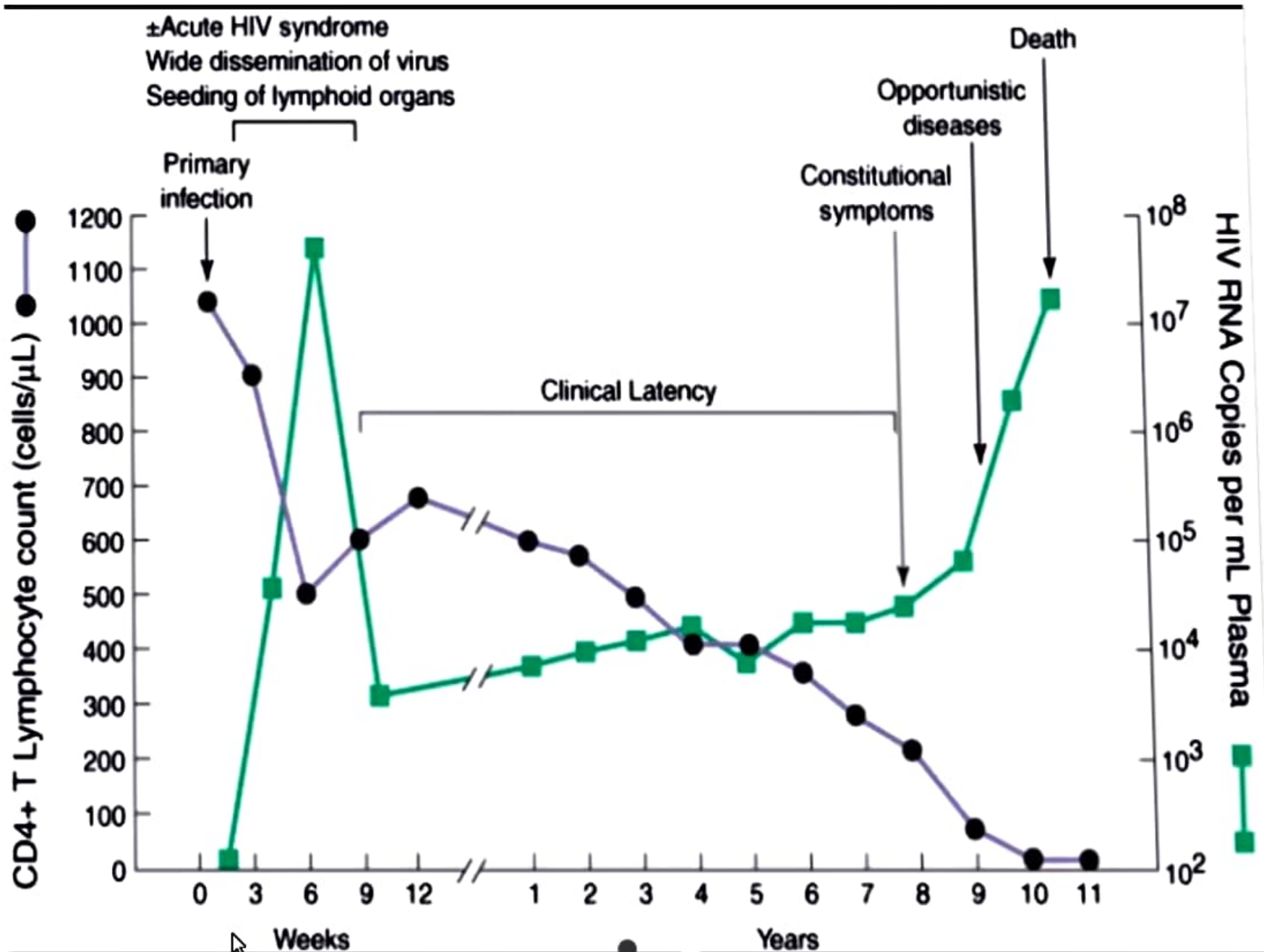


HIV and Opportunistic infections

EO

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Natural History of HIV



Common OIs

- Tuberculosis - Hx , S/S, Dx, Rx
- Cryptococcal meningitis
- Pneumocystis Jervicii
- Toxoplasmosis
- Cytomegalovirus
- Non-infectious - KS , lymphoma , cacx



