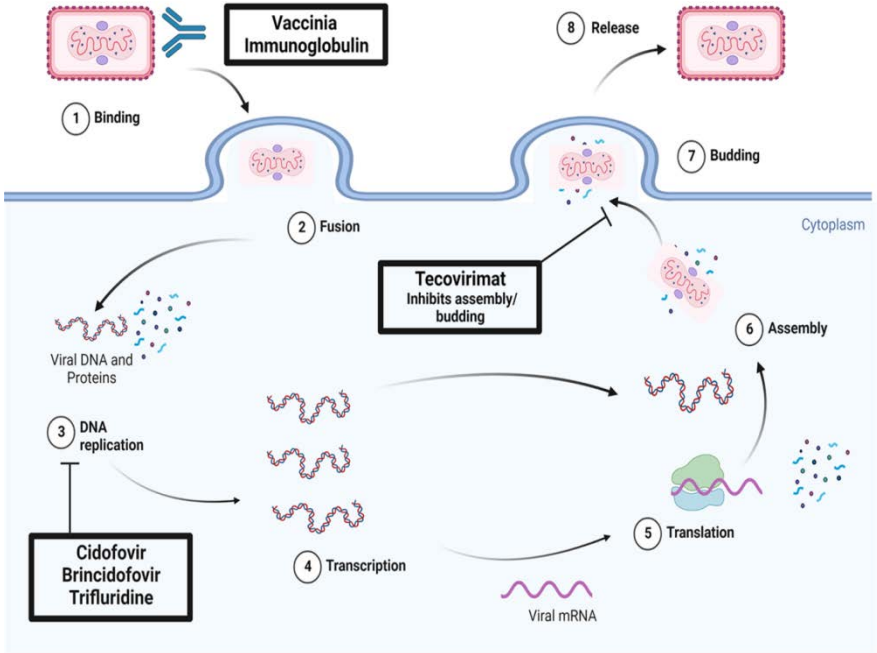
กรณีที่สามารถเก็บ Vesicular หรือ Pustular fluid ได้ให้เก็บควบคู่กับ Swab สารน้ำจากแผล (lesion exudate) และ ตัวอย่างอื่น แต่หากไม่สามารถเก็บได้ ให้เก็บ Swab สารน้ำจากแผล (lesion exudate) และตัวอย่างอื่นแทนได้

Diagnosis: RT-PCR

Treatment

- Mostly mild, **self-limiting disease**
- **Pain control**
- Currently there is no specific treatment approved for mpox infections

- Indication for antiviral: severe disease, high risk of severe disease (including PWH)
  - **Tecovirimat** (TPOXX), resiatance was reported
  - Cidofovir
  - Brincidofovir
  - Vaccinia Ig Intravenous (VIGIV)
  - **HIV ART → beware of IRIS**



Saldana CS et al. Current HIV/AIDS Reports, 2023
Barnes AH et al. Curr Treat Options Infect Dis, 2022

Vaccine

contraindicated for PWH

	ACAM2000	JYNNEOS
Vaccine virus	Replication-competent vaccinia virus	Replication-deficient Modified vaccinia Ankara
"Take"	"Take" occurs	No "take" after vaccination
Inadvertent inoculation and autoinoculation	Risk exists	No risk
Serious adverse event	Risk exists	Fewer expected
Cardiac adverse events	Myopericarditis in 5.7 per 1,000 primary vaccinees	Risk believed to be lower than that for ACAM2000
Effectiveness	FDA assessed by comparing immunologic response and "take" rates to Dryvax*	FDA assessed by comparing immunologic response to ACAM2000 & animal studies
Administration	Percutaneously by multiple puncture technique in single dose	Subcutaneously in 2 doses, 28 days apart

JYNNEOS Vaccine Effectiveness

Table 2. Estimated Vaccine Effectiveness against Diagnosed Mpox among Persons Seeking Health Care, August 15 through November 19, 2022.*

Persons Seeking Health Care	Case Patients	Control Patients	Vaccine Effectiveness (95% CI)	
			Unadjusted	Adjusted†
	number		*percent*	
Unvaccinated, reference population	2022	6984		
Partially vaccinated, 1 dose	146	1000	52.0 (42.3–60.1)	35.8 (22.1–47.1)
Fully vaccinated, 2 doses	25	335	77.2 (65.0–85.1)	66.0 (47.4–78.1)

* CI denotes confidence interval.

† Adjustment was for age group (18 to 35, 36 to 49, and ≥50 years), race or ethnic group (non-Hispanic White, non-Hispanic Black, and other non-Hispanic), Social Vulnerability Index quartile (quartile 1 to 4, or unknown), and the presence or absence of an immunocompromising condition.

Deputy NP, N Engl J Med. 2023

IC in Healthcare Settings and Isolation

- **HCW - full PPE**
- Single-person room with bathroom
- Patient wear medical mask
- Special air handling is not required (except during procedures that may spread oral secretions)
- Standard cleaning and disinfection, wet cleaning methods are preferred
- Soiled laundry should be handled in standard practices in laundry bag

- Isolation precautions: **21 days** or until all lesions have crusted, those crusts have separated, and a fresh layer of healthy skin has formed underneath
- Condom
  - UKHSA guidelines have advised condom use for 8 weeks after infection
  - WHO recommendation : condom use for 12 weeks

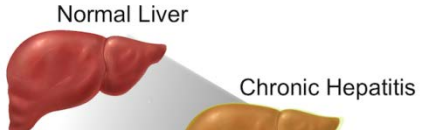
Infection Control in Healthcare Settings, CDC 2022
Thai CPG, 2022

Case 3: A 49-year-old Thai monk

- Diagnosed with HIV infection in 2556, presented with pulmonary TB
- BMI 32 kg/m^2 (BW 98 kg, Ht 173 cm.)
- Current medications: TDF/FTC/EFV, simvastatin 20 mg/day (2561)
  - CD4 460 cell/mm^3 (31%), VL < 20 copies/ml
  - HBsAg, anti-HCV, RPR, syphilis Ab: negative, HBsAb: positive
  - AST/ALT: 44/66 IU/L, TG 150 mg/dL, TC 210 mg/dL, LDL 160 mg/dL
  - USG of liver: parenchymal disease, fatty liver

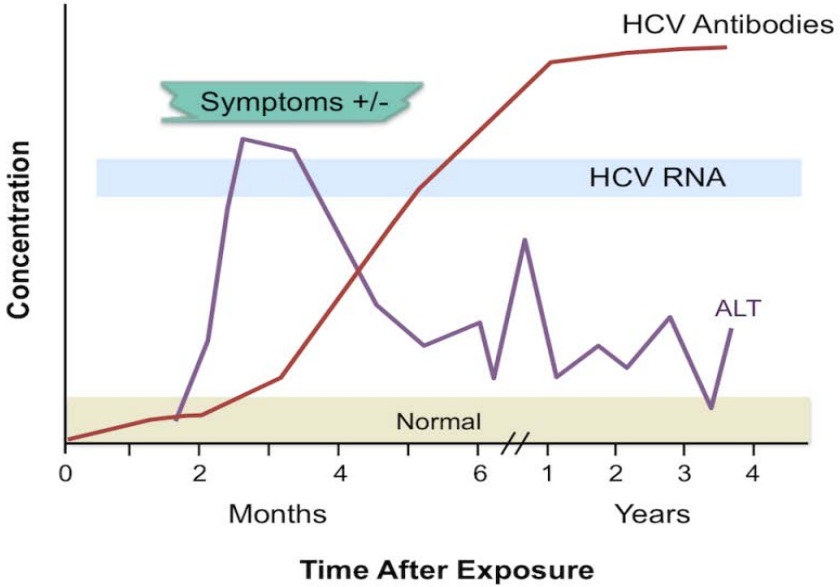
- During follow up in 2562 he developed asymptomatic transaminitis
- Deny using herbs or or other drugs, IVDU, tattoo, unsafe sex
- AST/ALT ***516/691*** IU/L, TB/DB 0.63/0.43 mg/dL
- Follow up at two weeks AST/ALT 567/683 IU/L, ***TB/DB 5.1/4.3*** mg/dL
- Physical examination: icteric sclera

Lab Investigations

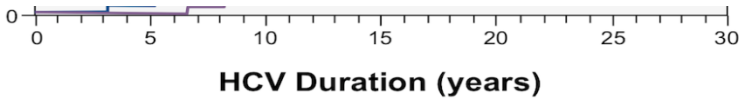


- Anti HCV: positive, HAV Ab: negative
- HCV RNA: 8,030,000, genotype 1b
- Fibroscan: liver stiffness 26 kPa (F4)
- ANA: 1:80

	9/62
WBC (cells/µL)	8850
Hct%	34
Plt (cells/µL)	499000



Window period prior to seroconversion: 2-24 weeks
Antibody response: 8 to 12 weeks



- Simplified protocol should be apply?

