

Clinical Case: a man with abdominal pain from Ghana

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Disclosures

- I have received grants and personal fees from Gilead Sciences.
- Personal fees for advisory and educational presentations from ViiV healthcare, MSD and Janssen

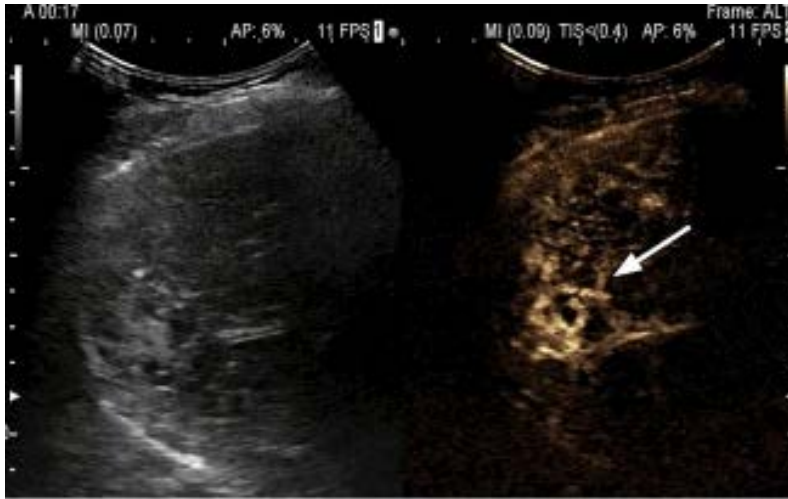
Clinical Case

- 39 y-o male from Ghana
- HIV+ since 2014 heterosexual contact
 - Malaria 2013
 - AZT + 3TC + EFV since 2014 until 2015
 - Trimethoprim-sulfamethoxazole allergy
 - Recurrent biliary colic episodes
- In Spain since Sept 2015. First visit in clinic in Jun 16th.
 - Thoracic herpes zoster
 - CD4+: 10 cells/mm³, VL: 3,700,000 cp/ml
 - Started ART: TDF/FTC + DRV/c

- **June 2016:** admitted to emergency due to 1 month right upper quadrant abdominal pain
 - Acute cholecystitis lithiasis
 - ECO: vesicular abscess due to gall stone impacted in Hartmann's pouch
 - Cholecystectomy and 6 day ertapenem IV
 - Pathology: gangrenous cholecystitis

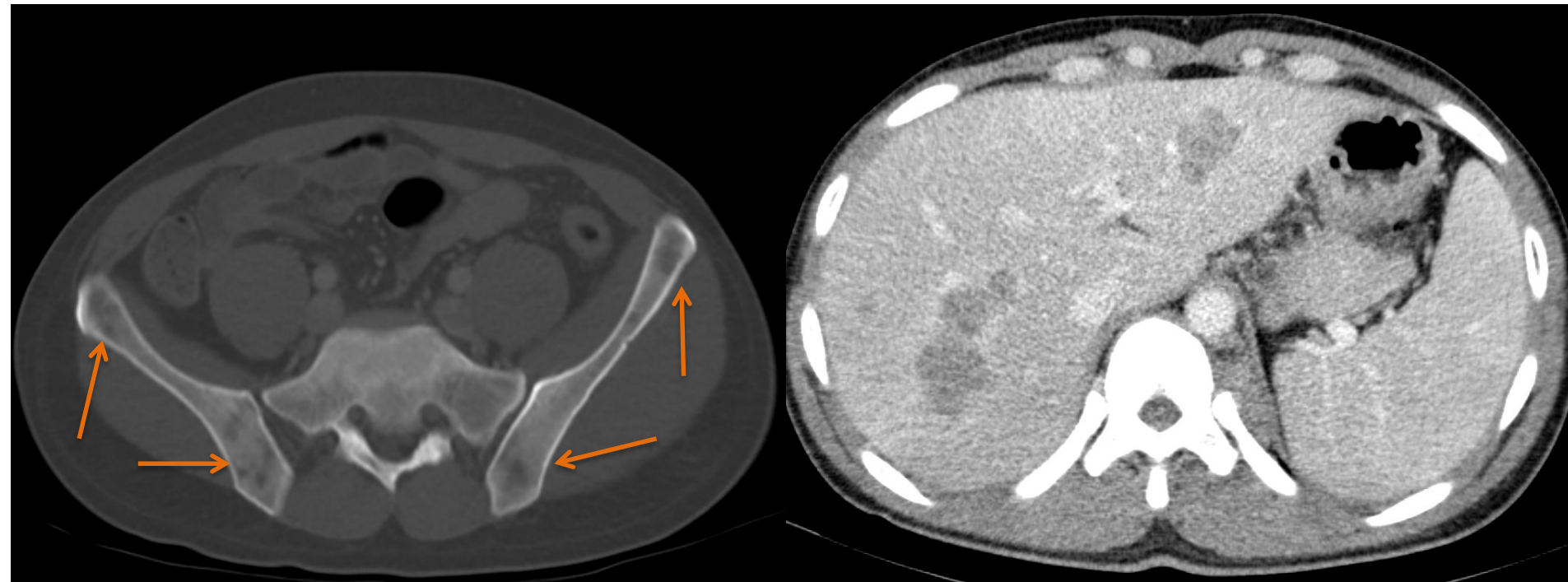
- **Aug 16:** malaise, fever (37.5°C), nocturnal sweating
- Intermittent intense lower back pain irradiated to testes and focalized in iliac crest
- Anorexia and 10 kg loss since June
 - Physical exam: no signs apart from spleen enlargement
 - Hb 9.9 g/dL, Ht: 30.6%, Plat: $339 \times 10^3/\mu\text{L}$, Leuc: $5.900 \times 10^3/\mu\text{L}$
 - AST 45 UI/L, ALT 69 UI/L, GGT 297UI/L, LDH 160 UI/L, Prot: 11.7 gr/L
 - CRP 37.3 mg/L, ESR: 84 mm/h

Abdomen US (Aug 16th)



- Homogeneous splenomegaly (15 cm)
- Contrast-enhanced ultrasonography (CEUS) with SonoVue[®]
 - Enhanced nodule in arterial and venous phase (Segment VI)

Abdomen CT scan (Aug 16th)

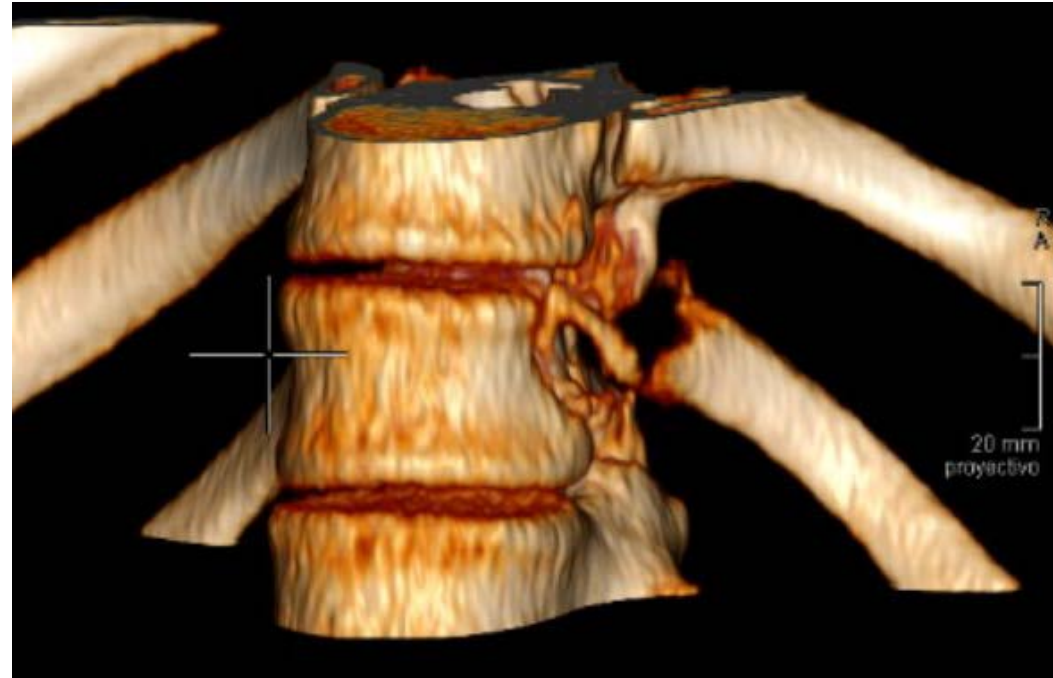


Homogeneous splenomegaly, appendicitis, hepatic abscesses, lytic lesions in iliac bone

Q1. What is your first diagnosis?

- A. Infectious complication from previous surgery
- B. Solid tumour with bone & liver metastasis
- C. Lymphoproliferative disorder
- D. *Mycobacterium tuberculosis*
- E. Something else

New CT evaluation with an expert



Q2. What is your presumptive diagnosis now?

- A. Disseminated fungus infection
- B. Solid tumour with bone & liver metastasis
- C. Non-Hodgkin Lymphoma
- D. Disseminated *Mycobacterium tuberculosis*
- E. *Mycobacterium avium-intracellulare*
- F. Something else

