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Opportunistic Infections, & Hepatitis B treatment & monitoring

Item Type	Presentation
Authors	Younkin, Morgan
DOI	10.13028/yjrd-5a89
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Download date	2024-12-31 00:34:10
Link to Item	https://hdl.handle.net/20.500.14038/36369

Opportunistic Infections, & Hepatitis B treatment & monitoring

SESSION 3

HIV/HBV DIDACTIC SERIES

APRIL 20, 2020

MORGAN YOUNKIN, MD, MPH

FAMILY MEDICINE RESIDENT

LAWRENCE FAMILY MEDICINE RESIDENCY

LAWRENCE, MA, USA

Overall Outline

5 session, 2 hours each

1. HIV & ART overview
   - History, Epidemiology, transmission/risk, staging
   - Med Class Overview, ART initiation
2. Treatment monitoring & Failure
   - 2nd & 3rd line ART, toxicity/complications, monitoring
   - Prevention
3. Opportunistic Infections & Hepatitis B
   - OIs, ART considerations, Prophylaxis
   - HBV dx, tx, surveillance, & HIV-HBV co-infection
4. Special Populations:
   - Pregnancy, antenatal & intrapartum, infant care & pediatric
5. HIV/HBV Case-Based Application
   1. Case Application
   2. Wrap-up/review, miscellaneous items

Source Materials

Liberia Integrated Guidelines for Prevention, Testing, Care, and Treatment of HIV and AIDS
- 5th edition, August 2019

WHO HIV Diagnosis, Treatment, and Opportunistic Infection Guidelines
- 2016, 2018 ART update
- https://www.who.int/publications/guidelines/hiv_aids/en/

WHO Hepatitis B treatment guidelines (2015)
- https://www.who.int/hepatitis/publications/hepatitis-b-guidelines/en/

ELWA Hepatitis B Treatment Protocol.

Zambia National Hepatitis B Treatment Protocol.

Reference Materials

Department of Health & Human Services. HIV Guidelines. USA. https://aidsinfo.nih.gov/guidelines

Fundamentals of HIV Medicine. American Academy of HIV Medicine. Oxford University Press. 2017 Edition.

National HIV Curriculum. University of Washington & CDC. USA. https://www.hiv.uw.edu/

AIDS-defining conditions

Recurrent bacterial infections

Candidiasis “below” the mouth

Invasive cervical cancer

Coccidiodomycosis

Cryptococcosis

Cryptosporidiosis

Cytomegalovirus

Chronic HSV

Disseminated Histoplasmosis

Kaposi Sarcoma

Mycobacterium Avium Complex (MAC)

Mycobacterium Tuberculosis

Pneumocystis Jirovecii Pneumonia

Progressive Multifocal Leukoencephalopathy

Toxoplasmosis gondii of brain

HIV wasting syndrome

HIV encephalopathy

Cystoisosporiasis (Isosporiasis), chronic

Lymphoma (Burkitt, Primary CNS, or immunoblastic)

Non-AIDS-defining Conditions

Bacterial Enteric Infections

Oropharyngeal Candidiasis

Community-Aquired Pneumonia

Leishmaniasis

Malaria

Latent MTB

Syphilis

Varicela-Zoster

Talaromycosis

Hepatitis B

Hepatitis C

Bartonella

Oral & Cutaneous Conditions

Oropharyngeal Candidiasis

Oral Hairy Leukoplakia

HSV

Anogenital Warts

Scabies

Molluscum Contagiosum

Eosinophilic Folliculitis

Bacillary Angiomatosis

Seborrheic Dermatitits

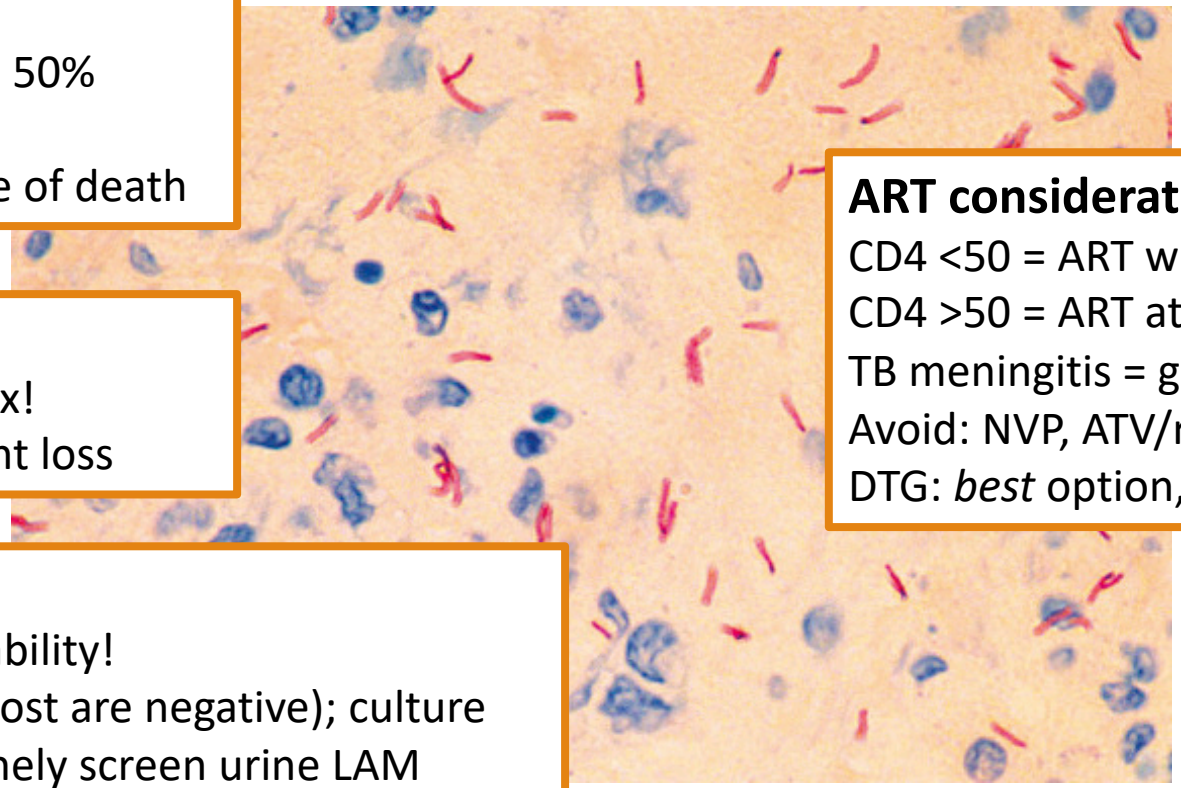
Mycobacterium
Reactivation OR primary disease