Lingala S, Ghany MG. Gastroenterol Clin North Am, 2015. Kim Ay et al. JID, 2(
Lo Re V 3rd et al. Ann Intern Med, 2014. Di Martino V et al. Heptology, 2001

Box 1. Characteristics of People with HIV for Whom Simplified Hepatitis C Virus Treatment Is Not Recommended[a]

1. Prior HCV treatment (Reinfection after prior successful therapy is **not** an exclusion.)
2. Decompensated cirrhosis[b]
3. TDF-containing regimen with an eGFR <60mL/min
4. On efavirenz, etravirine, nevirapine, or boosted HIV-1 protease inhibitors[c]
5. Untreated chronic HBV infection
6. Pregnancy

[a] People with HIV and HCV infection who meet these exclusion criteria should be treated for HCV following standard approaches (see the AASLD/IDSA HCV Guidance).

[b] Including, but not limited to, current or prior variceal bleeding, ascites, or hepatic encephalopathy

Box 2. Pre-treatment Assessment Under Simplified Approach

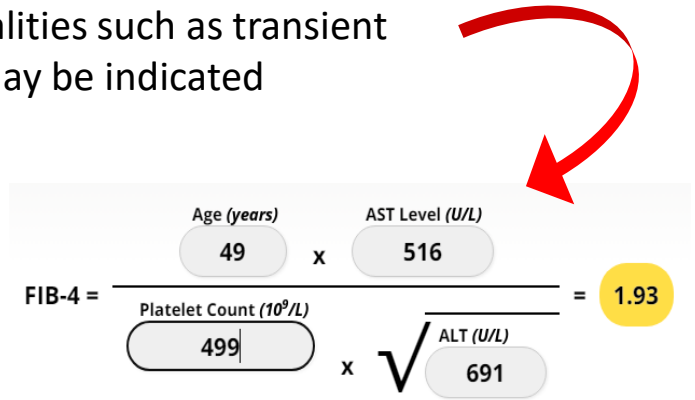
1. Creatinine, liver function tests, and complete blood count
2. HCV RNA
3. Hepatitis B surface antigen
4. Initial fibrosis staging with FIB-4 (FIB-4 calculator)[a]
5. Medication and drug interaction review
6. HCV genotype required if cirrhosis is present

[a] Additional testing may be required if results are indeterminate (see text).

Assessment of Liver Fibrosis: Non- Invasive Test

- FIB-4 blood test
  - FIB-4 score **< 1.45** has a NPV of 90% for advanced fibrosis
  - FIB-4 **> 3.25** would have a 97% specificity and a PPV of 65% for advanced fibrosis
  - FIB-4 score of **1.45–3.25**, non-invasive imaging modalities such as transient **elastography** or magnetic resonance elastography may be indicated

- Transient elastography
  - False positive: acute hepatitis, inflammation, non-fasting, exercise, hepatic venous congestion, inflammation or infiltration, alcohol excess, cholestasis, steatosis, portal vein thrombosis



Sterling RK et al. Hepatology, 2006
Patel K and Sebastiani G, JHEP reports, 2020

Direct-Acting Antiviral Agents

Table 1. Recommendations for Initial Treatment of Hepatitis C Virus–Infected Adults

Regimen	Genotype	Classification	Duration	Rating	Caveats and Other Considerations
Treatment-naive without cirrhosis or with compensated cirrhosis					
Glecaprevir/pibrentasvir	1–6	Recommended	8 wk	I, A[a]	Thailand subtypes: 3a (36.4%), 1a (19.9%), 1b (12.6%), 3b (9.7%) and 2a (0.5%)
Sofosbuvir/velpatasvir	1–6	Recommended	12 wk	I, A[b]	For genotype 3 infection with compensated cirrhosis, NS5A RAS testing is recommended. If baseline NS5A RAS Y93H is present, add weight-based ribavirin or choose another recommended regimen.
Ledipasvir/sofosbuvir	1, 4, 5, 6	Recommended	12 wk	I, A[c]	Not recommended for genotype 6e infection if subtype is known.
	1 without cirrhosis	Recommended	8 wk	I, B	Applicable to patients without cirrhosis who are not living with human immunodeficiency virus and whose HCV RNA is <6 million IU/mL.
Elbasvir/grazoprevir	1b, 4	Recommended	12 wk	I, A[d]	
	1a	Alternative	12 wk	I, A	For genotype 1a infection, NS5A RAS testing is recommended. If baseline RASs are present (ie, substitutions at amino acid positions 28, 30, 31, or 93), another recommended regimen should be used.
Sofosbuvir/velpatasvir + weight-based ribavirin	3	Alternative	12 wk	IIa, A	Applicable to genotype 3 infection with compensated cirrhosis and baseline NS5a Y93 RAS.
Sofosbuvir/velpatasvir/ voxilaprevir		Alternative	12 wk	IIa, B	Applicable to genotype 3 infection with compensated cirrhosis and baseline NS5a Y93 RAS.
Treatment-naive with decompensated cirrhosis					
Sofosbuvir/velpatasvir + weight-based ribavirin	1–6	Recommended	12 wk	I, A[e]	Low initial dose of ribavirin (600 mg) is recommended for patients with CTP class C cirrhosis; increase as tolerated.
Sofosbuvir/velpatasvir	1–6	Recommended	24 wk	I, A[e]	Applicable to patients who are ribavirin ineligible.
Ledipasvir/sofosbuvir + weight-based ribavirin	1, 4, 5, 6	Recommended	12 wk	I, A[f]	Low initial dose of ribavirin (600 mg) is recommended for patients with CTP class C cirrhosis; increase as tolerated.
Ledipasvir/sofosbuvir	1, 4, 5, 6	Recommended	24 wk	I, A[f]	Applicable to patients who are ribavirin ineligible.

Recommendations are listed by recommended vs alternative and by genotypic activity, evidence level, and alphabetically.

Abbreviations: CTP, Child–Turcotte–Pugh score; HCV, hepatitis C virus; NS5A, hepatitis C virus nonstructural protein 5A; RAS, resistance-associated substitution.

[a]The level of evidence rating is I, B for persons with compensated cirrhosis.

[b]The level of evidence rating is I, B for persons with genotype 5 or 6 infection.

[c]The level of evidence rating is IIa, B for persons with genotype 5 or 6 infection and those with genotype 4 infection and compensated cirrhosis.

[d]The level of evidence rating is IIa, B for persons with genotype 4 infection and compensated cirrhosis.

[e]Only available data for genotype 6 infection are in persons with compensated cirrhosis.

[f]Only available data for genotypes 5 or 6 infection are in a small number of persons with compensated cirrhosis.