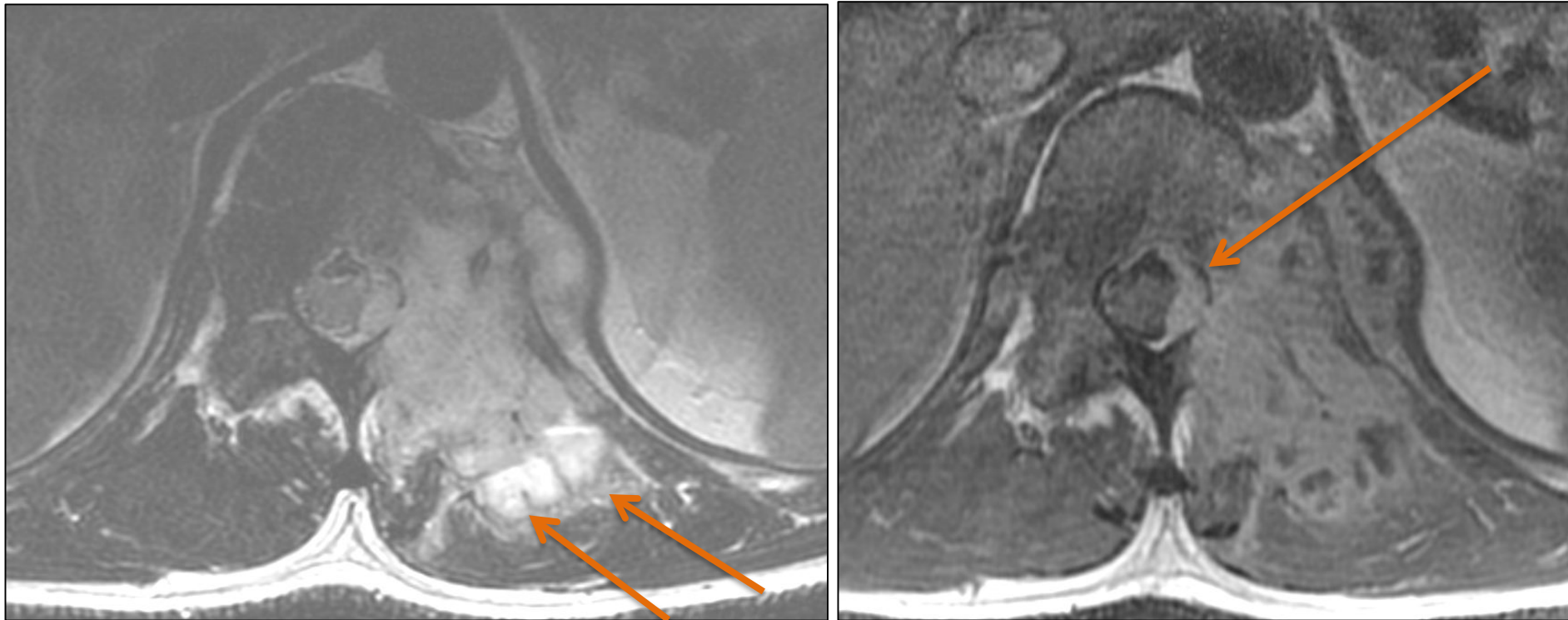
Sep 2016

- T^a 38.3°C, BP: 98/51 mmHg
- Multiple Lymph nodes < 1cm: axillary, inguinal and submandibular
- Blood tests
 - Hb 8.9 g/dL, Ht: 27.8%, Plat: 351 x10³/μL, Leuc: 5.900 x10³/μL
 - Prothrombin A. 69 %, AST 20 UI/L, ALT 21 UI/L, GGT 89 UI/L, LDH 150 UI/L, Prot: 11.6 g/L, CRP 95.54 mg/L, procalcitonin: 0.15 ng/ml
 - Polyclonal hypergamma-globulin (γ fraction: 44.9%)

Sep 2016

- Microbiology
 - Bacterial blood & urine cultures negative
 - *Mycobacteria spp* blood & urine cultures negative
 - Serology: Toxo IgG +ve, Syphilis –ve, HBs Ag, HBc Ac, and Hbs Ac –ve, HCV –ve, *Leishmania* –ve, *Brucella* –ve, *Borrelia* –ve. *R. conorii* +ve 1/320, *Bartonella henselae* & *quintana* IgG +ves (1/64), *Schistosoma* –ve
 - PCR CMV –ve, PCR HIV 54 cp/mL
 - Malaria: microscopic, rapid antigen and PCR negatives
 - PPD –ve, Quantiferon-TB Gold negative

MRI lumbar and thoracic spine



Soft tissue mass invading intradural space & multiple abscesses in paravertebral muscles

Q3. What other tests would you perform?

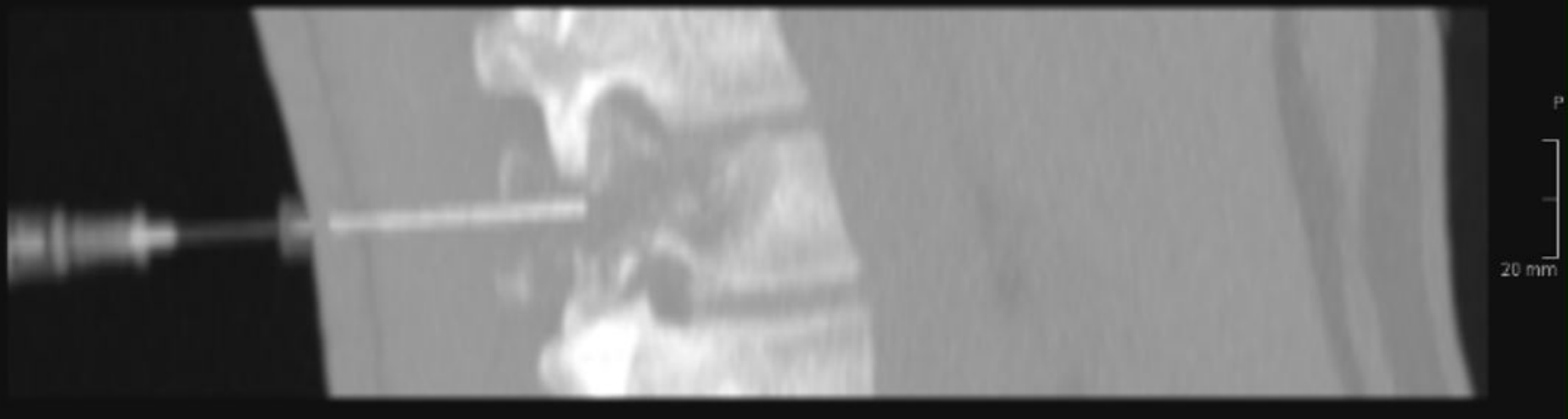
- A. CT-guided fine-needle aspiration
- B. Bone-biopsy
- C. Bone marrow aspiration
- D. CT-PET-scan
- E. Something else

Q4. What would be your empiric treatment?

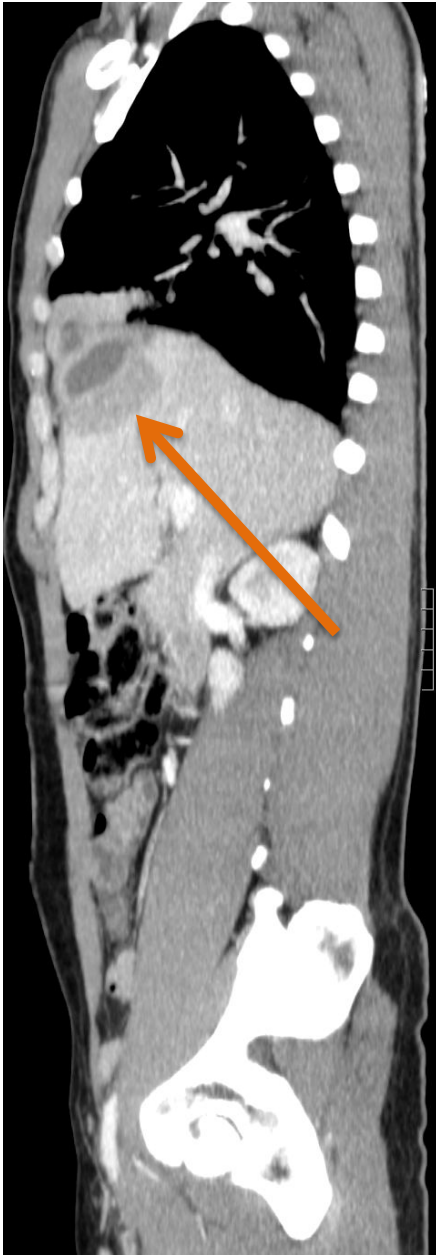
- A. Amphotericin B liposomal
- B. Rifampin + isoniazid + pyrazinamide + ethambutol
- C. Rifampin + isoniazid + pyrazinamide + ethambutol + clarithromycin
- D. A + B
- E. A + B + C
- F. Something else

- Bone marrow aspirate & biopsy: normal
 - No parasite, acid-fast bacillus [AFB] –ve
 - No granuloma
 - XPERT-MTB/RIF –ve
 - PCR *Leishmania* –ve
- Serology
 - Endemic fungus serology: blastomyces, coccidioides, paracoccidioides and histoplasma negatives
- ART: changed to TDF/FTC + dolutegravir 50 mg bid

CT-guided fine-needle aspiration of the left paraspinal fluid collection and bone biopsy



- Connective tissue with acute and chronic inflammatory infiltrate and non-necrotic granulomatous reaction
- Gram stain –ve, PAS and methenamine stain –ve, Ziehl-Neelsen –ve
- X-pert MTR negative
- Positive fluorochrome acid fast stain result 2+ bacilli



Hepatic abscess drainage: epithelioid granuloma

Left paraspinal fluid collection culture:

Mycobacterium simiae

Treatment

- Clarithromycin 500 mg bid
- Moxifloxacin 400 mg QD
- Ethambutol 1.6 g/day
- Cycloserine 250 mg bid

ATS/IDSA statement: diagnosis, treatment, and prevention of non-tuberculous mycobacterial diseases

TABLE 3. CLINICAL AND MICROBIOLOGIC CRITERIA FOR DIAGNOSING NONTUBERCULOUS MYCOBACTERIAL LUNG DISEASE*

Clinical (both required)

1. Pulmonary symptoms, nodular or cavitary opacities on chest radiograph, or a high-resolution computed tomography scan that shows multifocal bronchiectasis with multiple small nodules (A, I)*
- and
2. Appropriate exclusion of other diagnoses (A, I)

Microbiologic

1. Positive culture results from at least two separate expectorated sputum samples (A, II). If the results from (1) are nondiagnostic, consider repeat sputum AFB smears and cultures (C, III).
- or
2. Positive culture result from at least one bronchial wash or lavage (C, III)
- or
3. Transbronchial or other lung biopsy with mycobacterial histopathologic features (granulomatous inflammation or AFB) and positive culture for NTM or biopsy showing mycobacterial histopathologic features (granulomatous inflammation or AFB) and one or more sputum or bronchial washings that are culture positive for NTM (A, II)
 4. Expert consultation should be obtained when NTM are recovered that are either infrequently encountered or that usually represent environmental contamination (C, III)
 5. Patients who are suspected of having NTM lung disease but do not meet the diagnostic criteria should be followed until the diagnosis is firmly established or excluded (C, III)
 6. Making the diagnosis of NTM lung disease does not, *per se*, necessitate the institution of therapy, which is a decision based on potential risks and benefits of therapy for individual patients (C, III)

Mycobacterium simiae

- Nontuberculous mycobacterium (NTM)
- Endemic to the south western US, the Middle East (Israel) and Cuba
- Potential to cause clinical disease in immunocompromised
- Most commonly causes pulmonary disease. Bone and GU disease also described
- Disseminated disease specially in HIV+ and CD4 count < 50 cells/mm³
- Most NTM are innately resistant to TB drugs. It is imperative proper identification of NTMs
- Lack of correlation between sensitivity in vitro and clinical response *in vivo*