Mycobacterium Tuberculosis

Epidemiology:
PLHV: 10% annual & 50% lifetime risk
Most common cause of death

Presentation:
Variable & atypical sx!
Anemia, fever, weight loss

Diagnosis:
Think pre-test probability!
Xpert; smear (but most are negative); culture
If CD4 <200 -> routinely screen urine LAM
- if + => give TBT; does not r/o dz if neg



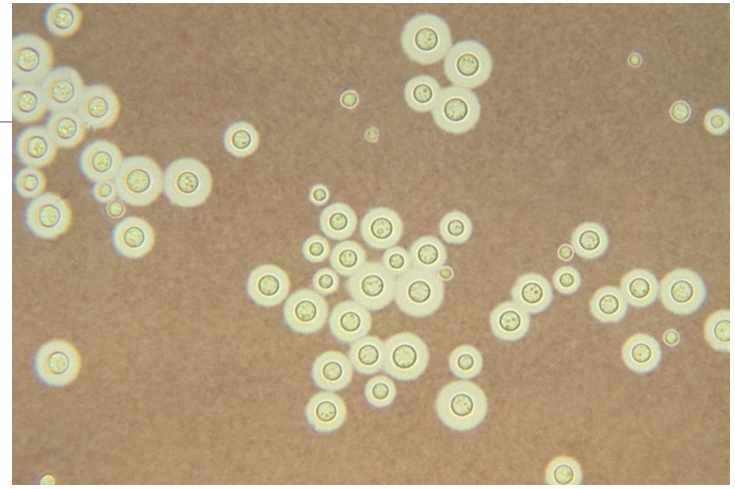
Management:
Don't delay; if sick > empiric!

ART considerations:
CD4 <50 = ART within 2 weeks
CD4 >50 = ART at 8 weeks
TB meningitis = generally defer ART until 8 weeks
Avoid: NVP, ATV/r, LPV/r, DRV/r
DTG: *best* option, but double dose of DTG for rifampicin

TB Preventive Therapy (TPT):
All HIV+, start w/ ART either:
- 6H (INH x6mo)
- 3HP (RFP/INH wkly x12)

Fungus
Reactivation OR Primary disease

Cryptococcosis



Epidemiology:
CD4 <100-200

Presentation:
Indolent, headache, AMS, +/- fever, rash similar to molluscum

Diagnosis:
CrAg (serum (95% +) or CSF)
India Ink stain, ^opening pressure
If CD4 <200 = routinely screen with serum CrAg

Management:
Induction Phase
Option 1: AmphoB/flucytosine x7d
Option 2: Fluconazole/flucytosine x14d
Option 3: AmphoB/fluconazole x14d

Consolidation Phase
Fluconazole 800mg daily

Maintenance phase
Fluconazole 200mg daily for life

ART considerations:
Start ART only 5 weeks *after* antifungal tx initiation

Prevention:
None (other than ART)

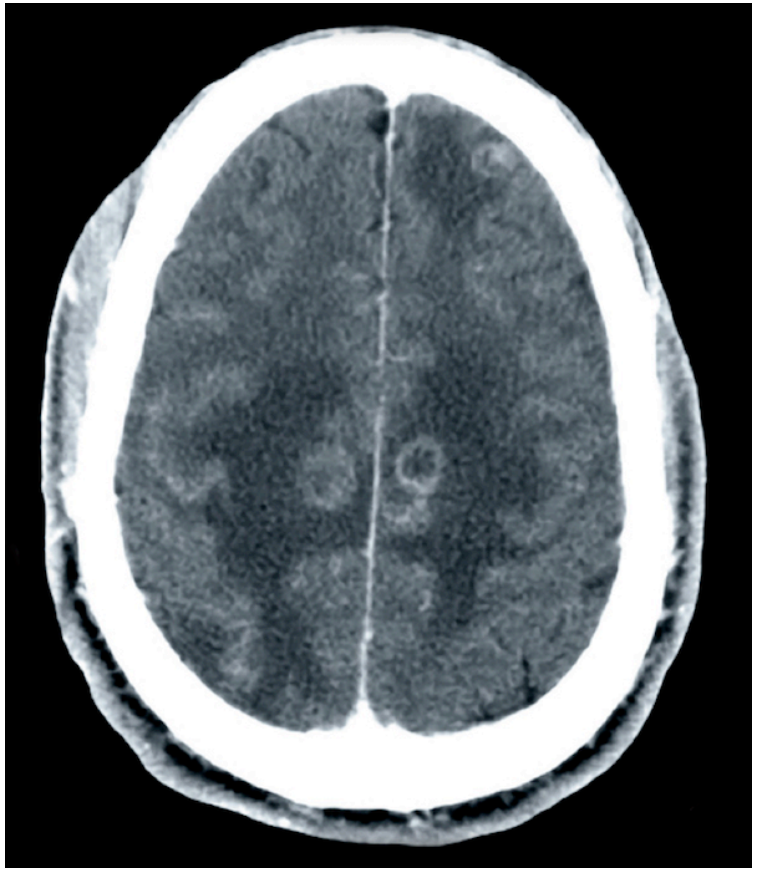
Parasite
Reactivation of latent infection