Bhattacharya D et al CID, 2023

Wasitthankasem R et al.PLoS One, 2015

Recommendations for Treatment of Hepatitis C Virus Infections

- **For Treatment-Naive Patients Without Cirrhosis (Any Genotype or No Pre-Treatment Genotype)**
  - 3 (**glecaprevir** 100 mg/**pibrentasvir** 40 mg per tablet) tablets daily for **8 weeks (AI)** *or* **SVR12 = 98%***
  - 1 (**sofosbuvir** 400 mg/**velpatasvir** 100 mg per tablet) tablet daily for **12 weeks (AI)** **SVR12 = 95%****

- **For Treatment-Naive Patients with Compensated Cirrhosis (Based on Genotypes)**
- **Genotype 3**
  - 3 (**glecaprevir** 100 mg/**pibrentasvir** 40 mg per tablet) tablets daily for **8 weeks (AIII)**

- Alternative Therapy
  - 3 (**glecaprevir** 100 mg/**pibrentasvir** 40 mg per tablet) tablets daily for **12 weeks (CI)** *or*
  - 1 (**sofosbuvir** 400 mg/**velpatasvir** 100 mg per tablet) tablet daily, **with or without ribavirin** for **12 weeks** pending results of NS5A RAS testing **(CI)**

Guidelines for the Prevention and Treatment of Opportunistic Infections in Adults and Adolescents with HIV, 2023

*Rockstroh JK et al. CID,2018

**Wyles D, et al. CID, 2017

Sustained Virologic Response 12 with a 12-Week Treatment Course

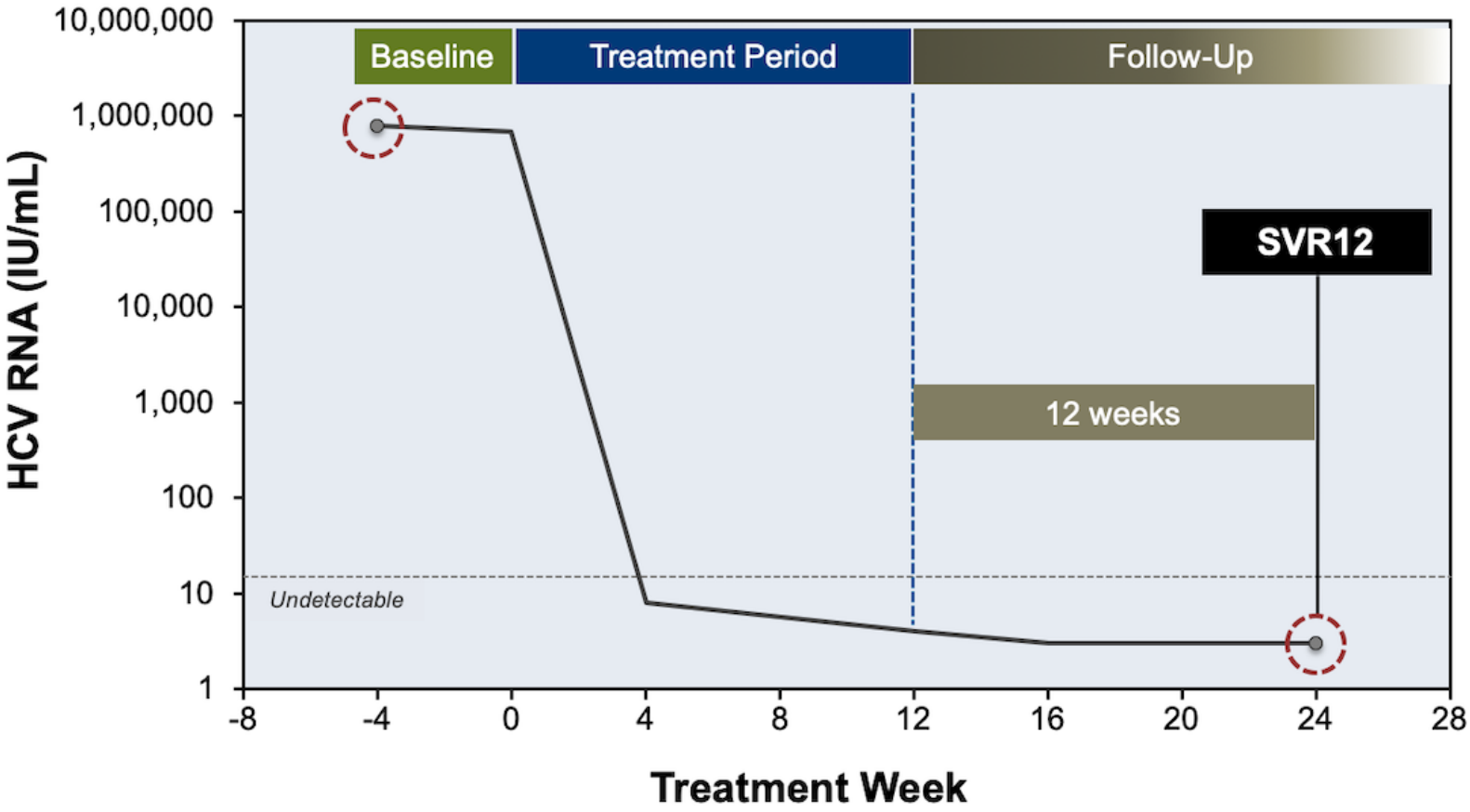


Illustration by David H. Spach, MD
https://www.hiv.uw.edu/go/co-occurring-conditions/hepc-coinfection/core-concept/all

Summary of Major Drug Interactions Between HIV and HCV Antivirals

HIV Antivirals	Glecaprevir/Pibrentasvir	Sofosbuvir/Velpatasvir
EFV, ETR, NVP, and other strong CYP 3A4 and P-gp inducers	Significant decrease in glecaprevir and pibrentasvir concentrations **(avoid)**	Significant decrease in velpatasvir concentrations **(avoid)**
PI/r, PI/c, unboosted ATV	Significant increase in glecaprevir and pibrentasvir concentrations **(avoid)**	Boosted PIs may increase velpatasvir concentrations, but no significant adverse events in clinical trial Coadministration allowed
TDF, TAF	Coadministration allowed	TAF preferred If TDF is used with boosted PIs if GFR <60 mL/min, monitoring is recommended.
RPV, DOR, EVG/c, RAL, BIC, DTG, ABC, FTC, 3TC, MVC	Coadministration allowed	Coadministration allowed

Key: 3TC = lamivudine; ABC = abacavir; ATV = atazanavir; BIC = bictegravir; CYP = cytochrome P450; DOR = doravirine; DTG = dolutegravir; EFV = efavirenz; ETR = etravirine; EVG/c = elvitegravir/cobicistat; GFR = glomerular filtration rate; FTC = emtricitabine; MVC = maraviroc; NVP = nevirapine; PI = protease inhibitor; PI/c = protease inhibitor/cobicistat; PI/r = protease inhibitor/ritonavir; P-gp = p-glycoprotein; RAL = raltegravir; RPV = rilpivirine; TAF = tenofovir alafenamide; TDF = tenofovir disoproxil fumarate

Guidelines for the Prevention and Treatment of Opportunistic Infections in Adults and Adolescents with HIV, 2023

Simplified Protocol

ON-TREATMENT MONITORING

- Inform patients taking diabetes medication of the potential for symptomatic hypoglycemia. Monitoring for hypoglycemia is recommended
- Inform patients taking warfarin of the potential for changes in their anticoagulation status. Monitoring INR for subtherapeutic anticoagulation is recommended.
- No laboratory monitoring is required for other patients.
- An in-person or telehealth/phone visit may be scheduled, if needed, for patient support, assessment of symptoms, and/or new medications.

POST-TREATMENT ASSESSMENT OF CURE (SVR)

- Assessment of quantitative HCV RNA and a hepatic function panel are recommended 12 weeks or later following completion of therapy to confirm HCV RNA is undetectable (virologic cure) and transaminase normalization.
- Assessment for other causes of liver disease is recommended for patients with elevated transaminase levels after achieving SVR.

FOLLOW-UP AFTER ACHIEVING VIROLOGIC CURE (SVR)

- No liver-related follow-up is recommended for noncirrhotic patients who achieve SVR.
- Patients with ongoing risk for HCV infection (eg, intravenous drug use or MSM engaging in unprotected sex) should be counseled about risk reduction, and tested for HCV RNA annually and whenever they develop elevated ALT, AST, or bilirubin.
- Advise patients to avoid excess alcohol use.

FOLLOW-UP FOR PATIENTS WHO DO *NOT* ACHIEVE A VIROLOGIC CURE

- Patients in whom initial HCV treatment fails to achieve cure (SVR) should be evaluated for retreatment by a specialist, in accordance with AASLD/IDSA guidance.
- Until retreatment occurs, assessment for disease progression every 6 to 12 months with a hepatic function panel, CBC, and INR is recommended.
- Advise patients to avoid excess alcohol use.