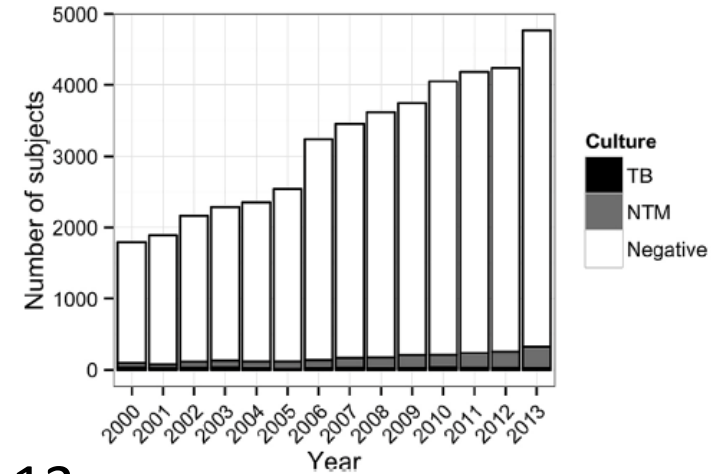
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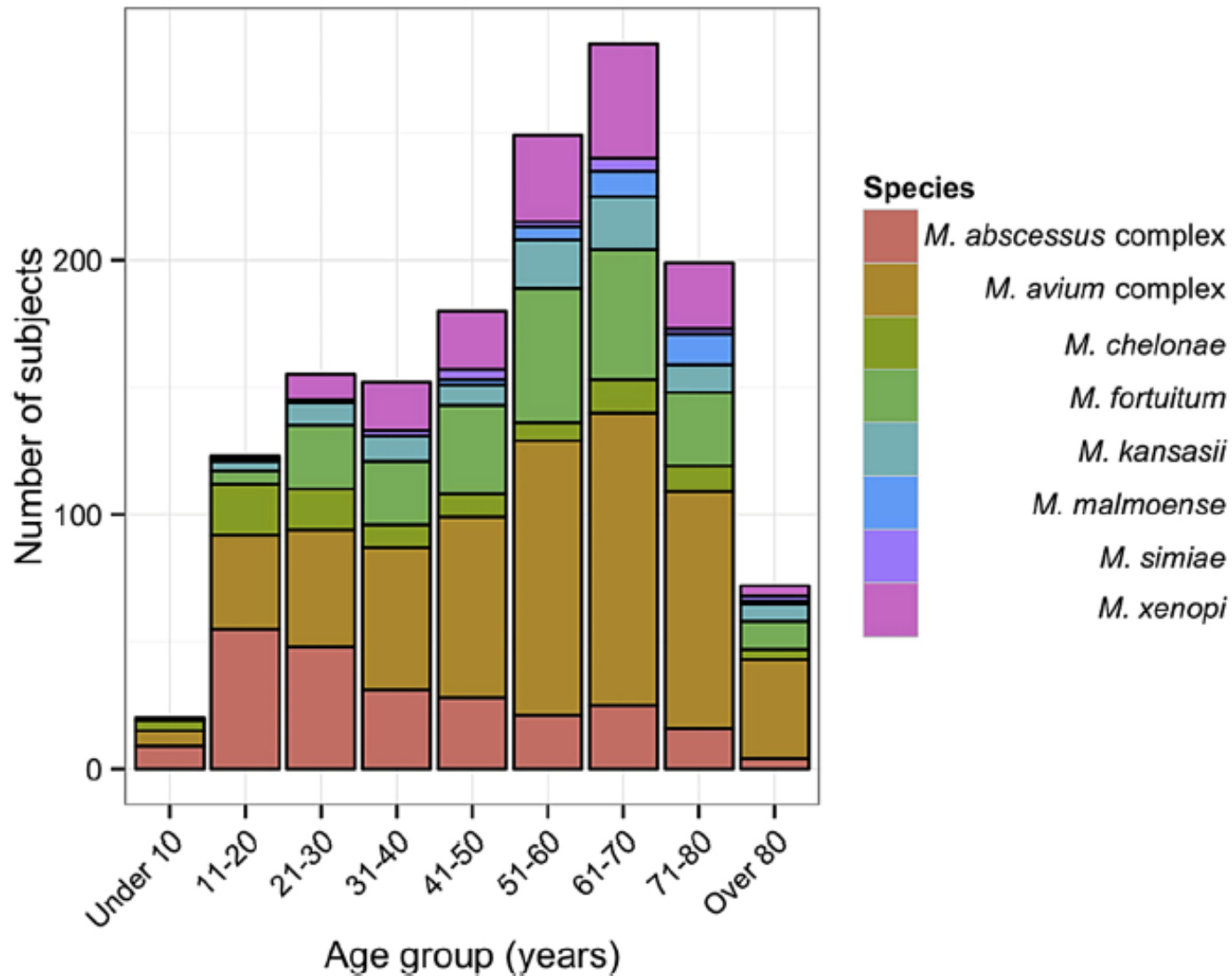
www.elsevierhealth.com/journals/jinf



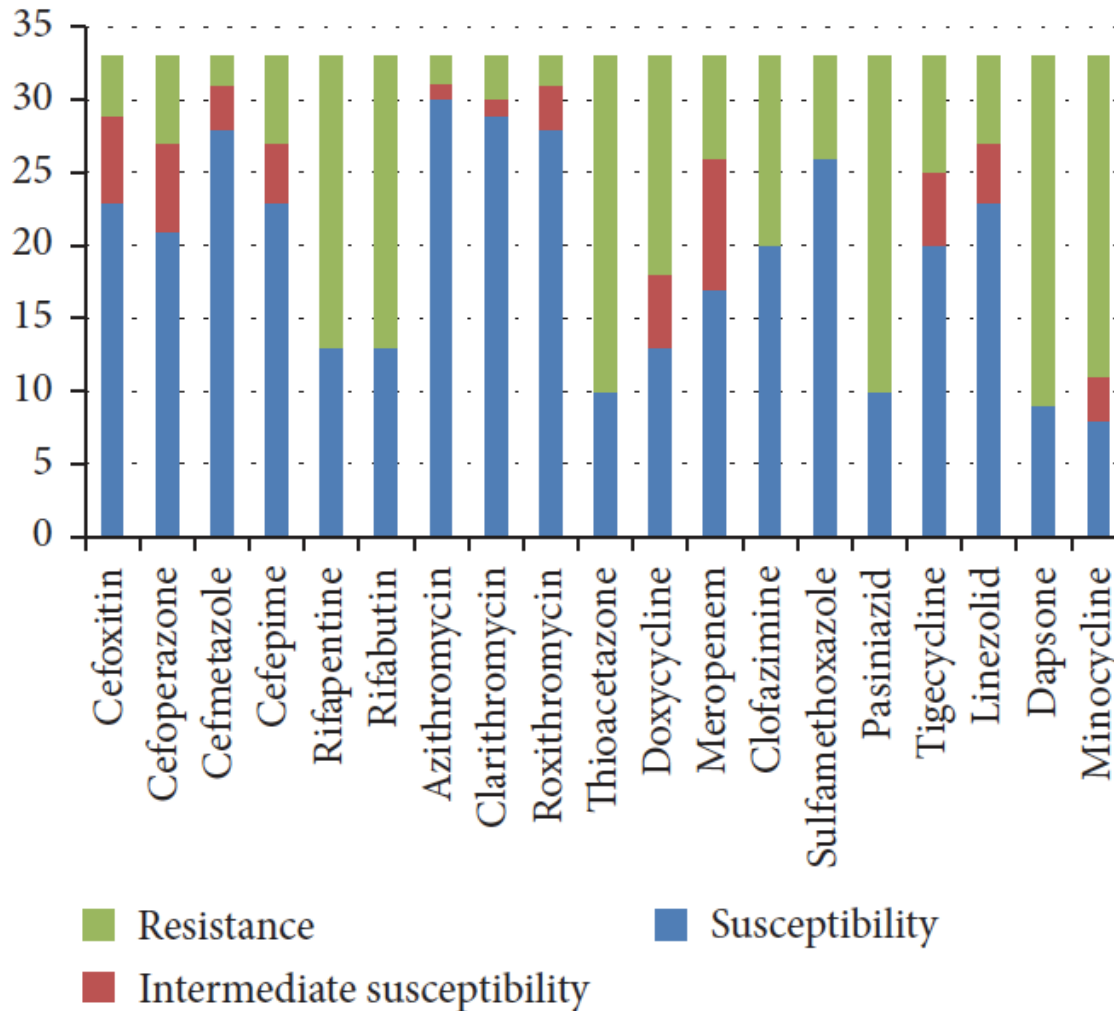
The antimicrobial susceptibility of non-tuberculous mycobacteria

- 109,311 samples (31,758 subjects) over 13 years
- 5960 samples (1209 subjects) isolated NTM
- Most common: *Mycobacterium avium* complex and *Mycobacterium abscessus*
- The highest resistance to antimicrobials was found in *M. abscessus* and *M. simiae*
- *M. simiae* were only sensitive to clofazimine, amikacin and cycloserine





Sensitivity profiles of 33 slow growing *Mycobacteria*



Summary

- Prevalence of clinical NTM increasing worldwide
- Immune suppression (HIV and chemotherapy) and underlying lung diseases (e.g. cystic fibrosis) are contributing factors
- Most NTM are innately resistant to TB drugs
- Complex regimens. Macrolide-based regimen. Clarythromycin, quinolones, ethambutol, clofazimine and amino-glucosides are essential drugs.

Miss C - Case Presentation

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Disclosures

- Travel Grants to Glasgow HIV 2016 and CROI Boston 2018 from Gilead Sciences Sarl

