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CASE 1

King Edward VIII Hospital

- **49 yr old male**
- **Smear + PTB diagnosed in Jun'08 : no culture**
- **1st episode of PTB in '00: defaulted Rx after 1mt**
- **Presented to KEH on 19 Oct'08 already completed 2/12 intensive phase & 2/12 continuation phase anti-TB Rx**

Presenting complaints:19 Oct'08

- **Intermittent confusion, headaches, photophobia for 3/12**
- **No seizures, no motor/sensory deficit symptoms, no cranial nerve palsies**
- **Systemic enquiry : non-contributory**

Clinical examination

- **Wasted, dehydrated, pale.**
- **No jaundice, no oral lesions**
- **Chest: Clear**
- **CVS: Normal**
- **Abdomen: soft, no masses**
- **CNS: nuchal rigidity, no cranial nerve palsies, normal mental state, fundal exam normal, power=4/5 all limbs with normal tone. All reflexes presents except ankle jerks**

CLINICAL ASSESSMENT: suspected meningitis & L/P done

CSF Results

- **CSF pressure: not recorded**
- **Clear, colourless**
- **Polys: 2 cells/ul**
- **Lymphos: 10cells/ul**
- **Protein: 1.1g/L**
- **Glucose: 2.3mmol/L(41.44mg/dL)**
S-glucose 6mmol/(108.1mg/dL)

Globulins: raised

Crypto Ag: Negative

Gram stain: Negative

India ink: Negative

CSF results contd.

- **Bacterial culture: Negative**
- **AFB culture: negative**
- **PCR: HSV,VZV,EBV,Entero all Negative**
- **Working Diagnosis: TB Meningitis**

Management in ward

- **Started on dexamethasone 10mg bolus, followed by 4mg 6hrly. TB Rx changed to intensive phase**
- **2 days later he had 2 seizures:
loaded with phenytoin & emergency CT brain scan ordered**
- **CTB showed 3 ring-enhancing lesions on the R-frontal, R-parietal & R-temporal lobes with vasogenic oedema & compression of the R ventricle with dilatation of the contralateral system**

Management contd.

Based on CTS finding the patient was placed on the following treatment:

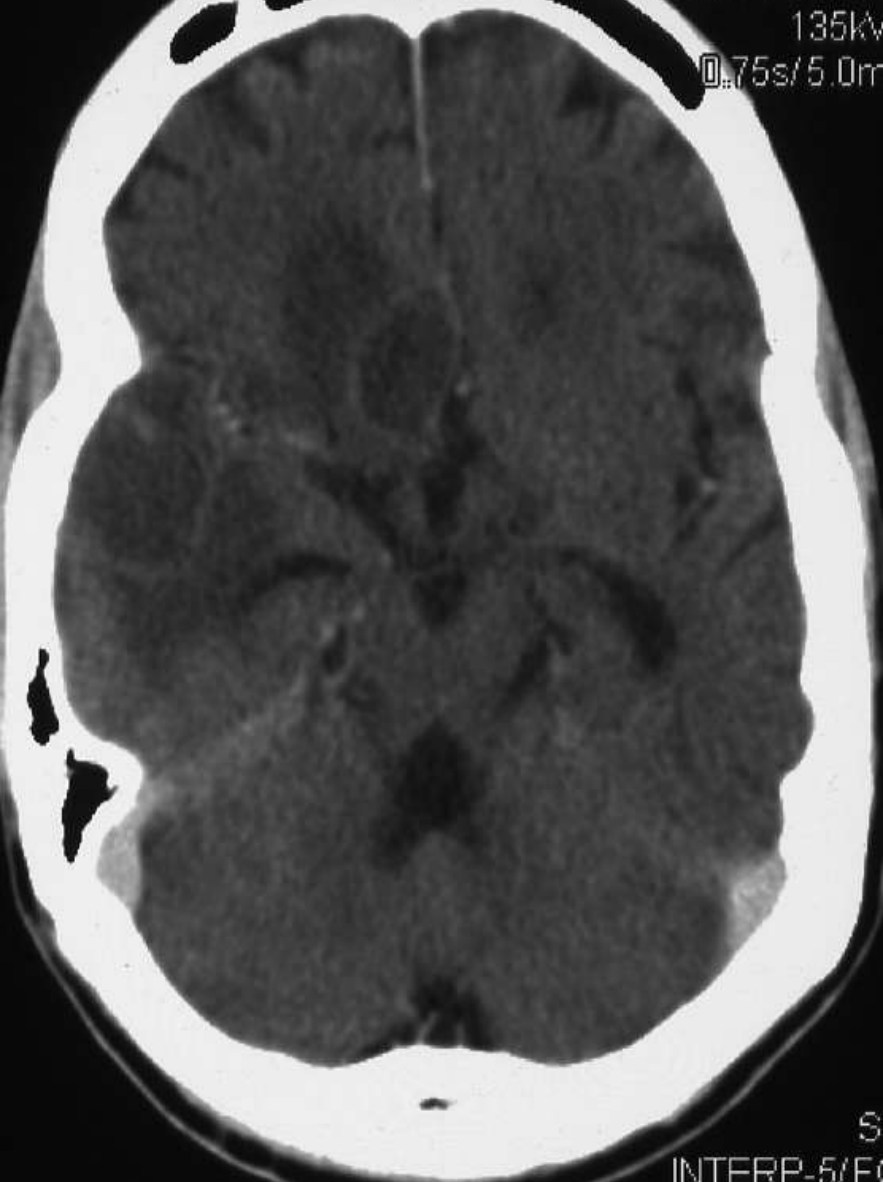
- **High dose bactrim at 10mg/kg trimethoprim in 2 divided doses for the possibility of toxoplasma abscess.**
- **Intensive phase anti-TB treatment continued.**
- **Dexamethasone was continued at does of 4mg 6hrly for 3 days and switched to prednisolone 60mg daily for 1 week and tapped down to 40mg daily.**
- **Phenytoin at 300mg daily per os & levels monitored**
- **Patient was worked up for anti-retroviral treatment.**