AASLD

*More detailed descriptions of the patient evaluation process and antivirals used for HCV treatment, including the treatment of patients with cirrhosis, can be found at www.hcvguidelines.org. Updated: August 27, 2020

IDSA

Case 4: A 42-year-old Thai man

- CC: ซึมลง 1 วัน ก่อนมาโรงพยาบาล
- PI: 2 สัปดาห์ PTA ปวดศีรษะทั่ว ๆ ศีรษะ เป็นมากขึ้นเวลาเดินหรือวิ่ง มีไข้ต่ำ ๆ ไม่มีไอ จามเบ่งปวดมากขึ้น ไม่มีตาพร่ามัว ไม่มีเห็นภาพซ้อน ไม่มีแขนขาอ่อนแรง ไม่มีตื่นมาปวดกลางคืน ไปพบแพทย์ที่คลินิกได้ยารับประทาน อาการดีขึ้นบ้าง ผู้ป่วยมีไอแห้ง ๆ ร่วมด้วย น้ำหนักลด 5 กก. ใน 3 เดือน
- 3 วัน PTA อาการปวดเป็นมากขึ้น ปวดจนทำงานขายของที่บ้านไม่ได้ ไปคลินิกได้ยารักษาตามอาการ ไม่ดีขึ้น
- 1 วัน PTA ซึมลง ถามตอบช้าลง ญาติจึงพามา รพ. (8/2021)

Case 4: A 42-year-old Thai man

- Past Hx: herpea zoster at left T4 dermatome, 2 years ago
- Family and personal Hx:
  - Smoking 20 pack-year and social drinking
  - Heterosexual man with multiple partners
  - No IVDU
  - No drug or food allergy
  - Other family members are healthy

Physical examination

- **V/S** :**BT 38.3 C**, HR 130/min, RR 24/min, BP 110/70 mmHg
- **GA** : A male, looked cachexia, **generalized hyperpigmented papules/macules**
- **HEENT** : mild pale conjunctivae, anicteric sclera, normal eye ground, **oral thrush positive**
- **LN** : **multiple small cervical LN enlargement (posterior and anterior)**
- **Heart :** no active precordium, no heaving, no thrill, regular rhythm, normal S1, S2, no murmur
- **Lung:** symmetrical chest movement, equal BS, no adventitious sound
- **Abdomen**: no distension, normoactive BS, soft, no tenderness, no hepatosplenomegaly

Neurological examination

- **Slowly respond to command**
- E4V5M6
- No facial palsy, no dysarthria
- Motor power at least grade V all
- Sensory intact all
- DTR 2 + all
- BBK negative both
- Clonus negative
- Stiff neck negative
- No papilledema

Lab Investigations

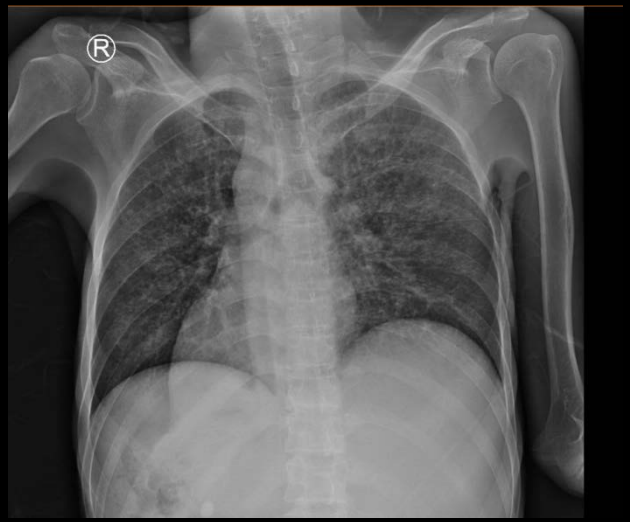
- CBC: WBC 8220 cells/µL, PMN 80%, Mono 10%, Eo 3%, Ba
  Hct 29.4%, Hb 9.2 mg%, MCV 84.3 fL, RDW 14.5%
  Platelet 138,000 cells/µL

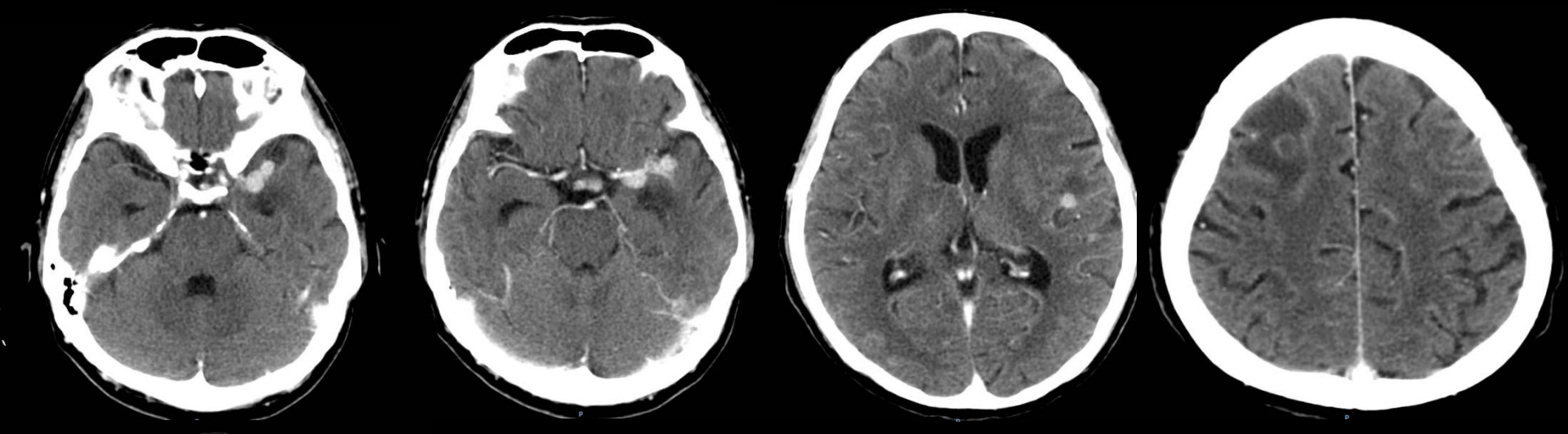
- Chem: Cr 1.02 mg/dL, BUN 16 mg/dL, Na 129 mmol/L,
  K 3.4 mmol/L, HCO_3 28 mmol/L

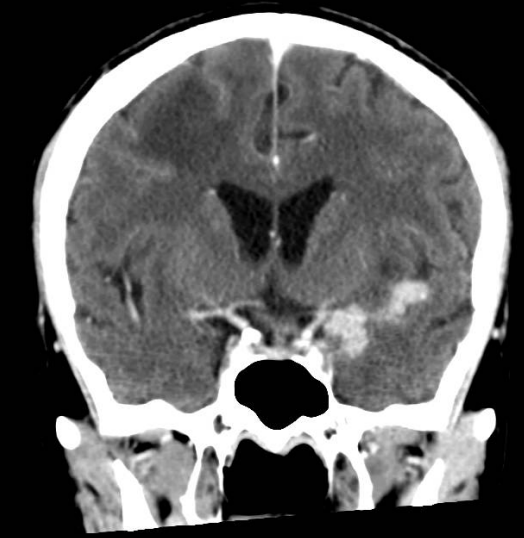
- LFT: TB 0.33, DB 1.77, SGOT 45 U/L, SGPT 52 U/L, ALP 389 U/L