Miss C. R., 38 years

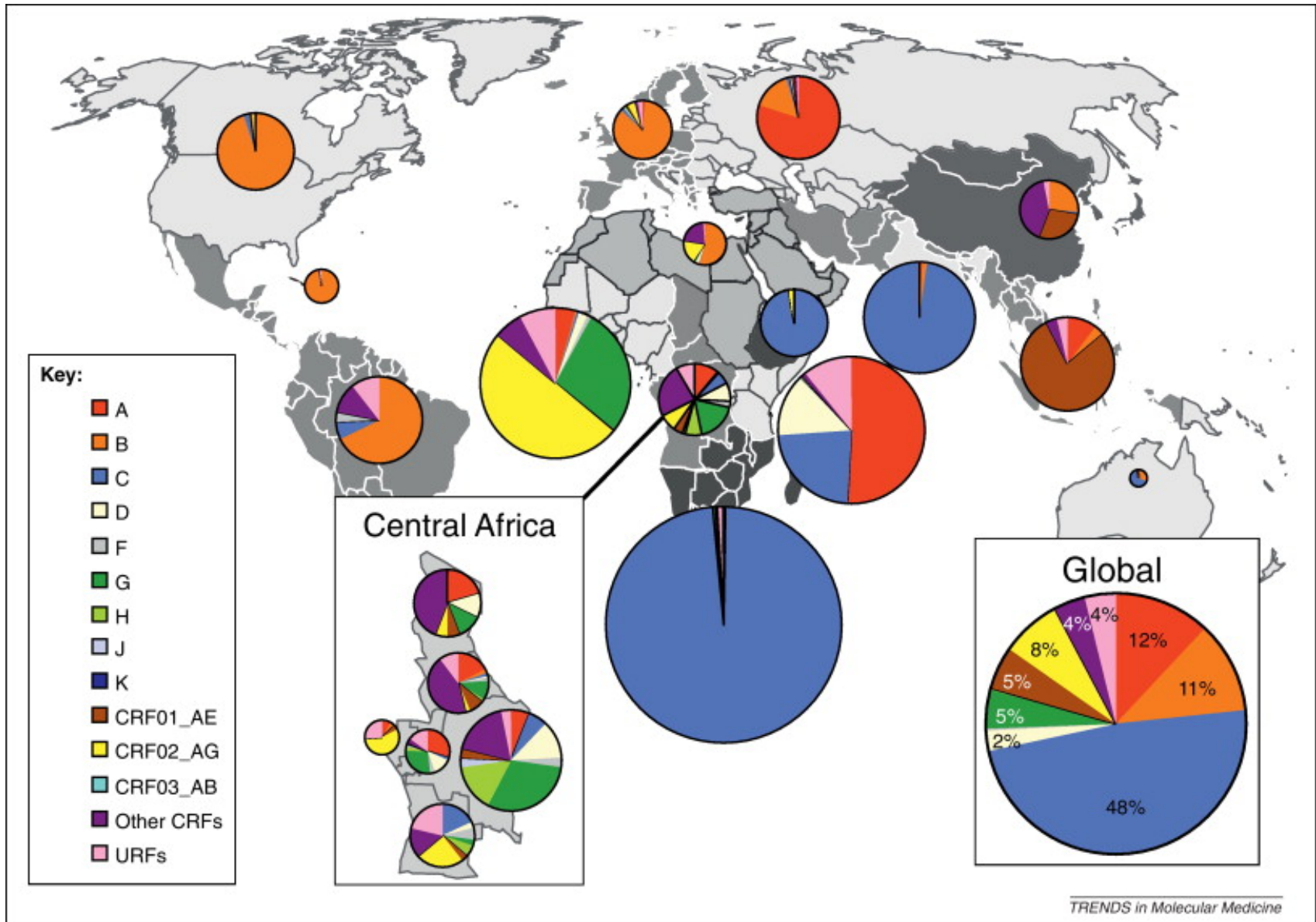
- Born in Cameroon
- 2000-2014 in USA
- From 2014 on as „sans-papiers“ („undocumented person“) in Switzerland
- 1997 PTB in Cameroon
- 2000 Lobectomy of the right upper lung lobe (indication not clear, performed in US)
- 2 induced abortions
- 2000 negative HIV test
- 2014 TST negative and sputum negative for TB (USA)

Symptoms 08/15

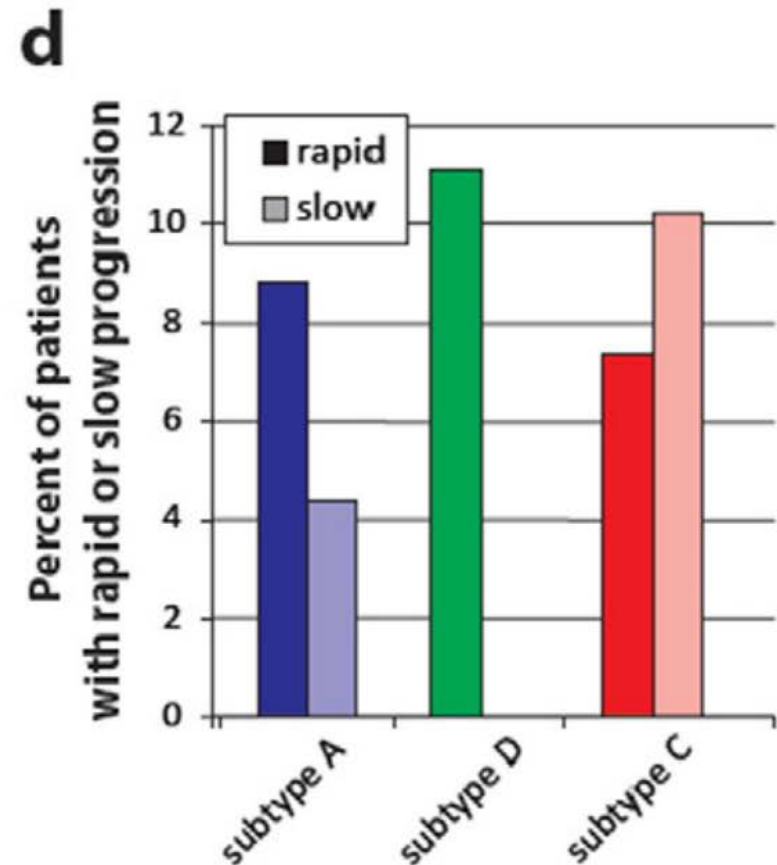
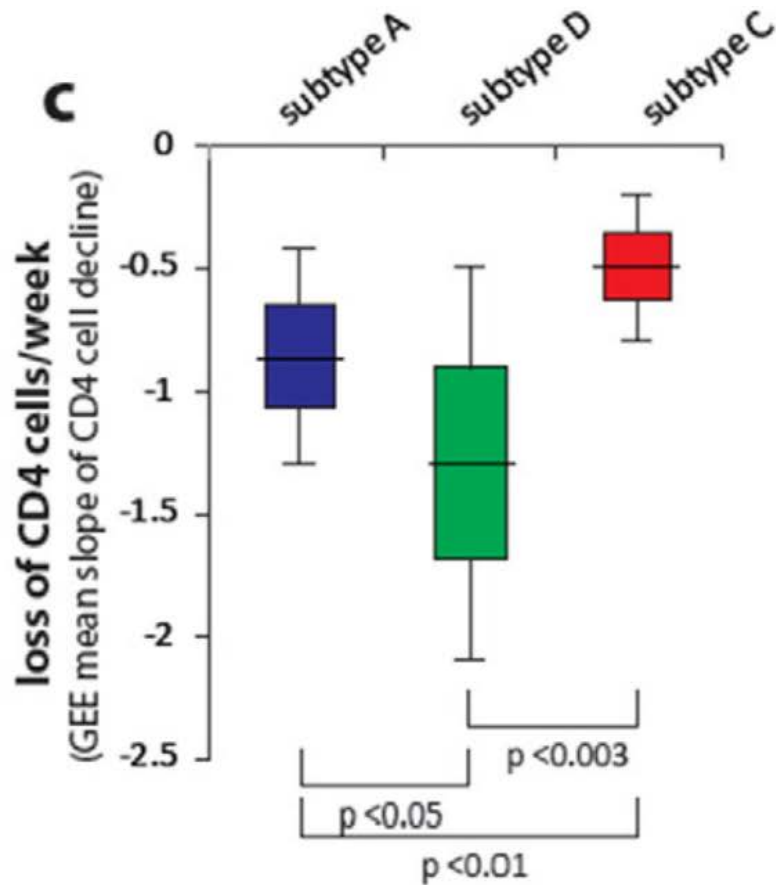
- Sore throat, cephalaea, nausea, vomiting
- 05.08.2015: „Bronchitis with bacterial superinfection“ → amoxicilline/clavulanate, prednison, Symbicort[®], pantoprazole
- 14.08.2015: „Bronchitis with asthmatic components“ → Ventolin[®] & paracetamol
- 25.08.2015: Voluntary HIV test: positive
- 27.08.2015: CD4-cells 186 (15%)
- 01.09.2015: Clade D, VL 3433 copies/mL
- GRT: No RT, no PI mutations, INI: 157Q (Low-level R for EVG and RAL)
- 04.09.2015: Oral candidiasis → fluconazole 50mg x 7d
- 3x sputum: negative for TB

Clade D – Infected in USA or Cameroon?

- Answers
 - A. Most probably in US
 - B. Most probably in Cameroon
 - C. Clade D is frequent in both, US and Cameroon



Clade D associated with rapid disease progression

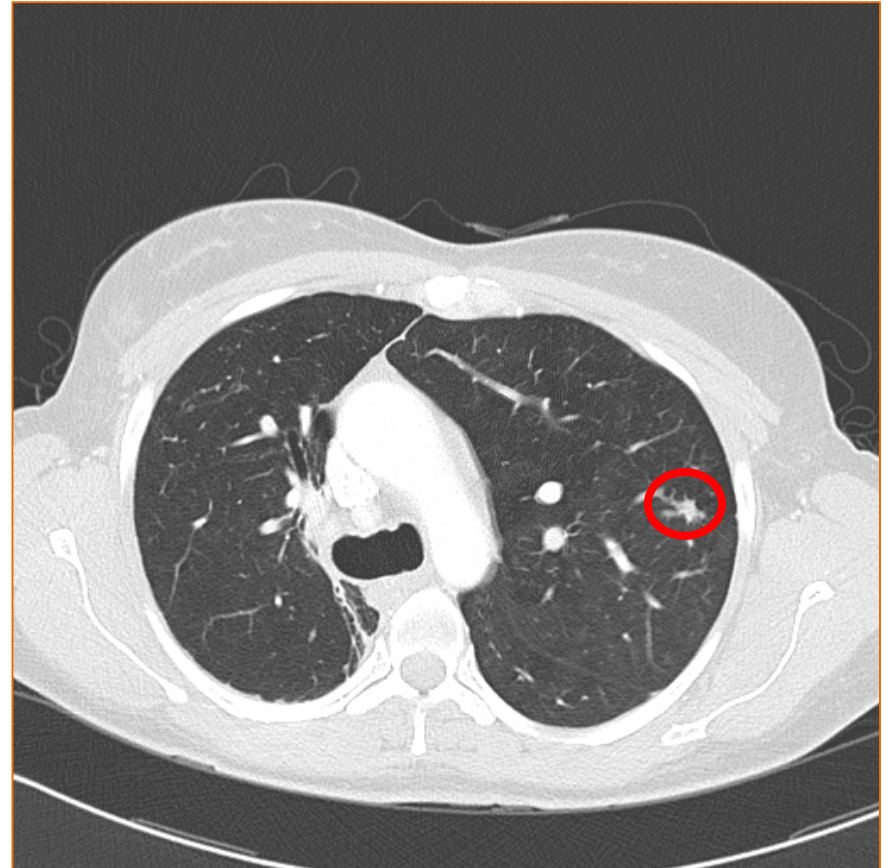
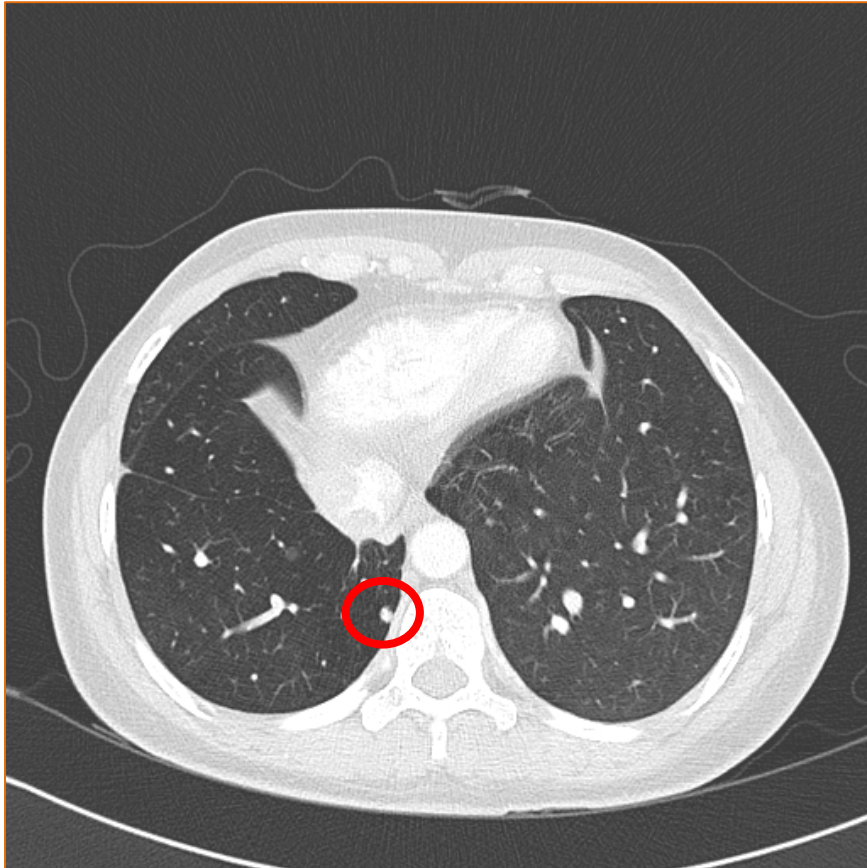