Toxoplasmosis Gondii

Epidemiology:
CD4 <100
Results from reactivation of previously latent dz

Presentation:
New CNS alteration
Retinitis, pneumonitis, disseminated

Diagnosis:
Presumptive clinical diagnosis
CT with ring enhancing lesions
CSF studies (PCR specific, not sensitive)
IgG negative = excellent NPV



Management:
Cotrim 960mg:
4 tab BID x6wk, then
2 tab BID x3mo, then
1 tab BID lifelone

ART considerations:
Start ART within 2-3 weeks

Prevention:
If CD4 <100 give cotrim ppx

Pneumocystis Jiroveci (carinii) Pneumonia (PJP)

Fungus
Likely re-infection

Epidemiology:
CD4 <200 predominates

Presentation:
Subacute, nonproductive cough, fever, hypoxia, often no rales
Infant: severe PNA

Diagnosis:
Ambulatory hypoxia
CXR
CSF studies (PCR specific, not sensitive)
IgG negative = excellent NPV

Management:
Cotrim x21d
If hypoxic give prednisolone x21d (start with cotrim)

ART considerations:
Start ART within 2 weeks

Prevention:
CPT lifelong

non-TB mycobacterium group
Ubiquitous in environment

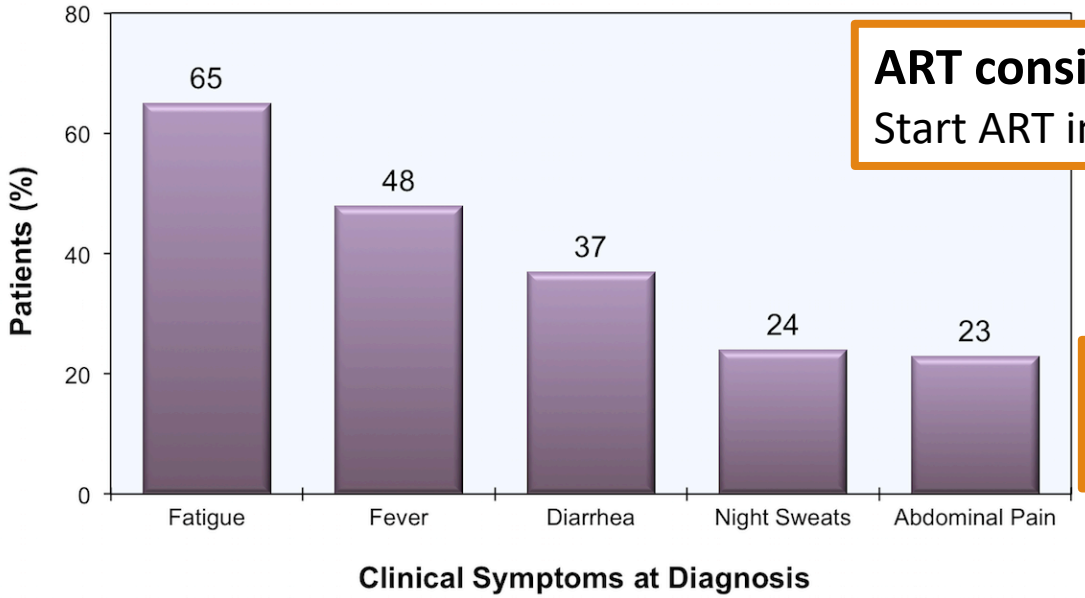
Mycobacterium Avium Complex

Epidemiology:
CD4 <50
ART decreases population prevalence

Management:
Macrolide & ethambutol x12mo

Presentation:
Nonspecific/indolent – fever, fatigue, diarrhea, weight loss, abd pain, diffuse LAD

Diagnosis:
Presumptive clinical diagnosis
Blood Culture x2 (90% sensitive by 14d growth)



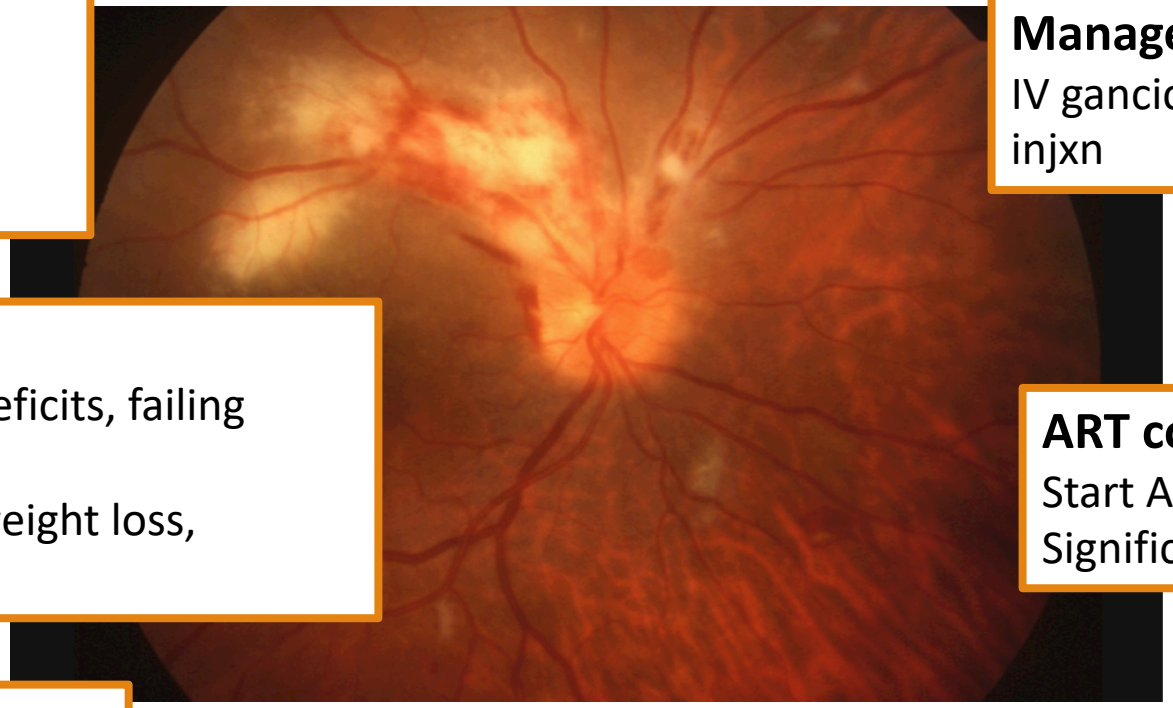
ART considerations:
Start ART immediately