- UA: normal

- Anti HIV positive

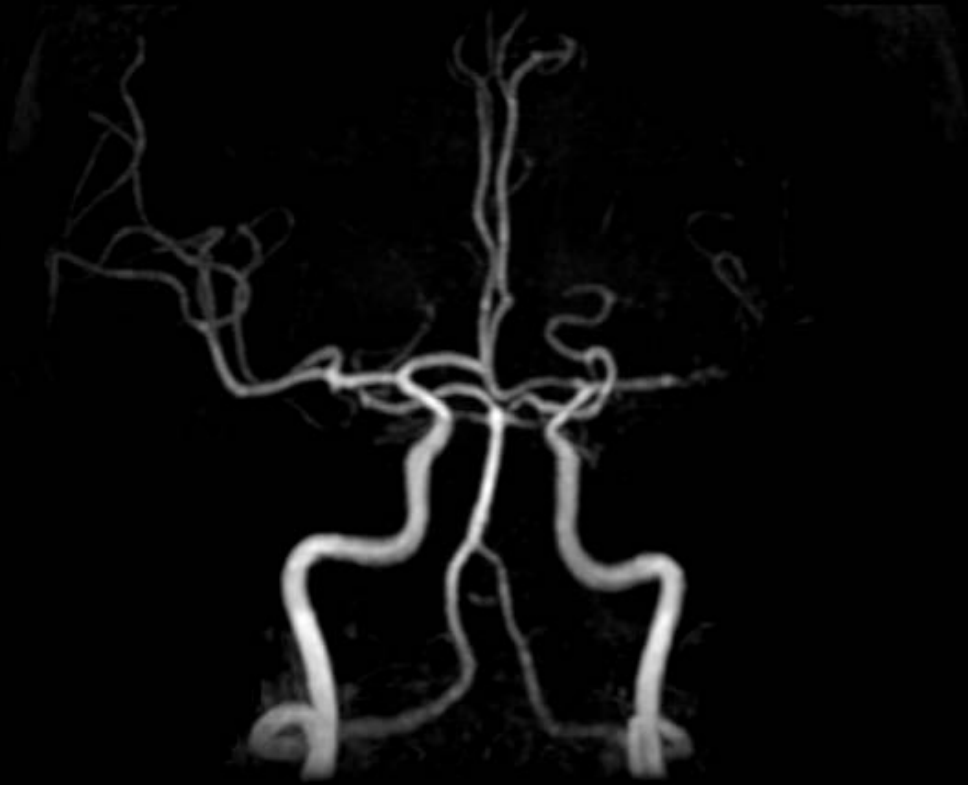






- CSF profile
- Open pressure 25 cm. of CSF
- WBC 108 cells/mm^3
- PMN 30%, lymphocytes 70%
- Protein 105 mg/dL
- Glucose 26 mg/L
- Plasma glucose 110 mg/dL

- CSF AFB negative
- CSF India ink: negative
- CSF and serum CrAg: negative



Cryptococcal meningitis

Subacute to chronic

Forms cystic accumulations in Virchow-Robin spaces, around the deep-penetrating blood vessels in the brain termed ***soap-bubble cysts or gelatinous pseudocyst***

Cryptococcoma

Diagnosis; India ink, Cryptococcal Ag, culture
Need screening

Tuberculous meningitis

Subacute to chronic

Basal arachnoiditis

Extensive damage of cerebral vessels, Stroke

Tuberculoma

Diagnosis; AFB, PCR for TB, culture, ADA (>20 U/L/min)

	CD4	Onset	AOC	Seizure	Headache	Fever	Focal def.	Cranial neuropathy
Cryptococcal meningitis	<50	days	+ to +++	+	+++	+to +++	+	+
Tuberculous meningitis	<200	days to weeks	++to +++	+	+++	+++	+ to ++	++to +++

+=uncommon (0–<30%). ++=sometimes (30–<60%). +++=often (>60%)

Tan et al. Lancet Neurol, 2012
Chatterjee et al. Neurol India, 2015
Siddiqi et al. Mandell, Douglas, and Bennett's Principles and Practice of Infectious Diseases, 2020

Diagnostic Value of Cerebrospinal Fluid Adenosine Deaminase Determination

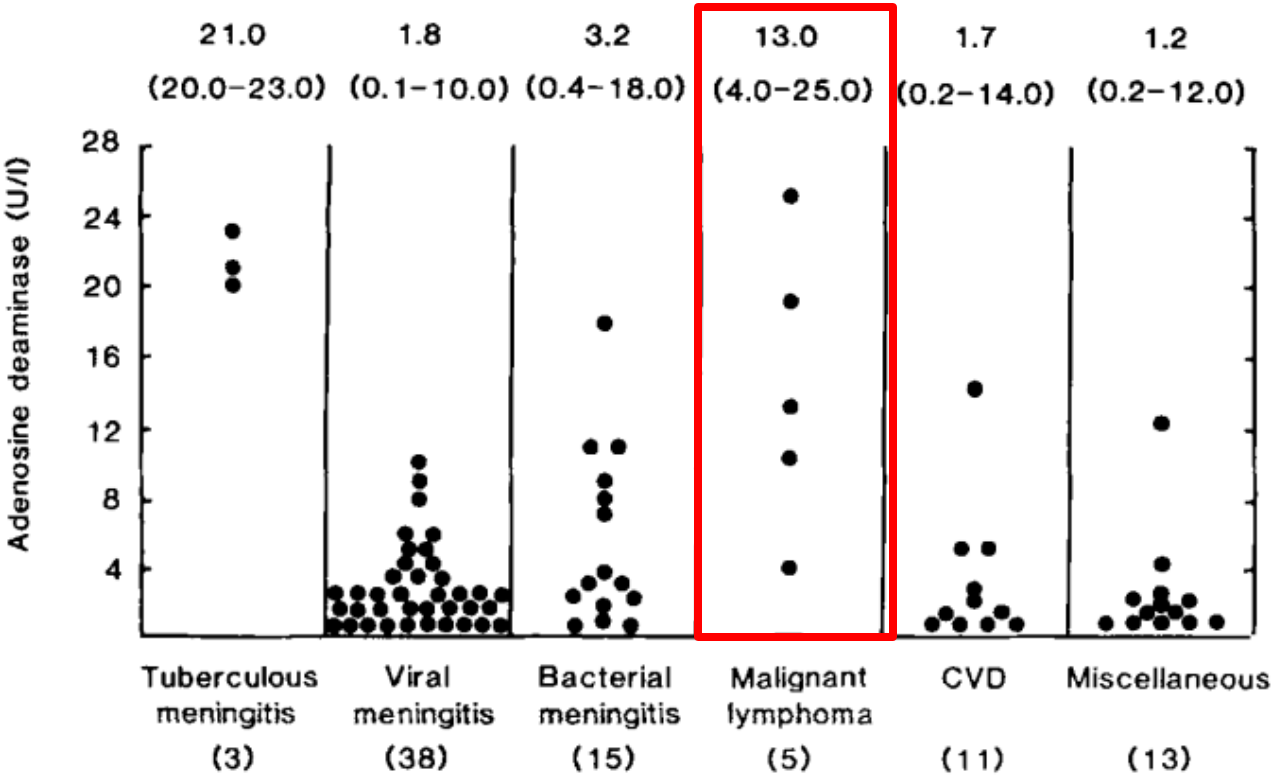


Fig. 1. Adenosine deaminase activity in cerebrospinal fluid of patients with different diseases in the central nervous system. Median (range), and the number of patients (below). CVD = cerebrovascular disease.