Opportunistic Diseases

BACTERIAL	VIRAL	FUNGAL	PARASITIC	OTHER ILLNESSES
Tuberculosis	Varicella zoster	Candidiasis	Isosporiasis	AIDS -dementia
Bacterial respiratory infections	Oral leukoplakia	Cryptococcosis	Microsporidi-osis	Invasive cervical cancer
Bacterial enteric infections	HSV CMV	Penicilliosis	Cryptosporid-iosis	Non-Hodgkin's lymphoma
Pneumocystis jiroveci pneumonia	Human herpes virus type 8		Giardiasis Toxoplasmosis	Kaposi's sarcoma
Atypical mycobacteriosis	Human papilloma virus		Strongyloidiasis	

CD4+ Lymphocyte Count
(cells/ μ l)

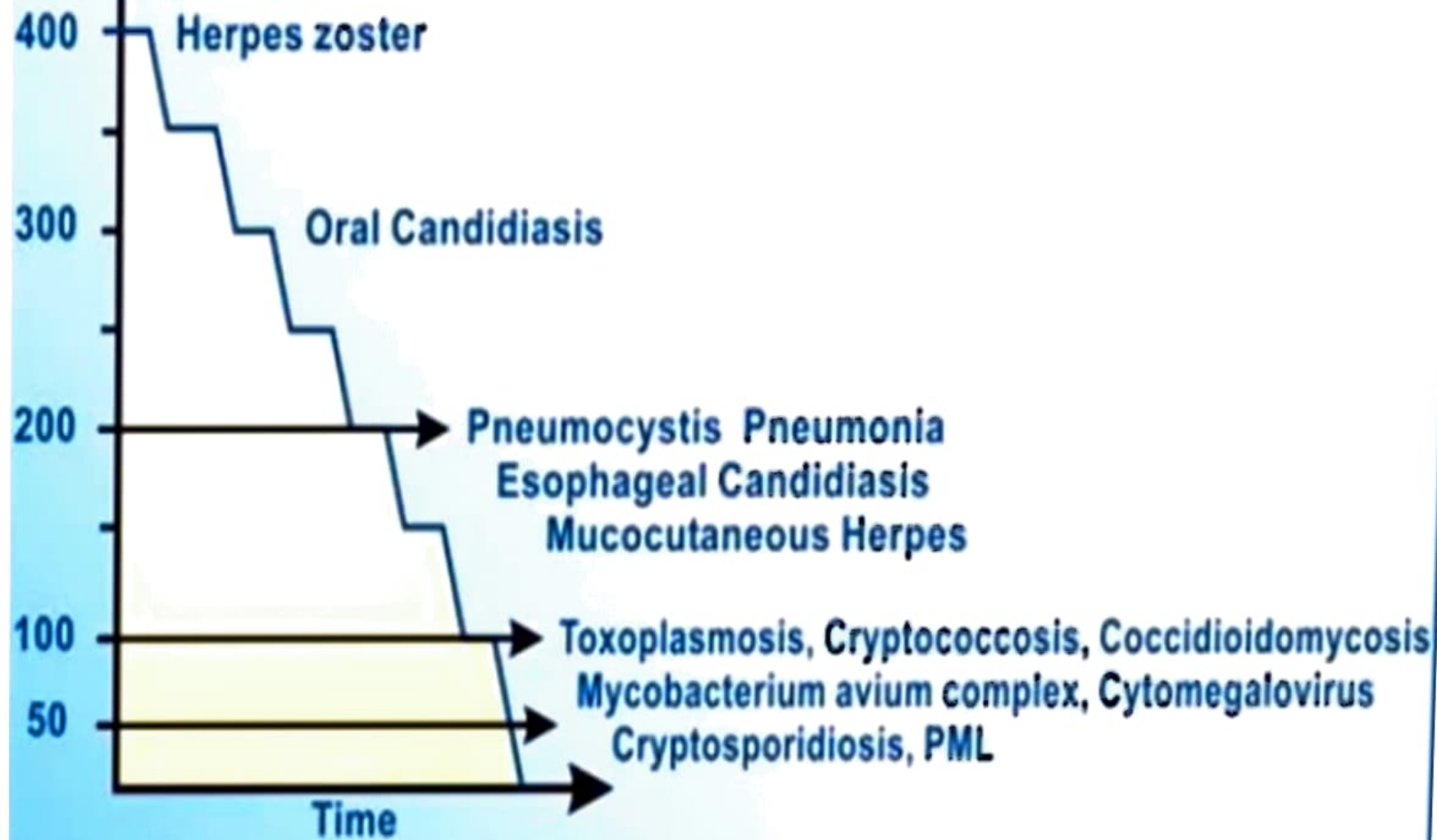


Table 1.1: CD4 and Risk of Opportunistic Infections and Conditions

CD4 Count (cells/mm ³)	Likely Opportunistic Infections and Conditions
Any CD4	HIVAN, KS, TB
> 200	Bacterial pneumonia, TB, sensory polyneuropathy, HAD, PPE, thrush, EPTB
100- 200	Above plus PCP, EPTB
< 100	Above plus Toxoplasmosis, PML, NHL. Cryptococcal meningitis
< 50	Above plus MAC, CMV retinitis, , primary CNS lymphoma