Initiation of ART

- 04.09.2015
 - Darunavir 800mg, ritonavir 100, emtricitabine/tenofovir 200/245
 - Cotrimoxazole®
- 21.09.2015
 - Has stopped Cotrimoxazole®
 - Feels „rather better“, still feeling of sore throat, no appetite
- 02.10.2015
 - Feels better, dyspnea during exercise
 - Wakes up „in panic“ at night

- 15.10.2015
 - Aggravation of dyspnea
 - Blood gas: normal; CXR: normal; 60kg; VL 61 copies/mL
- 21.10.2015
 - CT scan: 2 nodules (5-6mm) in the right upper lobe, one nodule (9mm) in the left upper lobe, bronchiectasia
 - Pneumologist:
 - Obstructive syndrome, probably asthma → Seretide®
 - If no fever, redo CT scan in 3 months
- 10/15-01/16
 - Pulmonary symptoms improve, CD4 241 (22%), VL <20 copies/mL

CT Scan



- CT-scan 29.01.2016:
 - 3 nodules unchanged, new nodule left lower lobe
- 03.02.2016: Bronchoscopy: normal
- 04.02.2016: Attends emergency department for dyspnea
 - CD4 453 c/μL; VL<20 c/mL
- 02.03.2016: growth of *Mycobacterium kansasii* in BAL



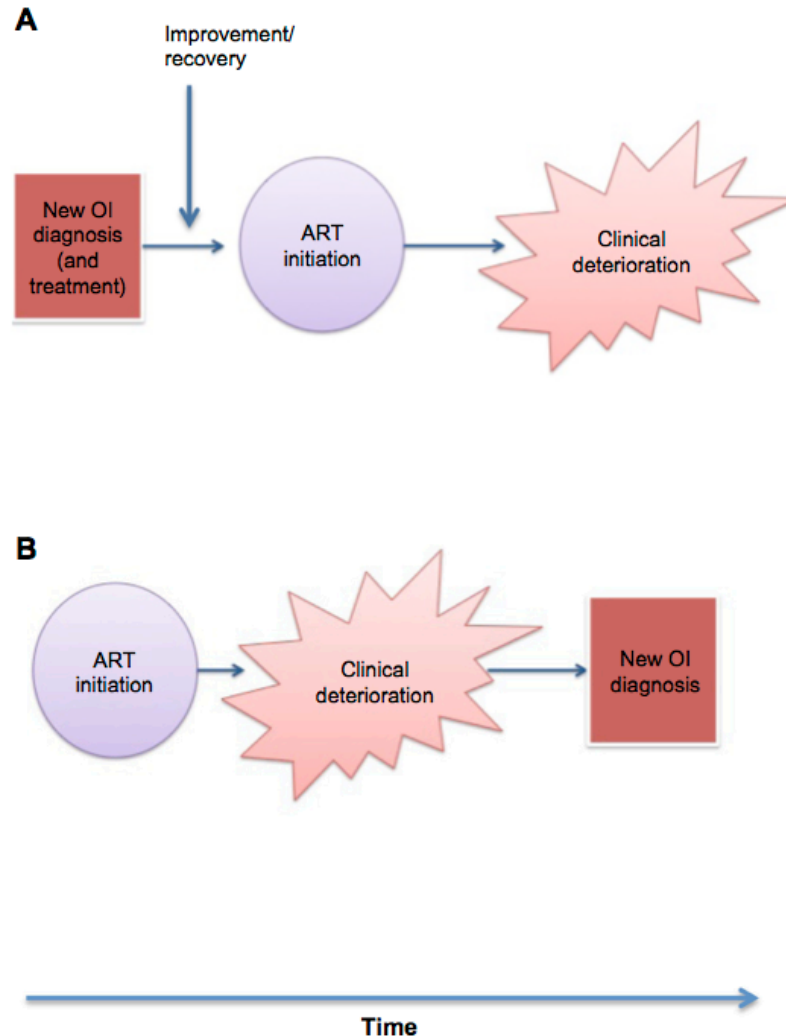
Is this IRIS?

A. Yes

B. No

Diagnosing IRIS

- **Paradoxical IRIS:** Clinical deterioration of a known OI
- **Unmasking IRIS:** New OI diagnosis
- **Criteria:**
 - Low pre-ART CD4 cell count (typically <100)
 - Good virological and immunological response to ART
 - Temporal association correlation
 - Median onset: 48 days (29-99)[§]
 - Exclusion of alternative diagnosis



Paradoxical IRIS:

Differential diagnosis:

- 1) ART/OI treatment toxicity
- 2) OI drug resistance
- 3) Poor adherence to treatment
- 4) Other new OI

ART-associated OI (possible scenarios):

- 1) Unmasking IRIS
- or
- 2) Missed OI diagnosis at presentation with clinical progression and presentation that is not unusual
- or
- 3) New OI due to persisting immune deficiency

Published cases of IRIS related to *M. kansasii*

- Naccache JM *et al.* 2002: pulmonary nodules
- Lawn SD 2005: acute respiratory failure
- Despotovic A *et al.* 2016: pulmonary nodules
- Lemoine M *et al.* 2015: lymph-adenopathy in a kidney transplant recipient (non-HIV)
- Kapoor V *et al.* 2018: granulomatous interstitial nephritis in disseminated *M. kansasii* infection
- Review on NTM IRIS: SD Lawn, LG Bekker, RF Miller, *Lancet Inf Dis* 2005

Naccache JM *et al.*, *Respiration*. 2002;69(3):283-5

Lawn SD, *J Infect*. 2005 Nov;51(4):339-40

Despotovic A *et al.*, *Int J Infect Dis*. 2016 Jan;42:40-42

Lemoine M *et al.*, *Am J Transplant*. 2015 Dec;15(12):3255-8

Kapoor V *et al.*, *BMJ Case Rep*. 2018 Feb 23;2018. pii: bcr-2017-222149

Lawn SD *et al.*, *Lancet Infect Dis*. 2005 Jun;5(6):361-73

Pulmonary *M. kansasii* Infection - 1

- Slowly growing NTM (>7 d per colony)
- Second most common NTM in lung infections (6th in disseminated NTM)
- Found in tap water, pools, fish ponds, sea water
- Reporting of geographic clusters (Texas in USA; Wales in UK, Poland in Europe)
- Host:
 - +/- immune deficiency
 - Chronic pulmonary disease (COPD, bronchiectasis, silicosis, CF, post-PTB)

Pulmonary *M. kansasii* Infection - 2

- „Most pathogenic NTM. Most isolates represent clinical disease“¹
- Symptomes²:
 - Cough (91%)
 - Sputum (85%)
 - Weight loss (53%)
 - Dyspnea (51%)
 - Thoracic pain (34%)
 - Hemoptysis (32%)
 - Fever/night sweats (17%)
- CT scan: 90% cavernous, 10% nodular/bronchiectasis (typically in HIV)
- Extrapulmonary (1-9%): lymphadenopathy, skin, etc.

1) Johnston JC *et al.*, *Microbiol Spectr.* 2017 Jan;5(1)

2) Blanc P *et al.*, *PLoS One.* 2016 Dec 13;11(12):e0168290 (16 patients with *M. kansasii* infection)

M. kansasii - Diagnosis

- Thoracic Society/Infectious Disease Society of America (ATS/IDSA 2007 for diagnosis of **NTM**):
 - Positive cultures:
 - ≥ 2 Sputa
 - 1 BAL
 - 1 positive Sputum and suggestive histology
- AND
 - Abnormal CXT or CT scan
- AND
 - Exclusion alternative diagnoses
- Very strict criteria → exclusion of contamination
- Criteria may be too strict for *M. kansasii* (some authors: „in *M. kansasii* any positive culture represents disease“^(\$))

Therapy of *M. kansasii*

- **American Thoracic Society Guidelines (2007):**

- *„A regimen of daily isoniazid (300 mg/d), rifampin (600 mg/d), and ethambutol (15 mg/kg/d). Patients should be treated until culture negative on therapy for 1 year.“*

British Thoracic Society Guidelines, October 2017

Continuation Miss R. C.

- Treatment recommendation lung infection board:
 - Rifampicin 600mg, isoniazid 300mg, ethambutol 15mg/kg
 - Ophthalmologic exam (ethambutol)
 - Follow-up CT in 3 months
 - Follow-up BAL in 3-6 months
 - Resistance testing for rifampicin

How to continue ART?