Prevention:
ART

ds-DNA herpes virus
Reactivation of latent infection

Cytomegalovirus

Epidemiology:
CD4 <50
Risk factors: MSM, high HIV RNA, prior OI



Management:
IV ganciclovir or intraviteral injxn

Presentation: indolent
Retinitis – floaters, flashes, field deficits, failing vision, often unilateral
CNS (encephalitis), GI (diarrhea, weight loss, esophagitis)

ART considerations:
Start ART 2wks after tx start
Significant IRIS risk

Prevention:
ART

Diagnosis: clinical
Retinal exam, endoscopy (mucosal ulcerations, biopsy), CSF PCR

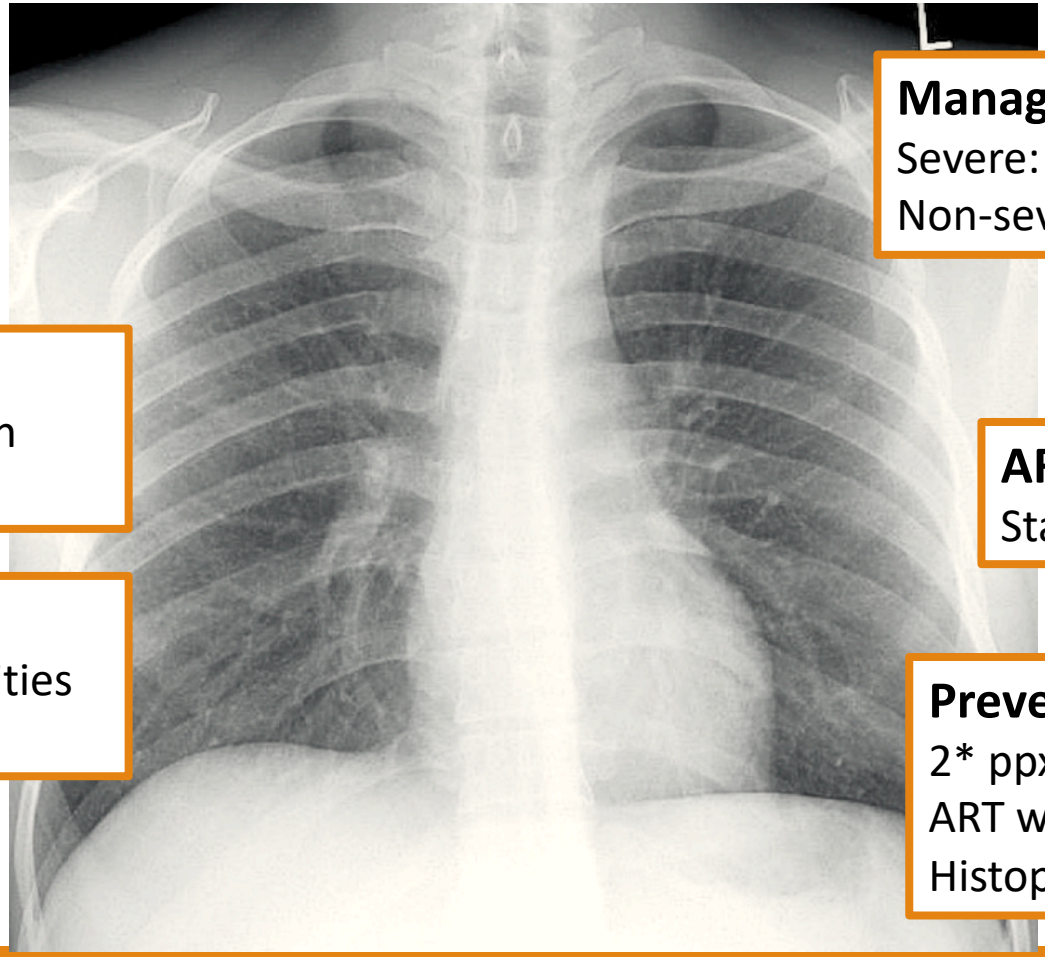
fungus
Reactivation of latent infection

Histoplasmosis

Epidemiology:
Endemic in most tropical regions
CD4 <150

Presentation: *many* variations
Disseminated: fever, wt loss, cough
Encephalitis, GI, hepatomegaly

Diagnosis:
CXR: nodules, diffuse patchy opacities
Urine Ag



Management:
Severe: amphoB > itraconazole x12mo
Non-severe: itraconazole x12mo

ART considerations:
Start ART immediately

Prevention:
2* ppx stopped after 1yr when on ART with undetectable RNA & Histoplasma Ag not detected