- **Basic investigations:**
- **FBC: Hb 8.6g%, WCC 4900/uL, Platelets 375 000/UI**
- **U&E: 134/4.1/107/21.5/4.8/63**
- **LFT: TP 58g/L, Alb16g/L, Tbili 9umol/IL, ALP 124U/L, GGT 407U/L, ALT 25U/L**
- **CD4 was 129cell/uL and VL of 410 000 (19/10/2008). Toxo serology IgM **negative**, IgG **(not done)****
- **Patient improved apart from marked wasting & remained seizure-free**

Discussion Questions

- **1) What is the best approach to intra-cranial mass lesions in the background of HIV/AIDS & limited resources**
- **2) Should this patient have had a CTS prior to the LP? If so what clinical cues should we use to decide that a CTS should be done prior to LP.**
- **3) Is there any value to repeating the scan at some point in this patient? At what point should it be repeated? How would a repeat scan help narrow the differential diagnosis?**

- **4) Management of Cerebral toxoplasmosis :
what to do in the case of allergy to co-
trimoxazole?**



Baseline Oct'09



After 3wks Nov'09

HIV & Intracranial mass lesions

- **>50% of HIV+ patients develop clinically significant neurological disease : may herald onset of AIDS**
- **Up to 15% may have intracranial lesions**
- **Clinical presentation & radiographic lesions may be indistinguishable**
- **Prognosis is poor : need for prompt & appropriate treatment**

Intracranial mass lesions

KZN-experience

Bhigjee et al (SAMJ 1999;89:1284-1288)

	Total biopsied n=38	
Diagnosis	No	%
Toxoplasmosis	15*	39.5
Brain abscess	6	15.7
Tuberculoma	4	10.5
“Encephalitis”	7	18.4
Cryptococcoma	2	5.2
Infarct	1	2.6
No diagnosis	3	8

Get chest X-ray, CD4+ lymphocyte count, serum toxoplasma IgG level, lumbar puncture with CSF for India ink smear and cryptococcal antigen, cytology, adenosine deaminase or PCR for *M. tuberculosis*, and bacterial/AFB/fungal smears, and serum and CSF syphilis serologies