HIVAN = HIV associated nephropathy; KS = Kaposi's Sarcoma; PPE = Papular Pruritic Eruptions; HAD = HIV associated dementia; EPTB = Extrapulmonary TB; PML = Progressive multifocal encephalopathy; NHL = Non-Hodgkin's Lymphoma; MAC = Mycobacterium Avium Complex; CMV = Cytomegalovirus

Cotrimoxazole Desensitization

Table 1.2: Standard Desensitization Regimen (Days)

Day	Dose of TMP/SMX Suspension 40/200 per 5ml
1	0.5ml
2	1ml
3	2ml
4	3ml
5	4ml
6	5ml
7	1 SS tablet
8	2 SS tablets/1 DS tablet per day

Table 1.3: Rapid Desensitization Regimen (Hours)

Hour	Dose of TMP/SMX 40/200 per 5ml
0	0.5ml
1	1ml
2	2ml
3	3ml
4	4ml
5	5ml
6	1 SS tablet

Isoniazid preventive therapy(IPT)

- The risk of new tuberculosis disease in HIV-infected individuals can be lowered, but not eliminated, by reducing exposure to TB, using isoniazid preventive therapy (IPT), and ART.
- INH given for a 6–9 month period reduces incidence of TB by about 60% in PLHA with a positive tuberculin skin test, and by about 40%, when used irrespective of skin-test results.
- Some centres may already be offering IPT routinely to PLHA. **Where IPT is used, it is important that screening for TB is done diligently, adherence counselling is provided and active patient follow-up is possible in the case of defaulters.**
- Where IPT is **NOT** used routinely in PLHA, it **should be offered to all children under 5 years exposed to “open TB” in a close contact after active TB has been excluded.**
- *Consideration should also be given to IPT provision in all HIV infected children after exclusion of TB because of the proven benefits.*

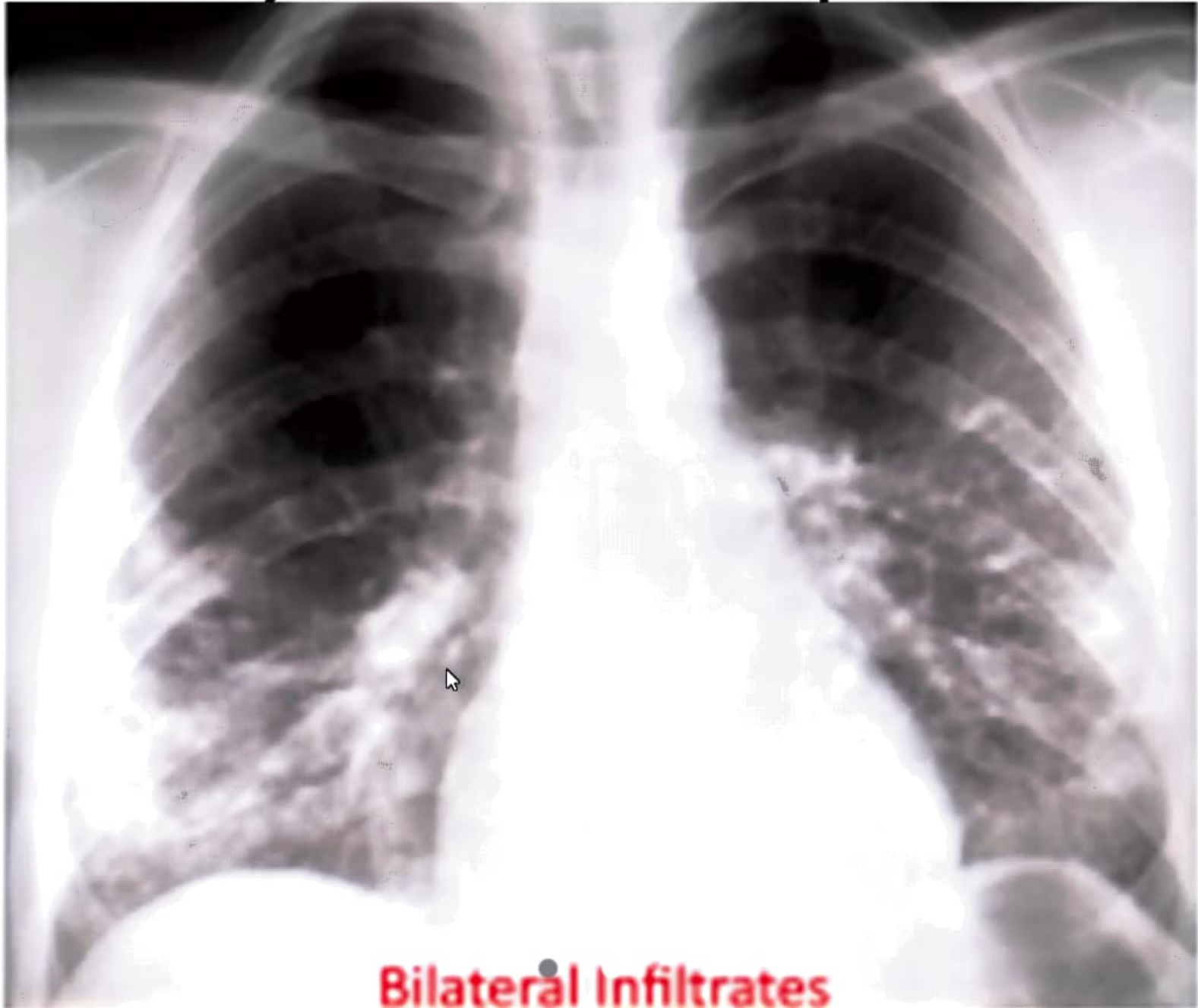
Table 1.6: Clinical Presentation of IRIS