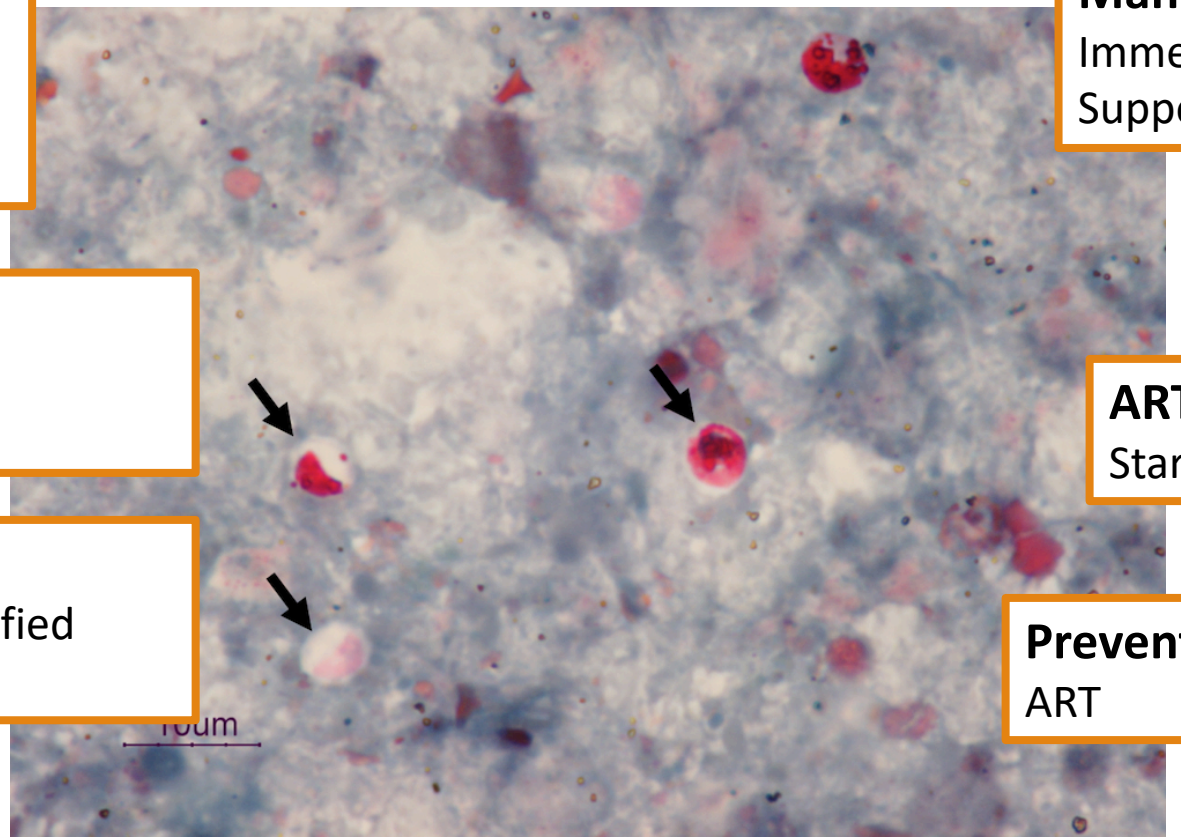
Protozoan parasite

Cryptosporidiosis

Epidemiology:
Contaminated water (persists despite chlorination), person-to-person