Interactions:

- Do Not Coadminister
 ■ Potential Interaction
 ▲ Potential Weak Interaction
 ◆ No Interaction Expected
 ⚡ No Clear Data
○ Do Not Coadminister
 □ Potential Interaction
 ▲ Potential Weak Interaction
 ◆ No Interaction Expected
 ⚡ No Clear Data

Results Key

	Darunavir	Emtricitabine (FTC)	Ritonavir	Tenofovir-DF
Ethambutol	◆	◆	◆	◆
Isoniazid	◆	◆	◆	◆
Rifampicin	●	◆	●	◆

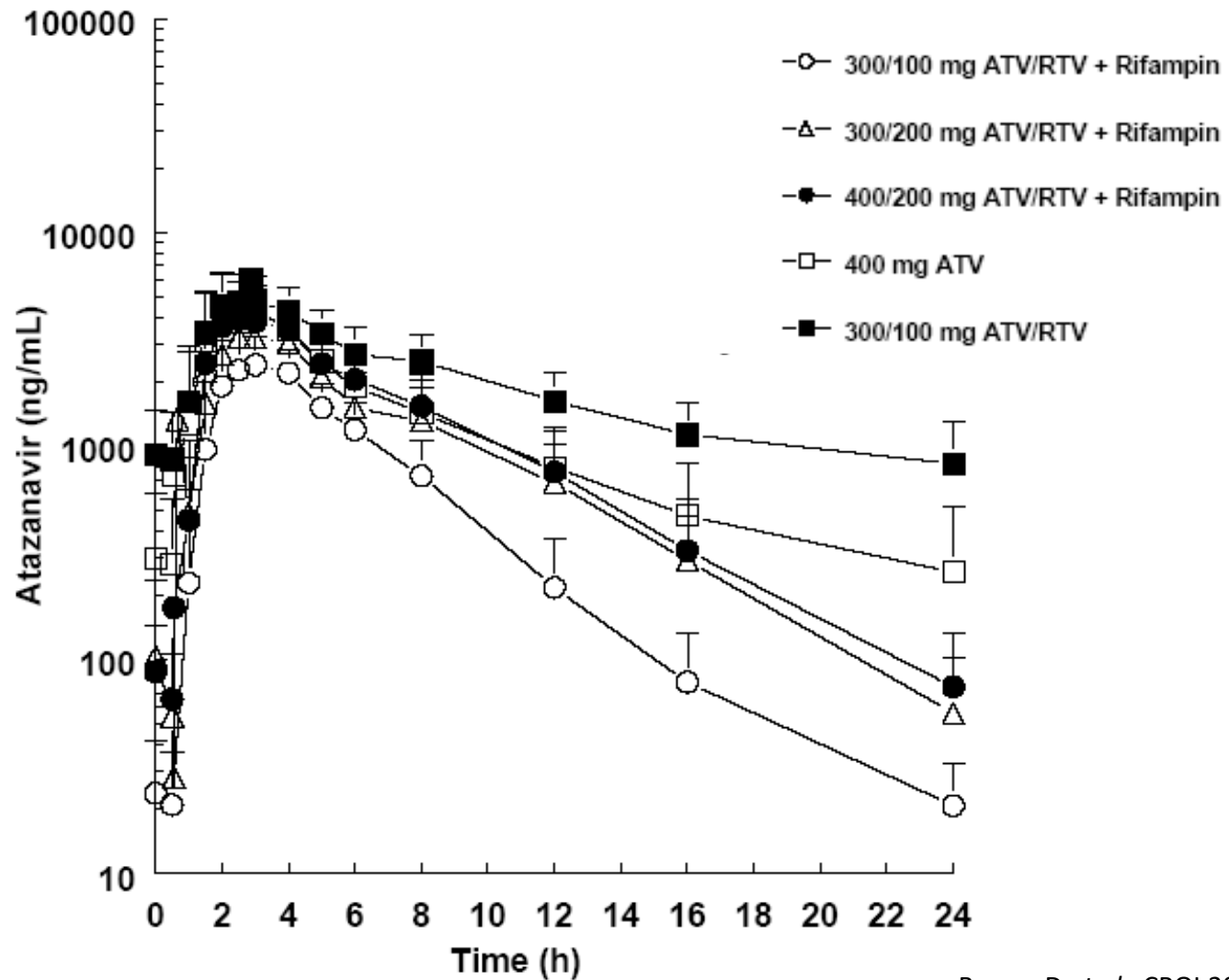
Reminder:

- Current regimen: emtricitabine/tenofovir, darunavir, ritonavir
- GRT: no RT, no PI mutations, INSTI: 157Q (LL resistance EVG und RAL)

How would you continue with ART?

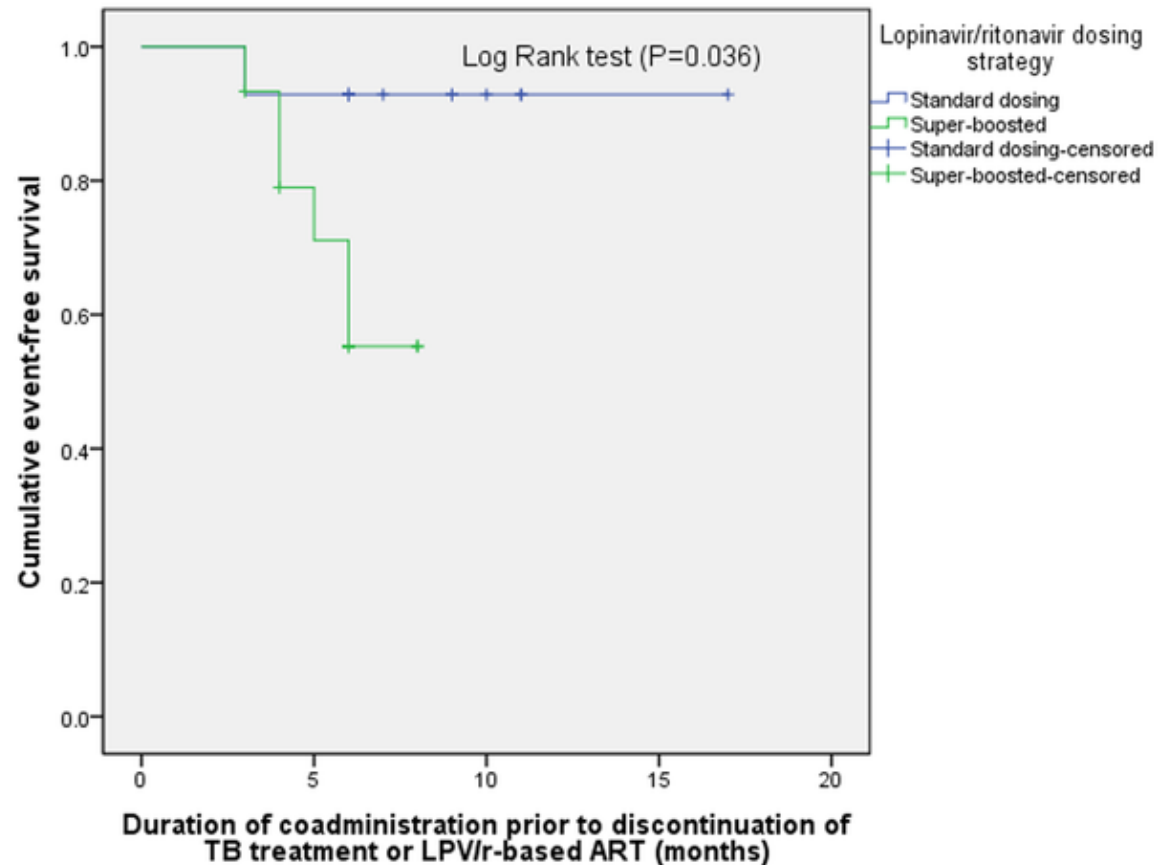
- A. Continue unchanged ART regimen
- B. Use super-boosted ritonavir (emtricitabine/tenofovir, darunavir, ritonavir 400mg)
- C. Change from darunavir/ritonavir to efavirenz
- D. Change from darunavir/ritonavir to dolutegravir
- E. Continue ART-regimen unchanged and use rifabutin instead of rifampicin

Option A: Continue ART unchanged



Option B: Super-boosted ritonavir

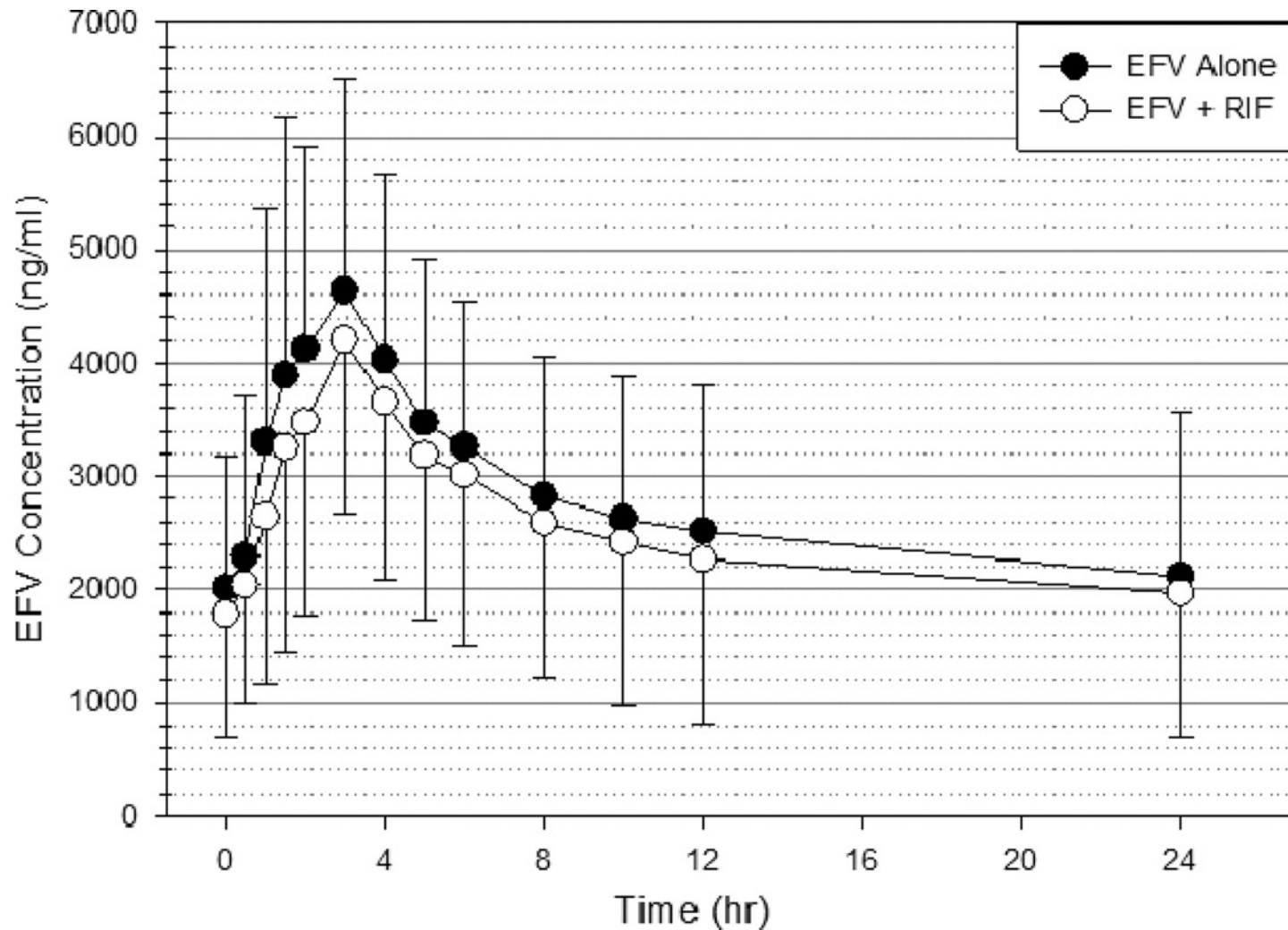
- Recommended approach, i.e. for resource-limited settings¹
- Retrospective study²
 - 15 LPV/RTV (400/400), 14 LPV/RTV (400/100)
 - Super-boosting associated to:
 - Higher rates of elevated transaminases
 - Higher rates of diarrhea
 - Higher rates of treatment discontinuation
 - No difference in viral suppression