Responsible Condition	Clinical Presentation of IRIS
TB	IRIS presents from 1-6 wks after starting ART. Commonly high fever, cough, dyspnoea; new or increased lymphadenopathy (peripheral or mediastinal); lymph node abscesses; worsening of pulmonary disease with new or increased infiltrates or effusion; new or worsening CNS presentation; other new extrapulmonary lesions
Herpes Zoster	Within the first 4 months of ART. Presents with herpes zoster,
Cryptococcus	Presents 1 wk to 11 months after ART initiation. Fever, worsening headache, lymphadenitis, new or worsening signs of meningitis; pulmonary disease; skin lesions,
PCP	Fever, cough, dyspnoea in patients on treatment, those recently treated or those undiagnosed. CXR may show worsening radiographic picture
Skin	New or worsening PPE, eosinophilic folliculitis, new presentation or chronic mucocutaneous herpes lesions
Malignancies	New or worsening KS lesions
Hepatitis B	Worsening hepatitis, confirmed by rising ALT AST. Can present late, up to 9 months after ART initiation. "May be associated with re-appearance of positive HBSAG and HBeAG in patients previously positive HBc Ab/HBsAb"

Treatment

No single treatment option exists for IRIS and management depends on the underlying condition, as well

Pneumocystis Jerivocii pneumonia



Bilateral Infiltrates

Table 3.5: Summary of PCP Treatment

	Drugs	Dose
1st Line	Cotrimoxazole (Single strength, SS 400/80; double strength, DS 800/160) given for 21 days	20mg/kg of the trimethoprim component. (Alternatively, weight divided by 4 gives the number of SS tablets per 24 hr period)
2nd Line	Clindamycin <i>plus</i> Primaquine Pentamidine Given for 21 days	Clindamycin 600-900mg 8 hourly <i>plus</i> Primaquine 15-30mg/day Pentamidine 4mg/kg/day IV/IM
For the severely ill (O₂ saturation on air < 90%)	Add prednisolone from first day of treatment	40mg BD for 5 days, then 40mg daily for 5 days, then 20mg daily for the remaining 11 days

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Table 4.1. Summary: HIV Associated Oral Lesions

Clinical condition	Presentation	Management
Candidiasis	White curd like patches on the tongue and inner surface of cheeks; can be easily scraped off revealing redness underneath. May also present as shiny erythematous patches or angular cheilitis	Nystatin mouth drops 500000 units (5 ml) 4x per day for 7-14 days Miconazole gum patch Systemic therapy if above fails: Fluconazole 100 mg/day for 7 days Itraconazole 200mg/ day for 7 days (swished in mouth and swallowed on an empty stomach)
Apthous Ulcers	Ulcers in the mouth that are painful, are well defined with elevated margin and whitish floor	Antiseptic mouth washes (e.g. difflam) Local anaesthetic preparation prior to meals Corticosteroid preparations in oral gel 2° infection of ulcers is common requiring metronidazole + penicillin OR co-amoxiclav For refractory cases: Oral prednisolone (40mg per day for 1-2 weeks before tapering) Dapsone 100mg /day Resolves with ART.