Presentation:
watery diarrhea, vomiting
Chronic OR profuse

Diagnosis:
Stool ova & parasite with modified acid-fast stain



Management:
Immediate ART
Supportive treatment

ART considerations:
Start ART immediately

Prevention:
ART

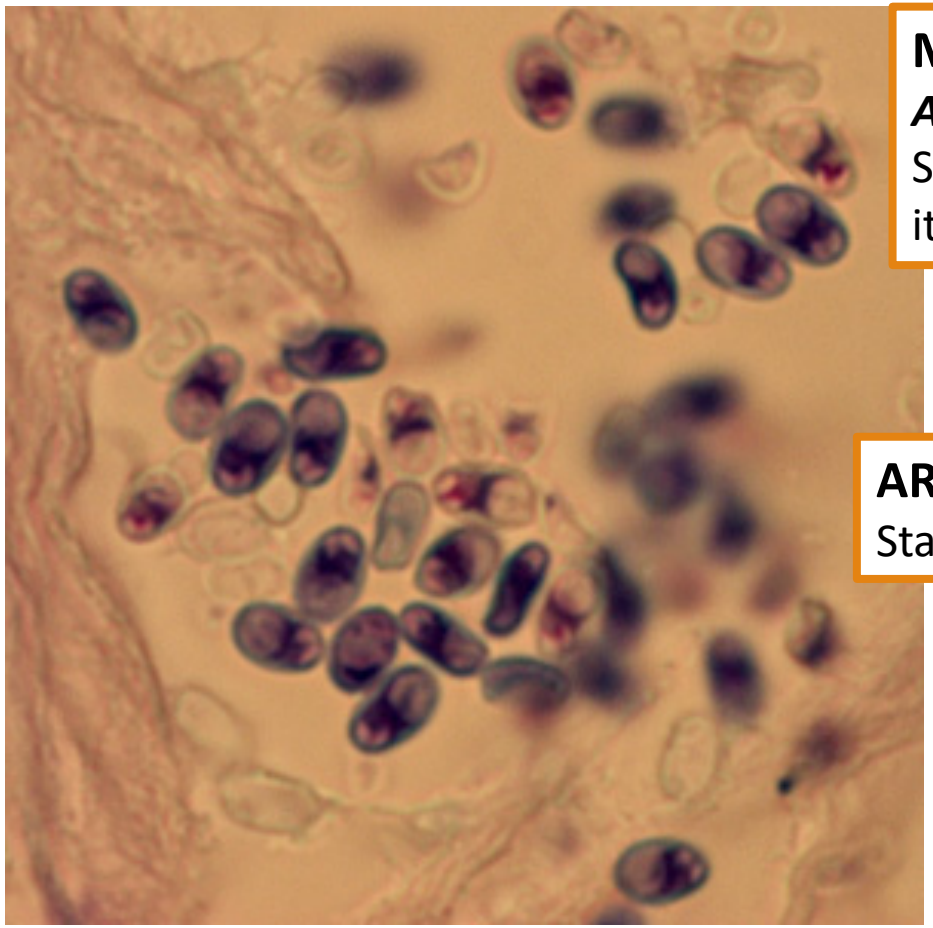
Single-celled protists

Microsporidiosis

Epidemiology:
Untreated drinking water
CD4 <100

Presentation:
diarrhea

Diagnosis:
Clinical diagnosis
Stool microscopy



Management:
ART (sx stop when CD4 >100)
Some species: albendazole, itraconazole

ART considerations:
Start ART immediately

Prevention:
ART

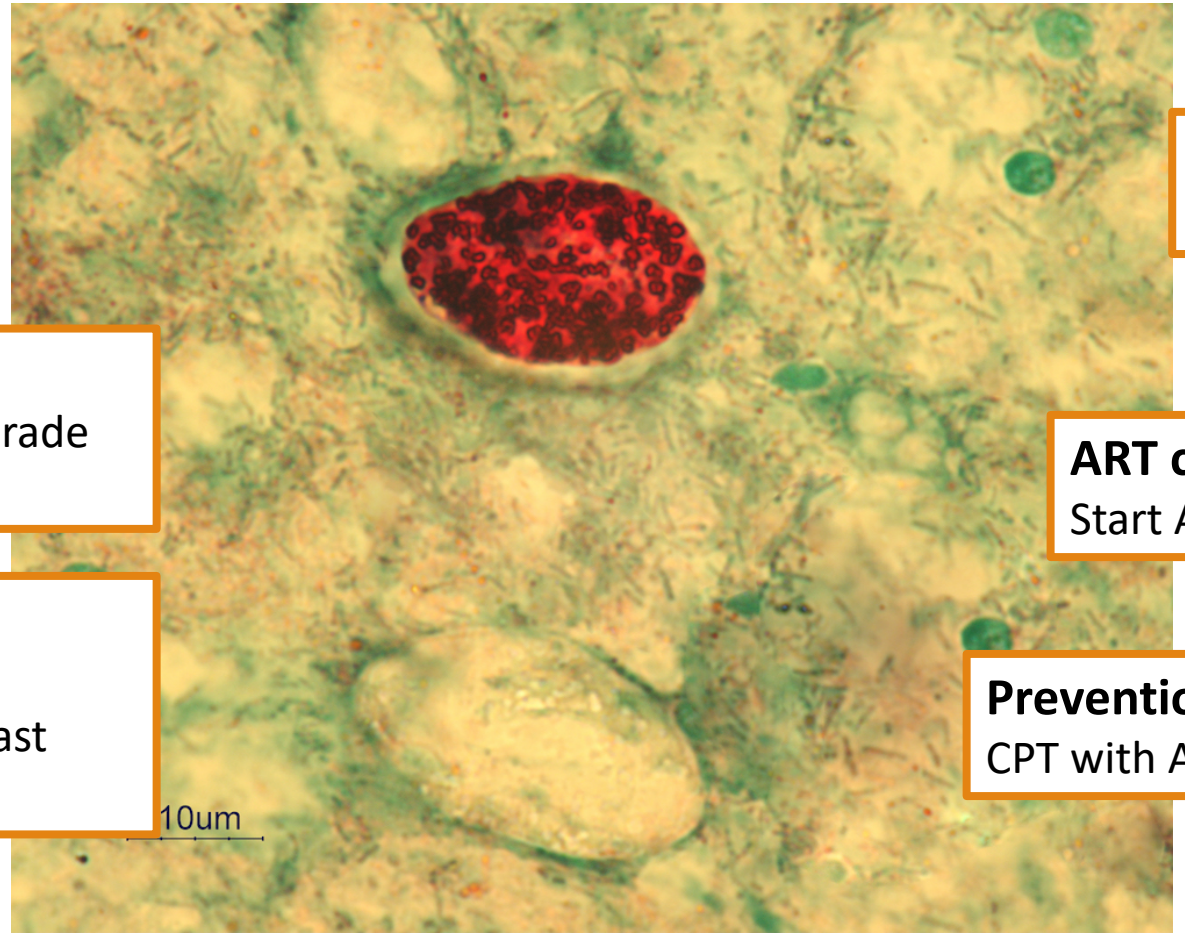
Parasite

Isosporidiosis ("cystoisosporiasis")

Epidemiology:
Tropical regions
Fecal-oral route
CD4 <250

Presentation:
Watery diarrhea, vomiting, low grade fever

Diagnosis:
Presumptive clinical diagnosis
Large oocysts on modified acid-fast stool microscopy