Pettersson T et al. Scand J Infect Dis, 1991

TB Treatment Duration

ระยะเวลาการรักษาวัณโรค	
กรณีทั่วไป	▪ รักษา 6 เดือน ▪ รักษาผู้ป่วยวัณโรคนอกปอดเช่นเดียวกับวัณโรคปอด
▪ กรณีที่มีการตอบสนองช้า ▪ มีโพรงฝีขนาดใหญ่ในปอด ▪ ตรวจย้อมเสมหะยังพบเชื้อ และผลเพาะเชื้อวัณโรคในเดือนที่ 2 หรือ 3 หลังการรักษายังให้ผลบวก โดยผลทดสอบความไวไม่พบเชื้อดื้อยา	รักษา 9 เดือน
วัณโรคกระดูกและข้อ/วัณโรคระบบประสาท	รักษา 12 เดือน

ART in 4-8 weeks

Thai Guideline, 2022

Other Considerations in TB Management

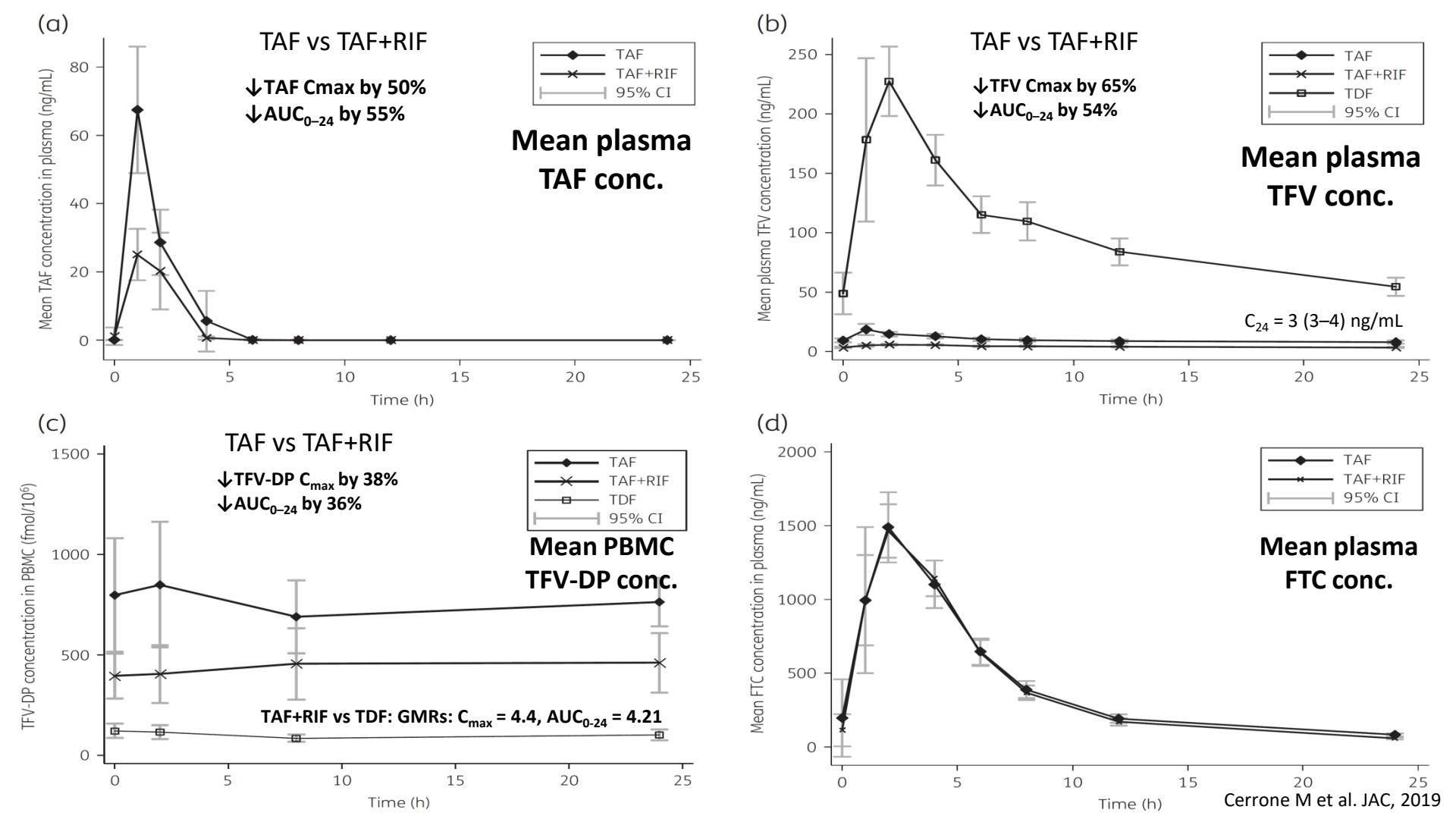
- Adjunctive corticosteroid improves survival for patients with HIV-related TB involving the CNS **(AI).**
- Dexamethasone has been used for CNS disease with the following dosing schedule: 0.3–0.4 mg/kg/day for 2–4 weeks, then taper by 0.1 mg/kg per week until 0.1 mg/kg, then 4 mg per day and taper by 1 mg/week; total duration of 12 weeks.
- Despite the potential of drug–drug interactions, a rifamycin remains the most potent TB drug and should remain as part of the TB regimen, unless a rifamycin-resistant isolate is detected or the patient has a severe adverse effect that is likely due to the rifamycin (please refer to the Dosing Recommendations for Anti-TB Drugs table (above) and the Tuberculosis/HIV Coinfection section of the Adult and Adolescent Antiretroviral Guidelines for dosing recommendations involving concomitant use of rifampin or rifabutin and different ARV drugs).
- Intermittent rifamycin use can result in development of resistance in patients with HIV and is not recommended **(AI).**
- Paradoxical reaction that is not severe may be treated symptomatically **(CIII).**
- For moderately severe paradoxical reaction, use of corticosteroid may be considered. Taper over 4 weeks (or longer) based on clinical symptoms **(BIII).**

DHHS, 2022

INSTI and Rifamycins

Rifampin (RIF)	BIC	• BIC AUC ↓ 75%	**Contraindicated.**
	DTG	**RIF With DTG 50 mg BID Compared to DTG 50 mg BID alone** • DTG AUC ↓ 54% and C_{min} ↓ 72% **Rifampin With DTG 50 mg BID Compared to DTG 50 mg OD alone** • DTG AUC ↑ 33% and C_{min} ↑ 22%	• Use DTG 50 mg twice daily (instead of DTG 50 mg once daily) in patients without suspected or documented INSTI-associated resistance mutations. • Consider an alternative to rifampin, such as rifabutin, in patients with certain suspected or documented INSTI-associated resistance mutations.
	RAL	**RAL 400 mg** • RAL AUC ↓ 40% and C_{min} ↓ 61% **RIF with RAL 800 mg BID Compared to RAL 400 mg BID alone** • RAL AUC ↑ 27% and C_{min} ↓ 53%	• Use RAL 800 mg twice daily instead of 400 mg twice daily. • **Do not coadminister** RAL 1,200 mg once daily with rifampin. • Monitor closely for virologic response or consider using rifabutin as an alternative rifamycin.
Rifapentine (RPT)	BIC, EVG/c	Significant ↓ BIC, EVG, and COBI expected	**Do not coadminister.**
	DTG	**Rifapentine 900 mg Once Weekly** • DTG AUC ↓ 26% and C_{min} ↓ 47%	• With once-weekly rifapentine, DTG 50 mg OD may be used in patients with viral suppression on daily DTG. Monitor for virologic efficacy. • **Do not coadminister** in patients **who require BID DTG**. • **Do not coadminister** DTG with **OD rifapentine**.
	RAL	**Rifapentine 900 mg Once Weekly** • RAL AUC ↑ 71% and C_{min} ↓ 12% **Rifapentine 600 mg Once Daily** • RAL C_{min} ↓ 41%; **No effect on VL suppression rate***	For once-weekly rifapentine and RAL 400 mg twice daily, no dose adjustment is needed. **Do not coadminister** with once-daily rifapentine.

DHHS, 2022. *Dooley KE et al. Lancet, 2020



Cerrone M et al. JAC, 2019

TAF, TDF and Rifamycins

Rifampin	**TAF**	**TAF with RIF vs. TDF Alone** TFV-DP AUC ↑ 4.2-fold **TAF with RIF vs. TAF Alone** TAF AUC ↓ 55% TFV-DP AUC ↓ 36% **TAF 25 mg BID with RIF vs.TAF OD Alone** TAF AUC ↓ 14% TFV-DP AUC ↓ 24%	• **Do not coadminister unless benefits outweigh risks.** • Intracellular TFV-DP levels are higher when TAF is coadministered with rifampin than when TDF is administered alone, but clinical outcomes have not been studied. • If coadministered, monitor virologic response. • CYP3A4*22 rs35599367 was associated with higher plasma tenofovir alafenamide
	TDF	↔ AUC TFV	• No dose adjustment needed.
Rifapentine	**TAF**	↓ TAF possible	• **Do not coadminister unless benefits outweigh risks.** • If coadministered, monitor for virologic response.
	TDF	↔ AUC TFV	• No dose adjustment needed.