Table 4.1. Summary: HIV Associated Oral Lesions cont.

Clinical condition	Presentation	Management
Kaposi's Sarcoma	Lesions usually found on the roof of mouth or gums and do not hurt or itch; vary in colour from dark red, purple to brown. They start as patches then progress to thick bumps, to may become large tumours.	ART together with specific treatment of KS. Should be managed by an experienced clinician.
Oral Hairy Leukoplakia	Oral mucosal disease, associated with EBV, non-painful white plaque along the lateral tongue borders. Diagnosis is clinical.	Treatment not required.
HSV - 1	Painful, progressive anogenital or orolabial ulceration; More likely to recur or persist in PLHA	Aciclovir 400mg 8 hourly for 7-10 days

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Table 4.2: Summary: Treatment of Oesophagitis in PLHA

Cause	Treatment
Oesophageal Candidiasis	Preferred: Fluconazole 200mg stat then 100mg OD PO x 14-21 days. IV if patient cannot swallow Failure to improve on Fluconazole: Increase dose to 400-800mg/day OR Itraconazole <i>solution</i> 200mg PO x 14-21 days OR Amphotericin B IV 0.3-0.7 mg/kg/day x 14-21 days If no response consider anti-HSV treatment
Herpes Simplex Virus (HSV) Oesophagitis	Aciclovir 800mg 6 hourly x 14-21 days Or Valaciclovir 1g PO TDS x 14-21 days
CMV Oesophagitis	Valganciclovir 900mg BD x 3 weeks
Aphthous Ulcers	Prednisolone 40mg/day x 7-14 days, then taper

Table 4.3: Summary: Causes of Diarrhoea

Cause	Acute Diarrhoea	Chronic Diarrhoea
Bacterial Infections (watery diarrhoea, bloody, fever)	Non-typhi <i>Salmonella</i> species (NTS), <i>Shigella</i> , <i>Campylobacter jejuni</i> , <i>Yersinia enterocolitica</i> , <i>Escherichia coli</i> and <i>Vibrio cholera</i> , shigella, <i>Clostridium difficile</i> , <i>Vibrio cholera</i> ; Food borne toxigenic diarrhoea (staph aureus, B cereus)	<i>Salmonella typhi</i> ; <i>Mycobacteria avium</i> complex, mycobacterium TB
Protozoal Infections (watery diarrhoea, bloating, flatulence)	<i>Giardia lamblia</i> , <i>Entamoeba coli</i>	<i>Cryptosporidium</i> , <i>Giardia lamblia</i> , <i>Isospora belli</i> , Ent. histolytica, microsporidia
Parasitic		<i>Strongyloides stercoralis</i>
Viruses	Enteric viruses	CMV
Medication	Antibiotics, ARV drugs – PIs, DDI	ARVs
Toxins	<i>Clostridium difficile</i> , staph aureus, bacillus cereus	
Malignancies		Lymphoma, endocrine tumours
Other	Ischemic colitis	Endocrine disorders, malabsorption, ulcerative colitis, radiation or chemotherapy, unknown

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Cryptosporidiosis

- Found in about 35% of AIDS diarrheal cases.
- **Clinical features:** -watery diarrhea,
-Abdominal bloating,
-profound weight loss .