1) Lawn SD *et al.*, *BMC Med.* 2013 Dec 2;11:253

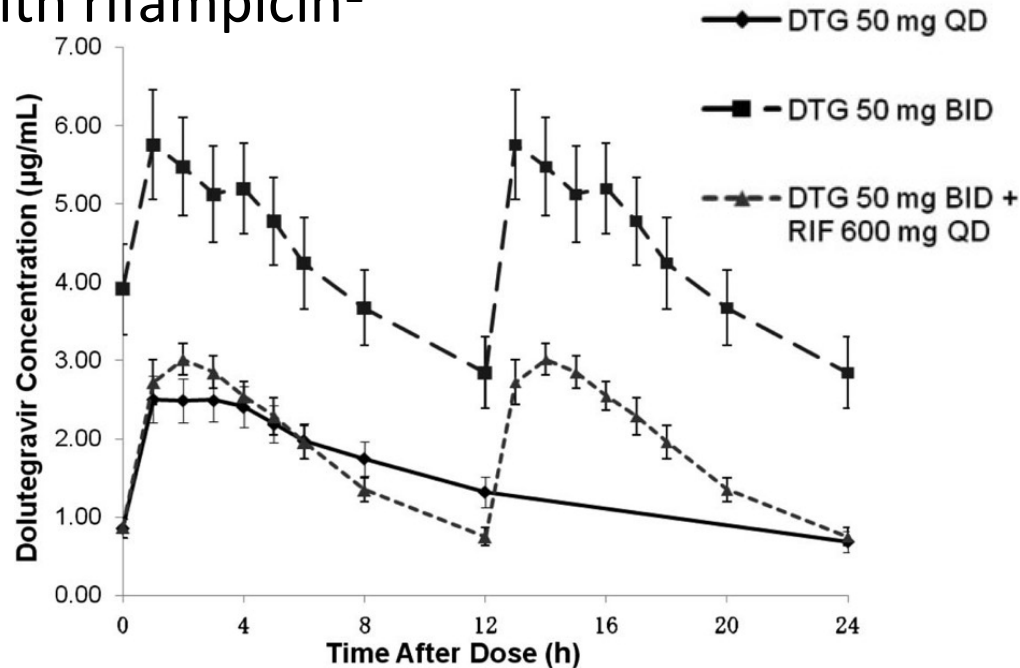
2) Murphy RA *et al.*, *PLoS One.* 2012;7(9):e44793

Option C: Change to efavirenz



Option D: Change to dolutegravir

- DTG plasma concentration in healthy volunteers if given BD together with rifampicin¹

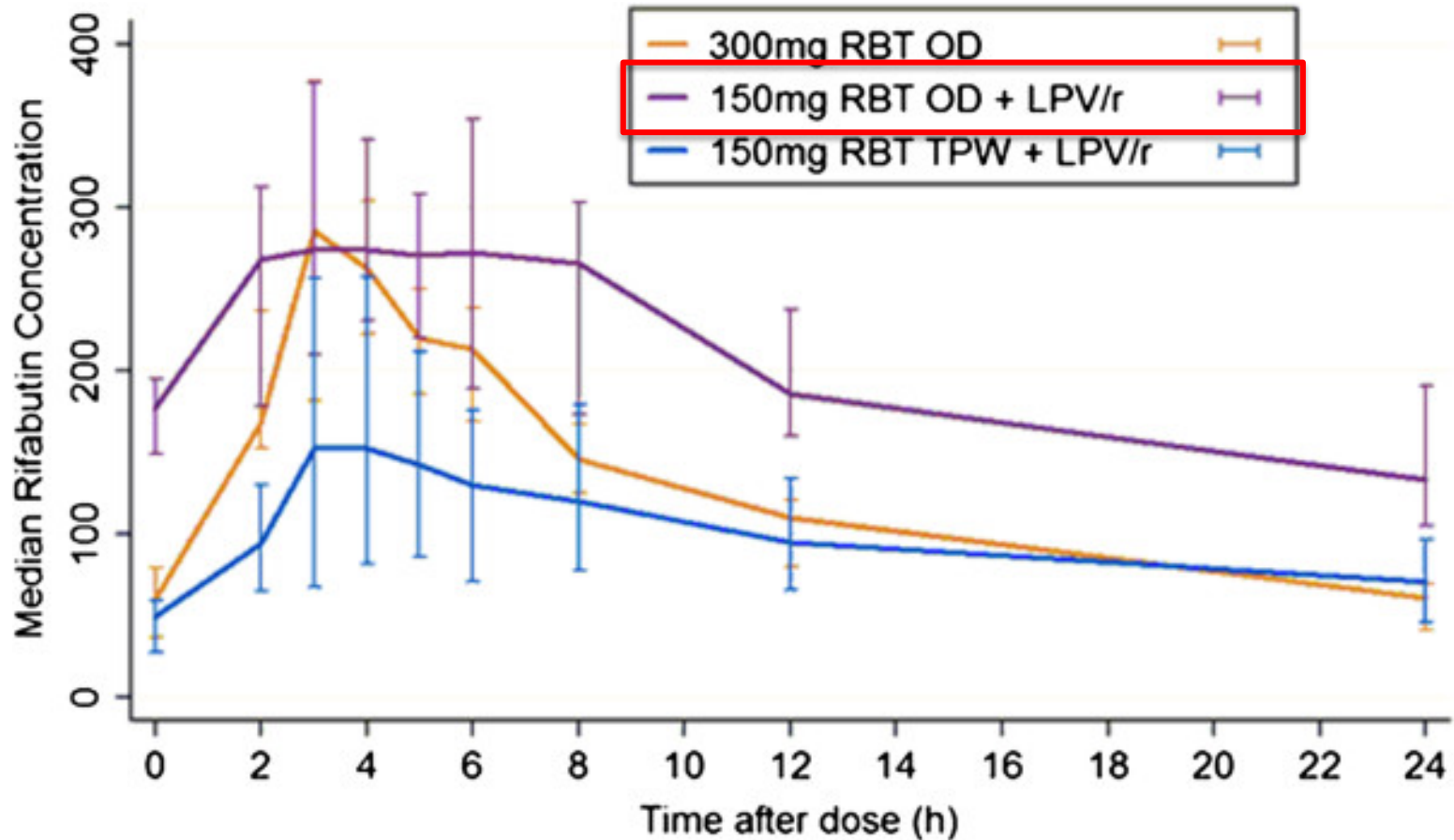


- INSPIRING-trial (EFV/TB-treatment vs DTG/TB-treatment) 24-wks snap-shot analysis:
 - DTG BD well tolerated, safe and effective²

1) Dooley KE et al., *J Acquir Immune Defic Syndr.* 2013 Jan 1;62(1):21-7

2) Dooley KE et al., CROI 2018, abstract 033

Option E: Replace rifampicin by rifabutin



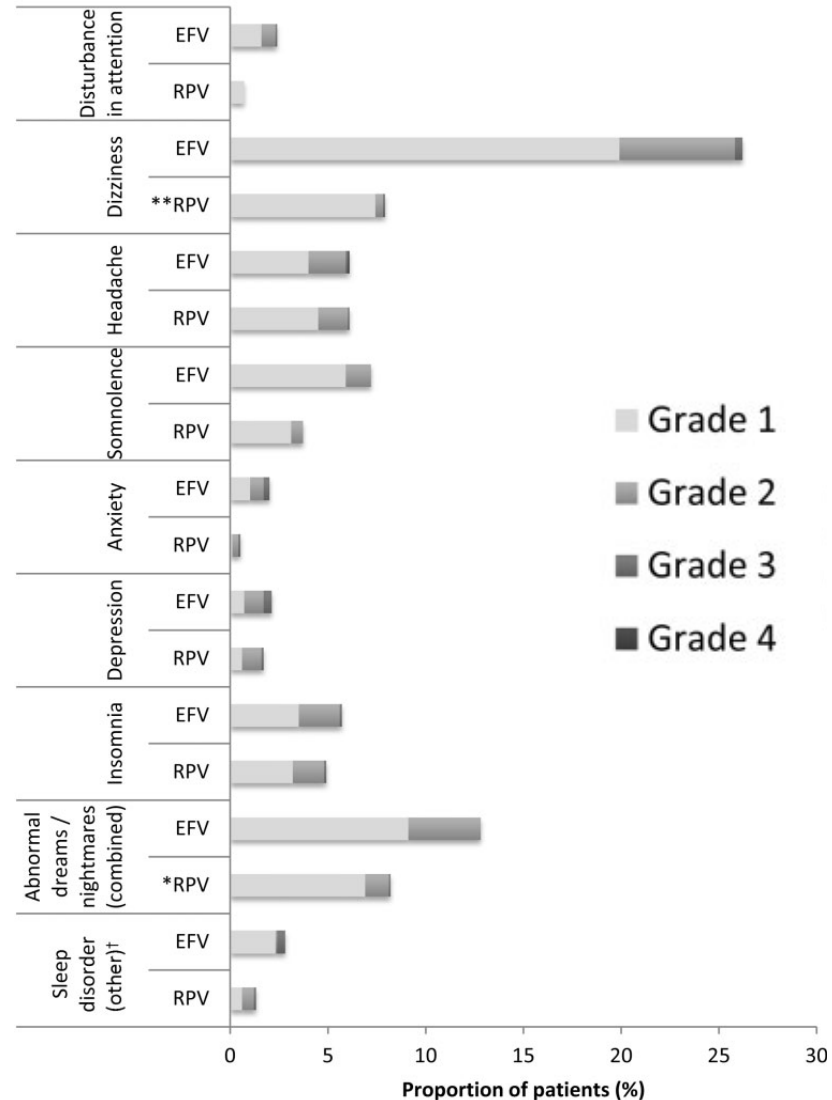
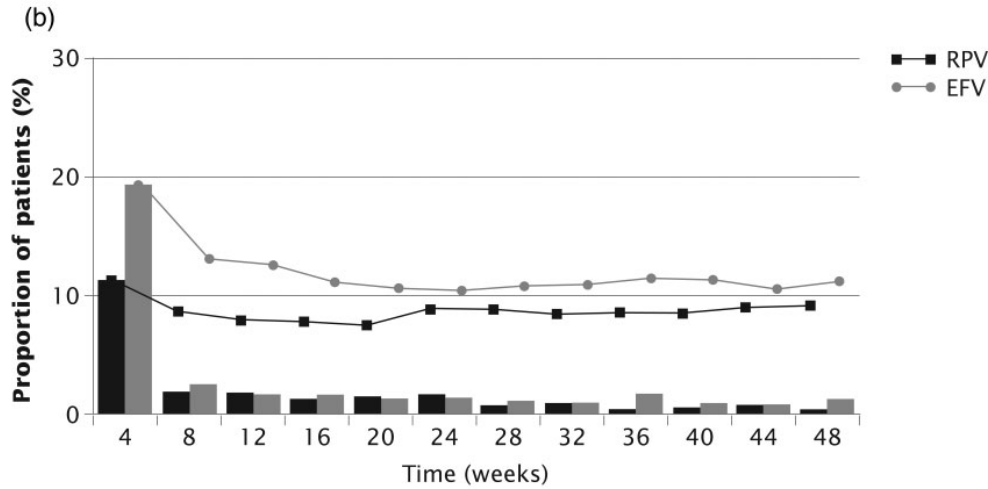
Continuation C. R.