Management:
Cotrim TID for 10-30d

ART considerations:
Start ART immediately

Prevention:
CPT with ART

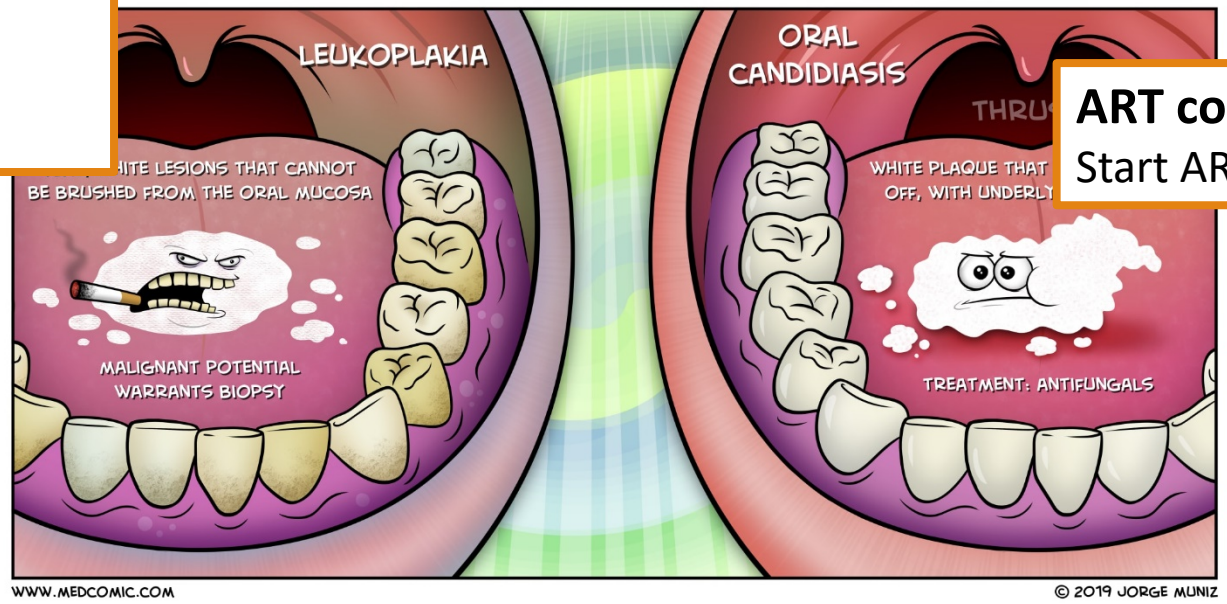
fungus

Candidiasis

Epidemiology:
CD4 < 100-200

Management:
Oral: nystatin topical x7-14d
Esophageal: fluconazole x14d
Vaginal: topical or oral x1

Presentation:
Oral: white/red patches
Esophageal: odynophagia
Vaginal: vaginitis, discharge



ART considerations:
Start ART immediately

Diagnosis:
Presumptive clinical diagnosis
Wet prep if vaginal

Prevention:
ART

Virus
Reactivation of latent

Herpes Zoster (shingles)

Epidemiology:
CD4 <200
15x risk in HIV+ compared to HIV neg

Presentation:
Dermatomal distribution
Caution trigeminal nerve involvement

Diagnosis:
Presumptive clinical diagnosis

Management:
Acyclovir x7d within 72hrs of symptom start
Ophtho for CN V
Pain control

ART considerations:
Start ART immediately

Prevention:
vaccination

ectoparasite

Scabies

Epidemiology:
Skin-to-skin contact
Crusted (Norwegian) scabies = airborne

Presentation:
Pruritis; papules & thin short “burrows”
Crusted: severe, widespread, crusted

