UNIT FARMASI KLINIKAL DAN MAKLUMAT DRUG,
JAB. FARMASI, HOSPITAL USM
EDARAN MAKLUMAT UBAT

June 2023, Volume 55; Issue 3

DRUGS OF CHOICE FOR *TOXOPLASMA GONDII* ENCEPHALITIS IN ADULT PATIENTS WITH HIV INFECTION

- Toxoplasmosis, an infection with a worldwide distribution, is caused by the intracellular protozoan parasite, *Toxoplasma gondii*[1].
- Immunocompetent persons with primary infection are usually asymptomatic[1].
- In immunosuppressed patients, especially patients with AIDS, the parasite can reactivate and cause disease[2]
- **Indications for Initiating Primary Prophylaxis[3]:**
  - Toxoplasma IgG positive patients with CD4 count <100 cells/mm^3

Key to Acronyms/Symbol	
SMX	Sulfamethoxazole
TMP	Trimethoprim
LD	Loading dose
ART	Antiretroviral therapy
PCP	*Pneumocystis* Pneumonia
TE	Toxoplasmic Encephalitis
*	Non-standard

Preventing 1st Episode of *Toxoplasma gondii* Encephalitis (Primary Prophylaxis)[3]

Preferred regimen	Alternative regimens
PO SMX-TMP 800/160 mg OD	1. PO SMX-TMP 800/160 mg 3 times/week 2. PO SMX-TMP 400/80 mg OD 3. PO Dapsone 50 mg OD + (Pyrimethamine 50 mg + Leucovorin 25 mg) once weekly 4. PO (Dapsone 200 mg + Pyrimethamine 75 mg + Leucovorin 25 mg) once weekly 5. PO Atovaquone* 1500 mg OD 6. PO (Atovaquone* 1500 mg + Pyrimethamine 25 mg + Leucovorin 10 mg) OD

Indication for Discontinuing Primary Prophylaxis[3]:
- CD4 count >200 cells/mm^3 for >3 months in response to ART **or**
- CD4 count is 100-200 cells/mm^3 and HIV RNA levels remain below limits of detection for at least 3 - 6 months

Indication for Restarting Primary Prophylaxis[3]:
- CD4 count <100 to 200 cells/mm^3

Treatment for Acute Infection[3]

Preferred regimen	Alternative regimens
LD PO Pyrimethamine 200 mg, then **Body weight ≤60 kg**: PO Pyrimethamine 50 mg OD + PO Sulfadiazine* 1000 mg QID + PO Leucovorin 10–25 mg OD (can increase to 50 mg OD or BD) **Body weight >60 kg**: PO Pyrimethamine 75 mg OD + PO Sulfadiazine* 1500 mg QID + PO Leucovorin 10–25 mg OD (can increase to 50 mg OD or BD)	1. Pyrimethamine (LD PO 200 mg, then PO 50-75mg/day) + IV/PO Clindamycin 600 mg QID + PO Leucovorin 10–25 mg OD 2. IV/PO (SMX 25mg/kg + TMP 5mg/kg) BD 3. PO Atovaquone* 1500 mg BD + PO Pyrimethamine 50-75mg OD + Leucovorin 10-25mg PO OD 4. PO Atovaquone* 1500 mg BD + PO Sulfadiazine* 1000-1500 mg QID 5. PO Atovaquone* 1500 mg BD

Duration[3]: At least 6 weeks **OR** longer if clinical/radiologic disease is extensive or response is incomplete at 6 weeks

All patients should be continued on Chronic Maintenance Therapy after completed Acute Therapy

DRUGS OF CHOICE FOR *TOXOPLASMA GONDII* ENCEPHALITIS IN ADULT PATIENTS WITH HIV INFECTION

Chronic Maintenance Therapy for *Toxoplasma gondii* Encephalitis (Secondary Prophylaxis)[3]

Preferred regimen	Alternative regimens
PO Pyrimethamine 25–50 mg OD + PO Sulfadiazine* 2000–4000 mg daily (in 2 to 4 divided doses) + PO Leucovorin 10–25 mg OD	1. PO Clindamycin 600 mg TDS + PO (Pyrimethamine 25–50 mg + Leucovorin 10–25 mg) OD 2. PO SMX-TMP 800/160 mg BD 3. PO SMX-TMP 800/160 mg OD 4. PO Atovaquone* 750 - 1500 mg BD + PO (Pyrimethamine 25 mg + Leucovorin 10 mg) OD 5. PO Atovaquone* 750 - 1500 mg BD + PO Sulfadiazine* 2000 - 4000 mg daily (in 2 to 4 divided doses) 6. PO Atovaquone* 750 - 1500 mg BD

Discontinuing Chronic Maintenance Therapy[3]:
- Successfully completed initial therapy,
- Remain asymptomatic of signs and symptoms of TE, **and**
- CD4 count >200 cells/mm^3 for >6 months in response to ART

Criteria for Restarting Secondary Prophylaxis/Chronic Maintenance[3]:
- CD4 count <200 cells/mm^3

All the recommended regimens for the prevention and treatment of toxoplasmosis are also effective in preventing PCP except when using the clindamycin regimens[3].

References

1. Peterson, E. (2021). Toxoplasmosis: Acute systemic disease. In J. Mitty (Ed.), UpToDate. Retrieved April 16th, 2023, from https://www.uptodate.com/contents/toxoplasmosis-acute-systemic-disease
2. Gandhi, R.T. (2023). Toxoplasmosis in patients with HIV. In J. Mitty (Ed.), UpToDate. Retrieved April 16th, 2023, from https://www.uptodate.com/contents/toxoplasmosis-in-patients-with-hiv
3. Panel on Guidelines for the Prevention and Treatment of Opportunistic Infections in Adults and Adolescents with HIV. Guidelines for the Prevention and Treatment of Opportunistic Infections in Adults and Adolescents with HIV. National Institutes of Health, Centers for Disease Control and Prevention, HIV Medicine Association, and Infectious Diseases Society of America. Year. Available at https://clinicalinfo.hiv.gov/en/guidelines/hiv-clinical-guidelines-adult-and-adolescent-opportunistic-infections/toxoplasma-gondii. Accessed (16/4/2023)
4. Toxoplasmosis: Causes, Symptoms, Diagnosis & Treatment. Retrieved from https://my.clevelandclinic.org/health/diseases/9756-toxoplasmosis (16/4/2023)

Prepared by
Nur Aida Murni Mamamad
Arif Ismail
Asyraf Suhaimi
Syahira Afiqah Mohd Pauzi

Edited by
Khairul Bariah johan @ Rahmat