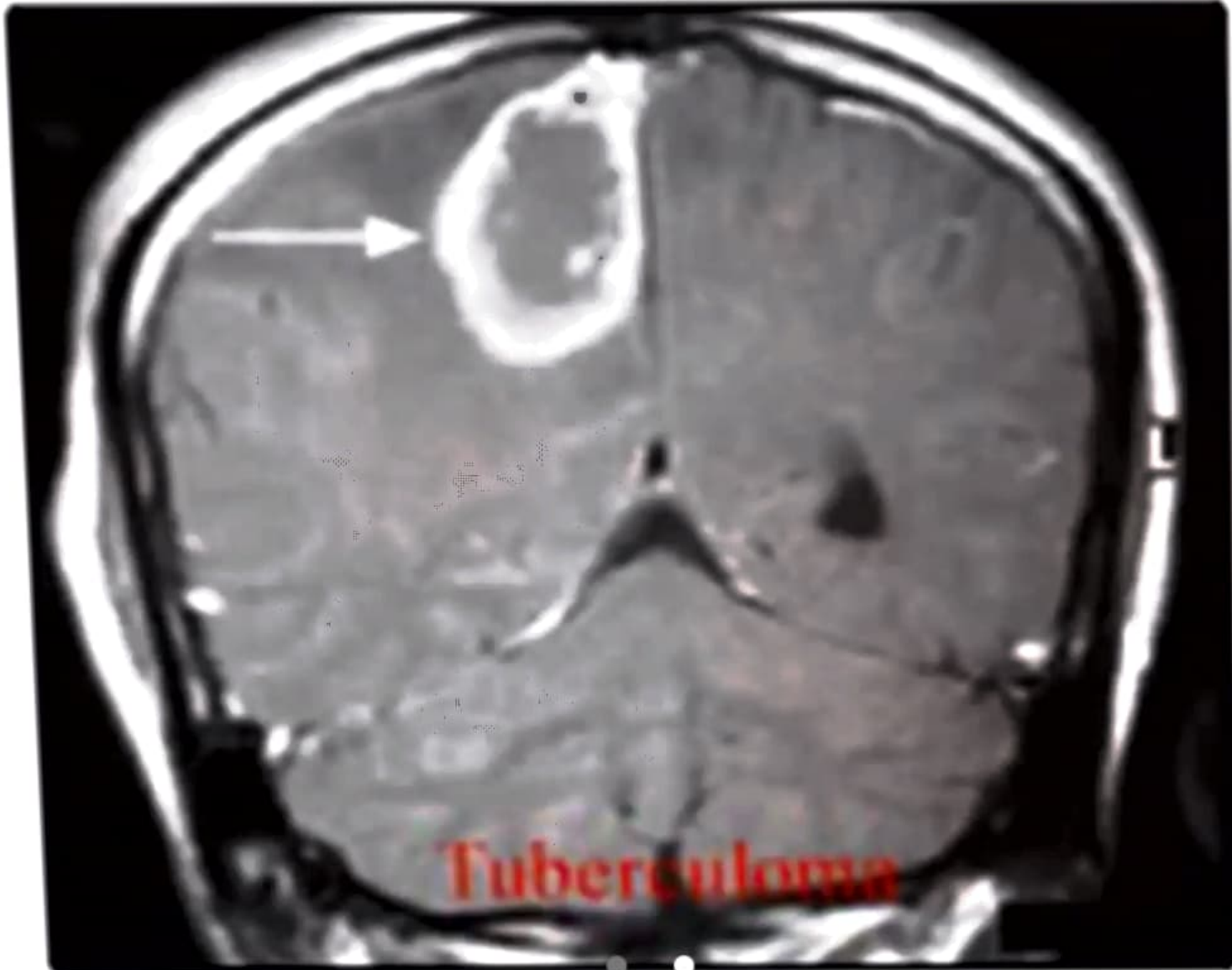
- **Diagnosis:** Microscopy

- **Treatment:** Paromomycin/ Azithromycin.

Response is poor with all available therapies.

Prevention of malnutrition & symptomatic relief vital in management.

Tuberculoma



Cryptococcal meningitis

Preferred Treatment Regimen (See Appendix H for protocols)

- **Induction:** initial treatment is with Amphotericin B (0.7 - 1.0 mg/kg/d) for 2 weeks or until the patient is clinically stable. Amphotericin B therapy should be administered in qualified health facilities capable of close clinical and laboratory patient monitoring. In facilities incapable of administering Amphotericin B sole, treatment with Fluconazole (400-800 mg/d for 12 weeks) may be an alternative, although treatment failure and mortality are high.
- **Consolidation phase:** Fluconazole 400-800 mg/d for 8 weeks; the higher dose must be used in patients on concomitant rifampicin
- **Maintenance/suppressive phase:** Fluconazole 200 mg/d
- **Discontinuation of Fluconazole:** Fluconazole can be stopped in patients who have been on ART and have documented immune reconstitution as shown by CD4 consistently above 100 cells/mm³ for at least 6 months.

Alternative Treatment Regimen

- **Induction:** Fluconazole 400-800 mg per day for 2 weeks

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Review the other opportunistic diseases