DHHS, 2023
Cerrone M et al. JAC, 2019

A 49-year-old HIV-infected man presented with *dyspnea* on exertion for 1 week and non massive *hemoptysis* for 5 days

- CC: เหนื่อยง่ายเวลาออกแรง มา 1 สัปดาห์

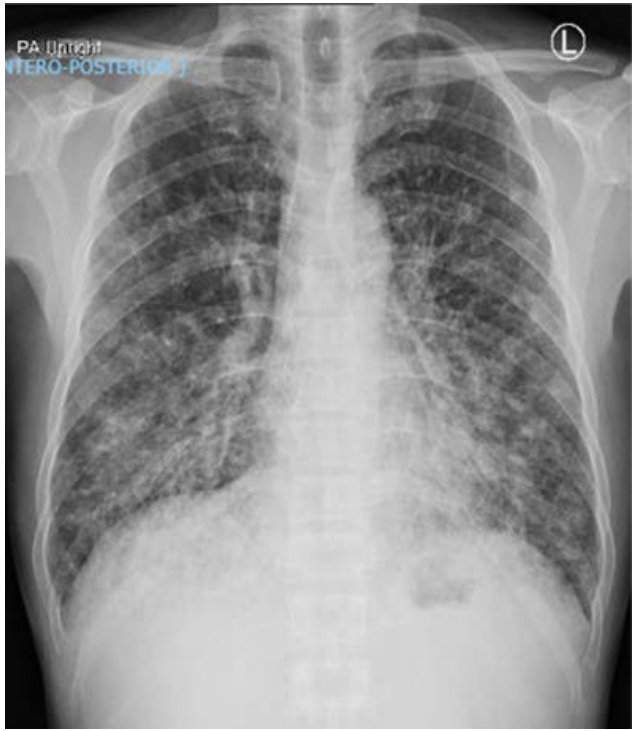
- PI: 1 สัปดาห์ PTA เหนื่อยง่ายเวลาออกแรงทำงานเข็นผักในตลาด
- 5 วัน PTA เหนื่อยมากขึ้นกว่าเดิม เดินขึ้นสะพานลอยแล้วเหนื่อยต้องหยุดพัก เหนื่อยจนต้องหยุดงานเข็นผัก ไอมากขึ้น มีเสมหะสีขาวปนเลือดบางครั้งเลือดเป็นก้อนขนาดประมาณเหรียญบาท ไอมากตอนกลางคืน มีไข้ต่ำๆ ตอนกลางคืนทุกคืน ไม่มีคลื่นไส้อาเจียน ไม่ปวดท้อง ไม่มีท้องเสียถ่ายเหลว ไม่มีถ่ายดำถ่ายเป็นเลือด ไม่มีกลืนลำบากหรือกลืนเจ็บ น้ำหนักลด 10 กิโลกรัมใน 1 สัปดาห์ อาการเหนื่อยเป็นมากขึ้นเรื่อย ๆ จึงมารพ

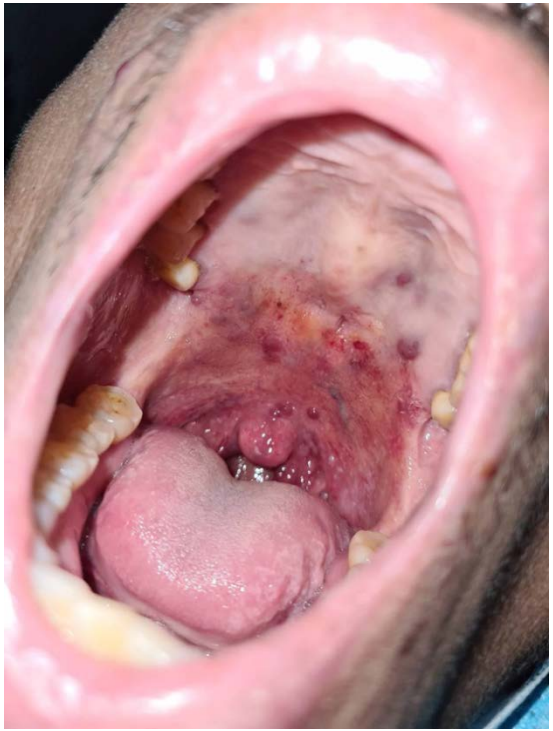
- PH: HIV infection, วินิจฉัยเมื่อ 3 ปีก่อน ไม่ได้รักษา ทราบเพราะภรรยาป่วยและเสียชีวิต

Physical examination

- **V/S** :BT 37.3 C, HR 120/min, RR 24/min, BP 110/70 mmHg, SpO2 100%
- **GA** : A male, looked cachexia
- **HEENT** : mild pale conjunctivae, anicteric sclera, normal eye ground, no OC, no OHL
- **LN** : no lymphadenpathy
- **Heart :** no active precordium, no heaving, no thrill, regular rhythm, normal S1, S2, no murmur
- **Lung:** symmetrical chest movement, equal BS, no adventitious sound
- **Abdomen**: no distension, normoactive BS, soft, no tenderness, no hepatosplenomegaly

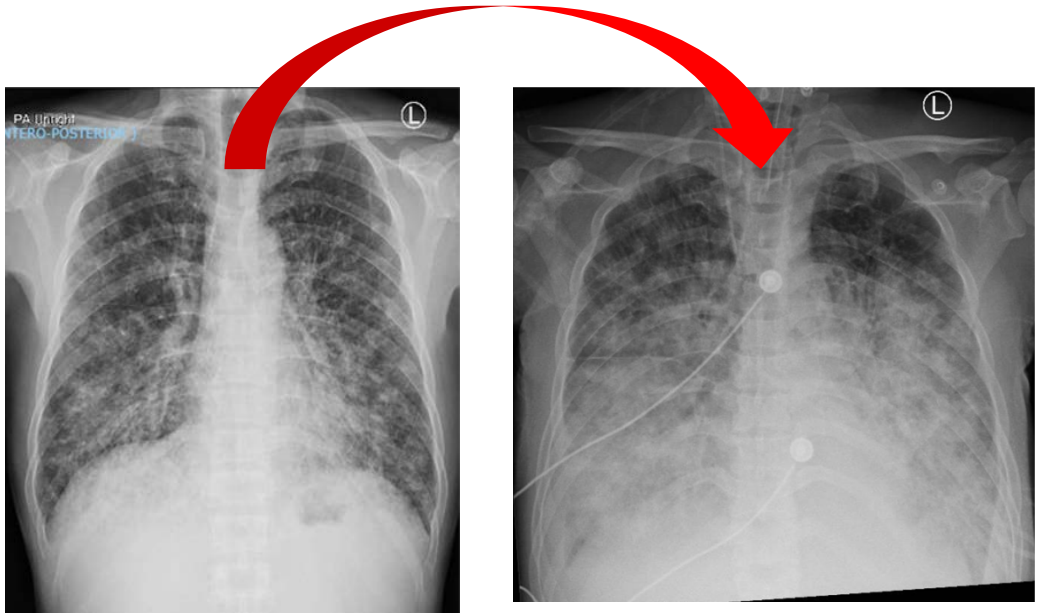
A 49-year-old HIV-infected man presented with *dyspnea* on exertion for 1 week and non massive *hemoptysis* for 5 days