- 17.04.2016
 - Start rifampicin/isoniazid/ethambutol
 - Change to efavirenz (**800**)/tenofovir/emtricitabine
- 12.05.2016 phone call from the patient:
 - Has stopped efavirenz about 10 days ago due to optical hallucination, vertigo and suicidal ideas

Kenedi CA & Goforth HW, 2011 (systematic review):

*„...High rates of neuropsychiatric side effects including vivid dreams, insomnia and mood changes in approximately **50% of patients who initiate efavirenz**. The effects begin quickly, commonly **peak in the first 2 weeks**, and are **generally mild and transient** in nature. Isolated case reports and uncontrolled data suggest higher rates of severe side effects; however, **there is no clear evidence of a broadly increased risk of suicide** or dangerous behavior for patients taking efavirenz as part of their antiretroviral regimen...”*

Psychiatric AEs and SAEs in ECHO and THRIVE trial



Continuation C. R.

- 07.06.2016:
 - Efavirenz → dolutegravir (50mg BD)
- 20.09.2016:
 - Patient reports cephalaea and insomnia
 - VL: 17,000 copies/mL
- Phone-call to patient: had stopped dolutegravir
- CT-scan of the brain and lumbar puncture: normal

Dolutegravir and cephalaea in 5 RCTs

Table 2. Summary of treatment-related adverse events (*n* [%]) with 5% or greater incidence for any treatment

Treatment-related events	SPRING-1		SPRING-2		SINGLE		FLAMINGO		Total DTG qd (N = 1,222)	SAILING	
	DTG qd + 2 NRTIs (N = 155)	EFV 600 mg qd + 2 NRTIs (N = 50)	DTG 50 mg qd + 2 NRTIs (N = 411)	RAL 400 mg bid + 2 NRTIs (N = 411)	DTG 50 mg + ABC/3TC qd (N = 414)	EFV/TDF/ FTC qd (N = 419)	DTG 50 mg qd + 2 NRTIs (N = 242)	DRV/r 800 mg qd + 2 NRTIs (N = 242)		DTG 50 mg qd + BR (N = 357)	RAL 400 mg bid + BR (N = 362)
Any event	73 (47)	31 (62)	119 (29)	121 (29)	180 (43)	278 (66)	80 (33)	116 (48)	452 (37)	73 (20)	85 (23)
Gastrointestinal disorders											
Nausea	19 (12)	4 (8)	40 (10)	44 (11)	42 (10)	49 (12)	29 (12)	34 (14)	130 (11)	13 (4)	16 (4)
Diarrhea	14 (9)	3 (6)	14 (3)	17 (4)	23 (6)	36 (9)	21 (9)	56 (23)	72 (6)	29 (8)	21 (6)
Nervous system disorders											
Headache	11 (7)	2 (4)	18 (4)	16 (4)	22 (5)	31 (7)	17 (7)	12 (5)	68 (6) 6%	7 (2)	7 (2)
Dizziness	5 (3)	9 (18)	11 (3)	16 (4)	28 (7)	133 (32)	6 (2)	5 (2)	50 (4)	4 (1)	5 (1)
Somnolence	3 (2)	2 (4)	0	2 (<1)	7 (2)	19 (5)	0	1 (<1)	10 (1)	0	4 (1)
Psychiatric disorders											
Insomnia	3 (2)	5 (10)	6 (1)	2 (<1)	41 (10)	23 (5)	4 (2)	3 (1)	54 (4)	0	6 (2)
Abnormal dreams	1 (<1)	3 (6)	9 (2)	6 (1)	26 (6)	64 (15)	1 (<1)	1 (<1)	37 (3)		
Skin and subcutaneous tissue disorders											
Rash	2 (1)	5 (10)	6 (1)	7 (2)	4 (<1)	34 (8)	1 (<1)	10 (4)	13 (1)	5 (1)	6 (2)
General disorders and administration site conditions											
Fatigue	4 (3)	4 (8)	4 (<1)	11 (3)	26 (6)	26 (6)	7 (3)	8 (3)	41 (3)	4 (1)	10 (3)

Note: ABC = abacavir; bid = twice daily; BR = background regimen; DTG = dolutegravir; EFV = efavirenz; FTC = emtricitabine; NRTI = nucleoside reverse transcriptase inhibitor; qd = once daily; RAL = raltegravir; 3TC = lamivudine; TDF = tenofovir.

Swiss HIV Cohort Study: 1.6% changed from dolutegravir to another therapy due to neuropsychiatric side-effects (versus 0.62% for raltegravir)[§]

Continuation C. R.

- 29.09.2016
 - Change back to darunavir / ritonavir / emtricitabine/tenofovir
 - Change from rifampicin to rifabutin 150mg OD
- 06.10.2016
 - Phone-call of the patient: Vomiting, vertigo, wishes to change back to dolutegravir and rifampicin
 - Change to dolutegravir (BD) / emtricitabine/tenofovir
 - Change to rifampicin

The End

- 03.11.2016: BAL negative for *M. kansasii*
- Follow-up CT scan: Regression of pulmonary nodules
- August 2017: Leaves Switzerland and moves back to USA

Clinical Case

Tristan Barber
Chelsea and Westminster Hospital
London, UK

Disclosures

- Tristan Barber has received speaker fees, advisory board honoraria and conference support in the last twelve months from Gilead, Janssen, MSD, Roche and ViiV

PW

- 26 years-old MSM
- Recently moved from Poland to UK
- Presented with pain on opening bowels and some urethral discharge

PW

Q1. What's the most likely causative organism?

PW

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- A. Shigella
- B. Mycoplasma
- C. Gonorrhoea
- D. Chlamydia
- E. Something else

PW

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- A. Shigella
- B. Mycoplasma
- C. Gonorrhoea
- D. **Chlamydia**
- E. Something else

PW

- 30 casual male partners in last month
- Unprotected receptive (mostly) anal sex (UPRAI)
- Started using recreational drugs 6 months ago when moved to London

PW

- What are his main risk factors for STI acquisition?
- How do we best assess his recreational drug use?
- What are the priorities for assessment and management?

Risk Factors

- Possible social isolation
- Financial factors?
- Employment
- Drug use
- Condomless AI (CAI)
- Multiple partners

Drugs

- Frequency (especially GBL)
- Route of administration
- Drug classes
- Harm (e.g. passing out)
- Loss of normal activities/friends/employment
- Others?

Priorities

- Full history including risk factors for BBV
- Diagnosis and treatment
- Drug assessment and offer of referral
- Suitability for PrEP if HIV negative
- Vaccinations as appropriate

PW

- Offered full sexual health screen including proctoscopy and microscopy
- Instant HIV test (POCT)
- Blood testing for syphilis and hepatitis B and C
- Is there a benefit in screening for hep A?
- Also offered Gardasil® (quadrivalent HPV vaccination)
- Discussion with Health Advisor re-PrEP if HIV test negative

PW

- On examination
 - Generalised maculopapular rash
 - Purulent urethral discharge
 - Proctitis with some contact bleeding



PW

- POCT negative
- Urethral microscopy showed gram negative intracellular diplococci and pus++
- Rectal microscopy showed some pus but nothing else

PW

Q2. What treatment would you offer?

PW

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- A. Cefixime 400mg and 1/52 doxycycline 100mg bid
- B. Ceftriaxone 500mg im stat, azithromycin 1g po stat and 3/52 doxycycline 100mg bid
- C. Ceftriaxone 500mg im stat, azithromycin 1g po stat and benzathine penicillin 1.2 MIU im stat and 3/52 doxy
- D. Ceftriaxone 500mg im stat and 3/52 doxycycline 100mg bid
- E. Something else

PW

- Q2. What treatment would you offer?
- A. Cefixime 400mg and 1/52 doxycycline 100mg bid
 - B. Ceftriaxone 500mg im stat, azithromycin 1g po stat and 3/52 doxycycline 100mg bid**
 - C. Ceftriaxone 500mg im stat, azithromycin 1g po stat and benzathine penicillin 1.2 MIU im stat and 3/52 doxy
 - D. Ceftriaxone 500mg im stat and 3/52 doxycycline 100mg bid
 - E. Something else

PW

- Had PrEP discussion and was enrolled into IMPACT Study
- Declined signposting re-chems
- Advised hep A vaccine
- Advised hep B vaccine as unclear history
- Shortage of both vaccines in clinic

PW

- Attends 2 weeks later for results and GC test of cure
 - GC+ fully sensitive in urethra
 - GC+ pharynx, no culture sent
 - Syphilis serology negative
 - Hep B cAb positive; sAg negative; sAb 4
 - Rectal CT+
 - Hep C negative

PW

- Would you recommend hep B vaccination?

A. Yes

B. No

PW

Q3. What might we have missed?

PW

Q3. What might we have missed?

- A. Syphilis infection
- B. Resistant gonorrhoea
- C. Hepatitis C infection
- D. HIV infection
- E. All of the above

PW

Q3. What might we have missed?

- A. Syphilis infection
- B. Resistant gonorrhoea
- C. Hepatitis C infection
- D. HIV infection
- E. **All of the above**

PW

- GC TOC negative
- Remains HIV, hep C, syphilis negative

PW

- Attends 3 months later
- 2nd Gardasil®
- PrEP follow-up
- Complaining of loose stool
- Did not get hepatitis vaccines

PW

- What questions would you ask?

PW

- SHS negative
- Stool sent for MC&S and OCP
- Positive for *Shigella flexneri*

Shigella

- Symptoms generally start one to two days after exposure and include:
 - diarrhoea,
 - fever,
 - abdominal pain
 - pain with passing stool

Hepatitis A

- The symptoms of hepatitis A develop, on average, around four weeks after becoming infected, although not everyone will experience them
- Symptoms can include:
 - feeling tired and generally unwell
 - joint and muscle pain
 - a high temperature (fever)
 - loss of appetite
 - feeling or being sick
 - pain in the upper-right part of your tummy
 - yellowing of the skin and eyes (jaundice)
 - dark urine and pale stools
 - itchy skin

Summary

- Full sexual history taking is essential to assess risk and adequately rule out infection
- Full vaccination history should also be obtained and vaccinations offered as appropriate
 - vaccination shortages mean patients may need signposting to other providers
- PrEP must always be discussed in those at high risk of HIV infection even if not locally available

Summary

- Assessing risk from illegal drugs can be difficult and referral to specialist services considered where available and accepted
- Consider other pathogens as well as historical STIs
- Full sampling for antibiotic sensitivities is imperative given increasing antimicrobial resistance patterns