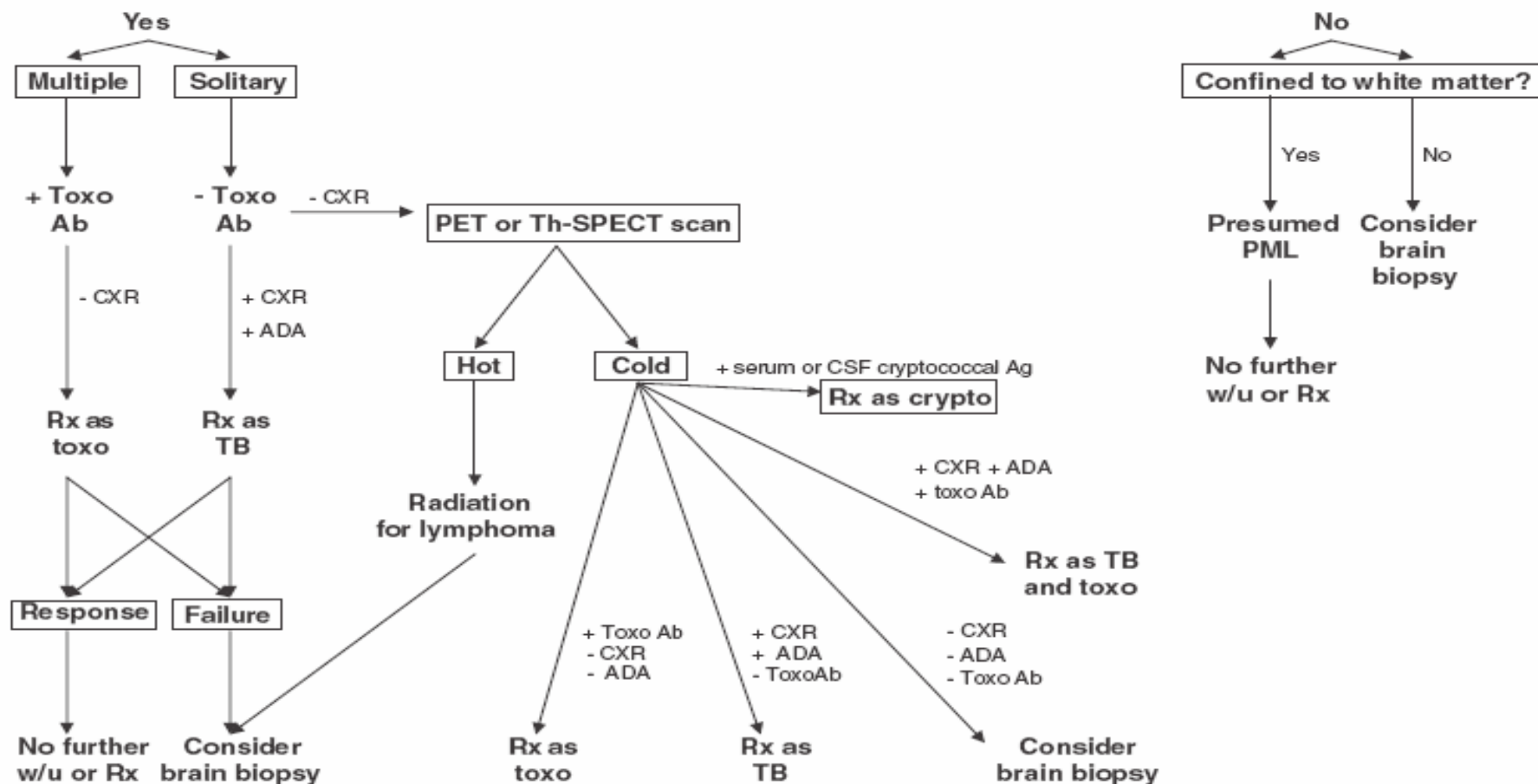


Figure 1 Enhancing lesions on CT or MRI scan. ADA=adenosine deaminase; AFB=acid-fast bacilli; CSF=cerebrospinal fluid; CXR=chest X-ray; MRI=magnetic resonance imaging; PCR=polymerase chain reaction; PET=positron-emission tomography; PML=progressive multifocal leukencephalopathy; Rx=treatment; SPECT=single positron-emission computed tomography (CT); TB=tuberculosis; toxo=toxoplasma; toxo ab=toxoplasma antibodies

Table 3 Therapeutic algorithm for HIV-seropositive patients with enhancing CNS mass lesions, for use in resource-limited areas

Patient acutely ill*	Toxoplasma IgG antibody	Chest X-ray	Initial empiric therapy
No	Negative	Chest X-ray suggestive of active or healed TB; or extrapulmonary TB known or suspected	Treat for TB
Yes	Negative	Chest X-ray suggestive of active or healed TB; or extrapulmonary TB known or suspected	Treat for TB and possibly for toxoplasmosis if CT scan suggestive (e.g., \geq six lesions; small)
Yes or no	Positive	Chest X-ray suggestive of active or healed TB; or extrapulmonary TB known or suspected	Treat for both toxoplasmosis and TB
No	Positive	No infiltrate suggesting active or healed TB	Treat for toxoplasmosis
Yes	Positive	No infiltrate suggesting active or healed TB	Treat for both toxoplasmosis and TB [†]

*Neurologic and/or systemic severity

[†]If in hyperendemic area, until clinical/radiologic improvement, then consider withdrawal of one of the medications depending on original CT scan features

CNS=central nervous system; CT=computed tomography; TB=tuberculosis

HIV & Intracranial mass lesions

- **Toxoplasmosis & tuberculosis frequent & treatable causes**
- **Brain abscess :NB cause requiring prompt neurosurgical intervention**
- **Primary CNS lymphoma : rare**
- **PROGNOSIS IS POOR**

Toxoplasmosis Drug therapy

- **Pyrimethamine**

**Load: 100-200mg then 50-75mg dly x 3-6wks
with folic acid 10-15mg/day**

PLUS

- **Sulfadiazine 4-6g/day for 3-6wks**
- **Clindamycin 600mg 6hrly for 3-6wks, OR**
- **Azithromycin 1.2-1.5gdly for 3-6wks**

OR

- **Co-Trimoxazole/ BACRTIM II qid x 4 wks**

NGIYABONGA

- **Thank YOU...**