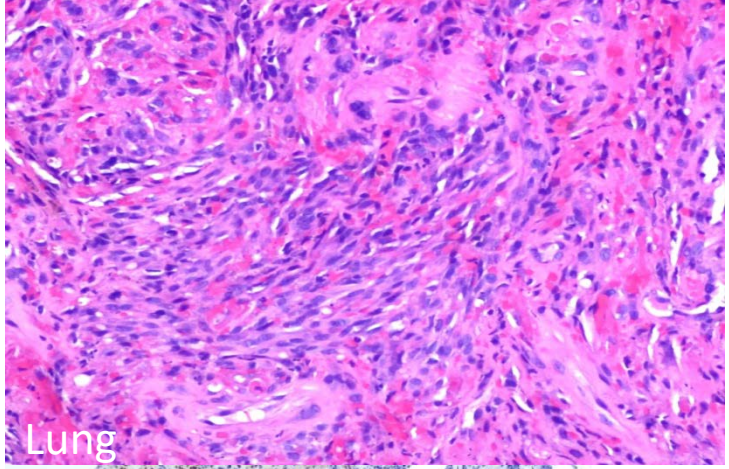


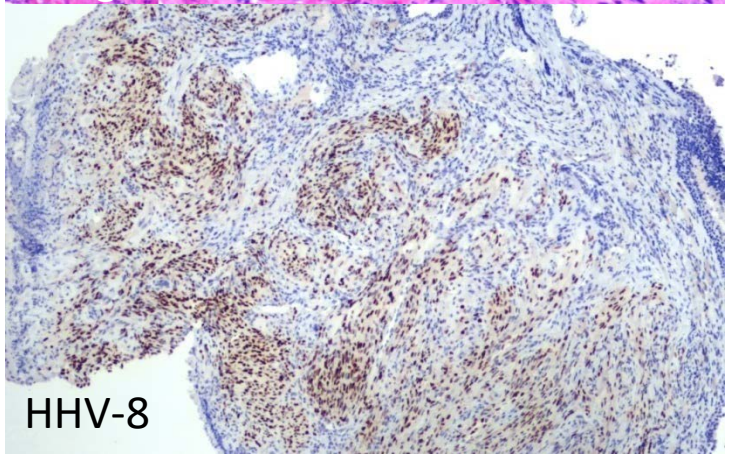


PCP was diagnosed: TMP/SMX+Dex

A 49-year-old HIV-infected man presented with *dyspnea* on exertion for 1 week and non massive *hemoptysis* for 5 days







lung biopsy: spindle cells with hemorrhage background, CD34 and HHV-8 antigen positive

Pneumocystis Carinii Pneumonia*
Rare Cause of Hemoptysis

D. A. Neville Mascarenhas, M.B.B.S., M.D.;†
Viswanath P. Vasudevan, M.D., F.C.C.P.;‡
and Kamini P. Vaidya, M.D.§

Pneumocystis carinii **pneumonia is a frequent manifestation of the acquired immunodeficiency syndrome (AIDS). It commonly presents with nonproductive cough, fever, and dyspnea. We report this case of *P carinii* pneumonia presenting with hemoptysis, since to the best of our knowledge, hemoptysis has not been reported to be a presenting manifestation of *P carinii* pneumonia. Autopsy revealed multiple lung cavities.** ***(Chest 1991; 99:251-53)***

Bronchopulmonary Kaposi's sarcoma in 106 HIV-1 infected patients

International Journal of STD & AIDS 1998; 9: 518–525

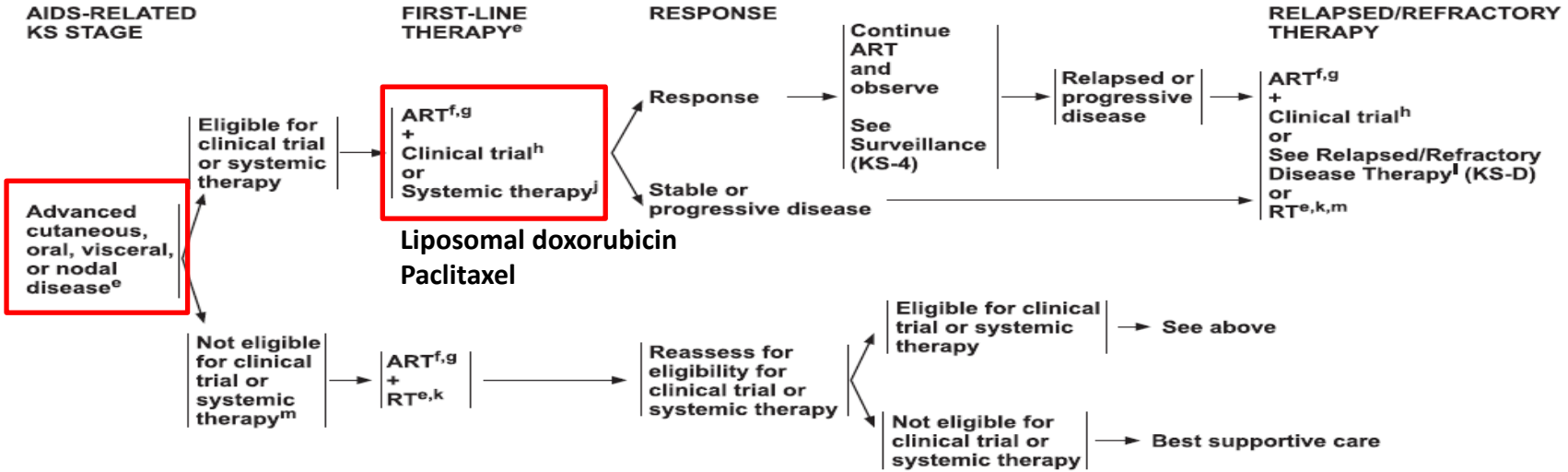
Frances B Hannon[1,3], Philippa J Easterbrook[3], Simon Padley[2], Fiona Boag[3], Ruth Goodall[3] and Robert H Phillips[1]

Patient characteristics	Localized disease *n*=30 (%)	Diffuse disease *n*=76 (%)
Median age in years (interquartile range)*	40 (34–45)	35 (31–41)
Median CD4 count at diagnosis ($\times 10^6$/l) (interquartile range)	17 (6–48)	15 (7–35)
Median duration of history of prior KS in weeks (interquartile range)	9.5 (5–17)	11.5 (8–18)
Prior cutaneous or visceral KS	28 (93%)	68 (91%)
Symptoms at diagnosis		
Cough	25 (89)	68 (93)
Dyspnoea	18 (64)	51 (70)
Pleuritic pain	16 (22)	4 (14)
Haemoptysis	4 (14)	9 (12)
Wheezing	1 (4)	9 (12)
Prior opportunistic infections		
Pneumocystis carinii pneumonia	16 (53)	44 (58)
Mycobacterium avium intracellulare	2 (7)	8 (11)
Cytomegalovirus	4 (13)	13 (17)
Oesophageal candidiasis		
Recurrent bacterial infections	2 (7)	9 (12)
Concurrent pulmonary pathology†	7 (23)	13 (17)
Other neoplastic disease	2 (7)	4 (5)

Pulmonary KS and Mucocutaneous Involvement

- ***Thoracic disease*** is found in about ***45% of patients with cutaneous AIDS-related KS***
- ***KS without mucocutaneous*** involvement in patients with AIDS ranges from ***0% to 15.3%***
- Visceral KS should be suspected in cutaneous ***KS patients with pulmonary or GI symptoms***

Aboulafia DM. Chest, 2000
Restrepo CS et al. Chest, 2006



Avoid corticosteroid

[e]See Principles and Goals of Therapy (KS-B).
[f]Initiation of ART may result in IRIS within 3–6 months; IRIS is characterized by marked lesional swelling, increased tenderness, and peripheral edema. However, ART should not be delayed or discontinued unless life-threatening IRIS develops. Reconstitution of immune function is important for obtaining and maintaining control or remission of KS.
[g]Glucocorticoids in any formulation should be avoided due to their association with KS progression. However, in cases of life-threatening conditions including IRIS, their use may be considered.
[h]See clinical trials.gov.
[j]See Systemic Therapy (KS-D).
[k]See Principles of Radiation Therapy (KS-E).
[m]Systemic therapy is preferred over radiation therapy as first-line therapy and relapsed/refractory therapy for disseminated disease whenever systemic therapy is feasible considering performance status and comorbidities.

Point of Learning

- Case 1: alternative regimen for cryptococcal meningitis
- Case 2: management of mpox
- Case 3: management of HCV infection, simplified protocol
- Case 4: classic findings of TB meningitis, DDI of ART and RIF
- Case 5: clinical presentation of KS