Diagnosis:
Presumptive clinical diagnosis

Management:
Topical permethrin
Oral ivermectin
tx contacts
Crusted: ivermectin

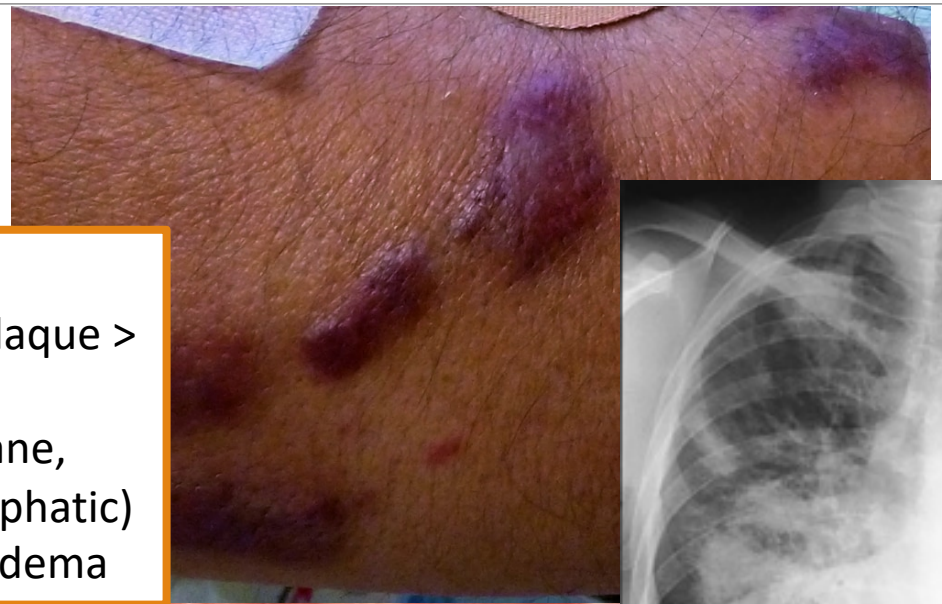
ART considerations:
Start ART

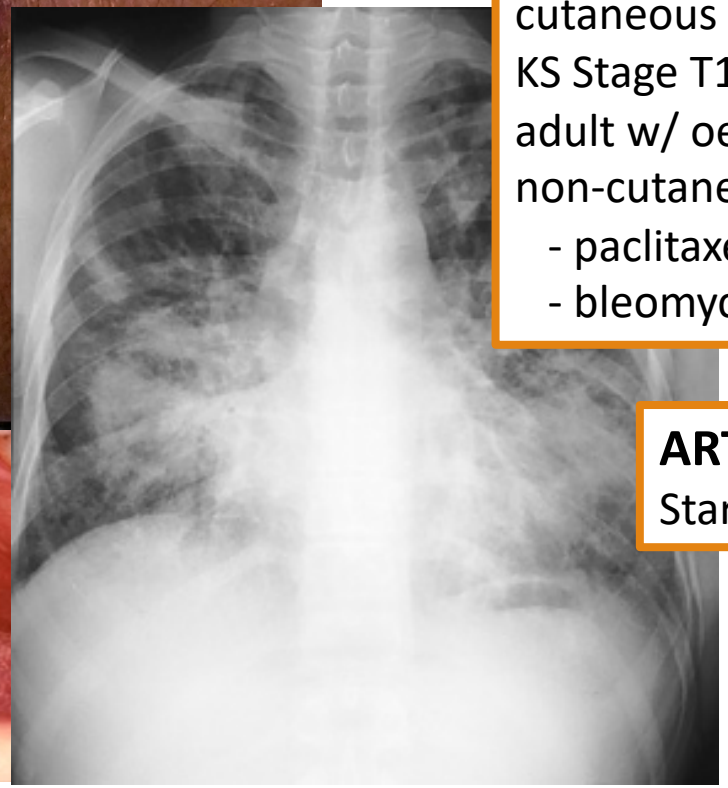
Vascular tumor caused by human herpes virus-8 (HHV-8)

Kaposi Sarcoma (KS)

Epidemiology:
CD4 <150

Presentation:
Purple/red/brown patch > plaque > nodule
Cutaneous, mucous membrane, visceral organ (GI, pulm, lymphatic)
Pediatric: woody inguinal oedema





Diagnosis:
Presumptive clinical diagnosis biopsy

Management:
KS Stage T0 (adults with only cutaneous KS) = ART x3mo
KS Stage T1 (any pediatric & adult w/ oedema, nodules, non-cutaneous involvement):
- paclitaxel chemo
- bleomycin/vincristine

ART considerations:
Start ART

Prevention:
ART

Lymphoma

Epidemiology:
Burkitt
Primary CNS

Presentation:
LAD, weight loss, fever, anemia
CNS findings

Diagnosis:
Biopsy
Consider if failure to improve after TB treatment x4wks in suspicious cases

Management:
Oncology

ART considerations:
Start ART

Prevention:
ART

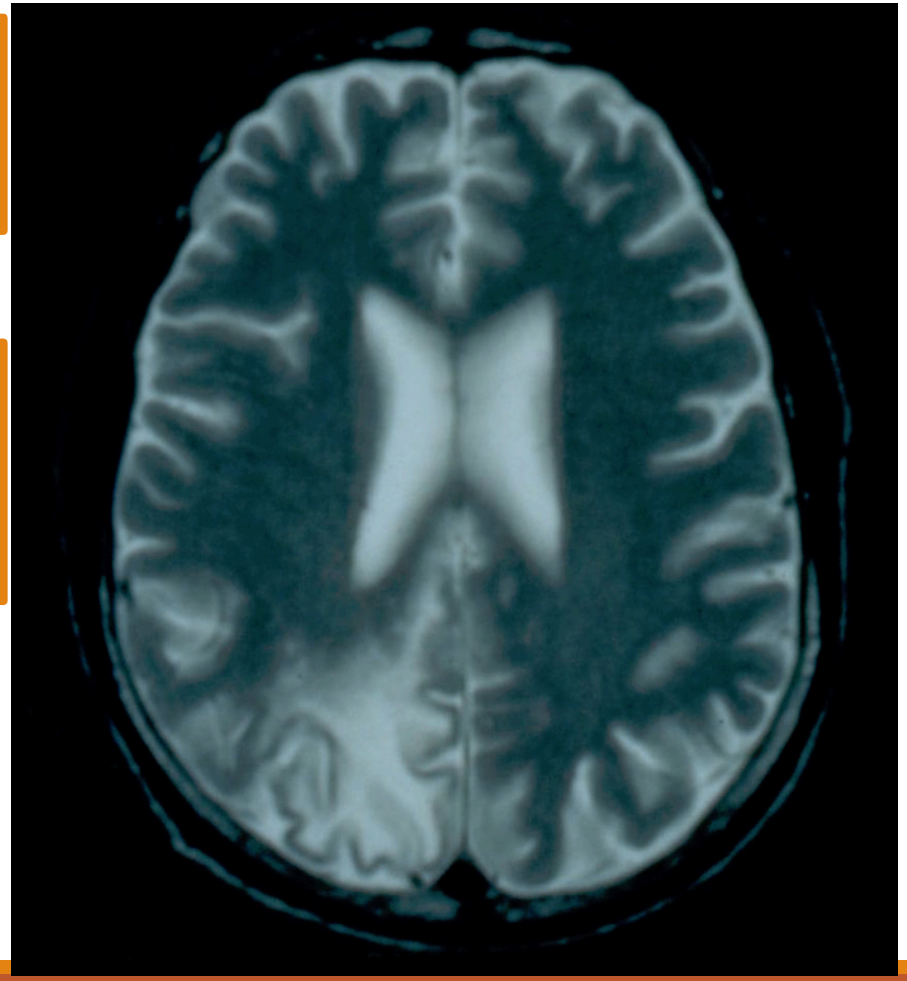
Progressive Multifocal Leukoencephalopathy

JC virus reactivation

Epidemiology:
80% JC worldwide seroprevalence
Immunocompromise > reactivation

Presentation:
subacute CNS alteration
20% seizure
Fever & acute encephalopathy rare

Diagnosis:
Presumptive clinical diagnosis
MRI



Management:
ART

ART considerations:
Start ART immediately

Prevention:
ART

IRIS (Immune Reconstitution Inflammatory Syndrome)

Disease- or pathogen-specific inflammatory state that may occur after initiation of ART

- ***Paradoxical*:** worsening of previously diagnosed disease
- ***Unmasking*:** appearance of previously undiagnosed disease

Rules of thumb:

- Treat the IRIS-specific condition as indicated
- Continue ART

TB-IRIS

- Give steroids (4 weeks)