Duke Adult Toxoplasmosis (*Toxoplasma gondii*) Screening and Prophylaxis in Hematopoietic Cell Transplant

Toxoplasmosis Pre-Transplant Screening

Clinical scenario	Screening serology (IgG)	Comments
Autologous HCT candidates Allogeneic HCT candidates	Send *Toxoplasma* IgG If IgG positive, send baseline *Toxoplasma* PCR[a]	Most *Toxoplasma* seropositive testing reflects prior (remote) exposure. Reactivation is the primary mechanism for toxoplasmosis in transplant recipients. This risk is notably higher in allogeneic HCT in comparison to autologous HCT. **If toxoplasma PCR is positive or concerns for acute *Toxoplasma* infection, consult Transplant Infectious Diseases**
Donors (Allogeneic HCT only)	No screening currently performed	Cases of toxoplasmosis have been described when a *Toxoplasma* seronegative recipient receives a graft from a seropositive donor.

Toxoplasmosis Prophylaxis and Monitoring (for *Toxoplasma* Seropositive HCT patients)

Transplant Type	Pre-transplant Prophylaxis	Post-transplant Prophylaxis	Duration of Prophylaxis	Surveillance
Allogeneic (All)	TMP/SMX 1 DS tablet PO Q12h (first day of conditioning through day -2) <u>Unable to tolerate PO TMP/SMX:</u> TMP/SMX 5mg/kg (based on TMP component) IV Q12h <u>Sulfa allergic:</u> Refer to PJP prophylaxis for sulfa allergic candidates. No additional toxoplasmosis prophylaxis given pre-transplant.	TMP/SMX 1 SS tablet daily to start with engraftment (ANC ≥ 1000 cells/microL) or day +30 [whichever comes first] <u>Alternative:</u> Atovaquone 1500 mg PO daily[b] can be substituted for TMP/SMX: 1) If sulfa allergic -OR- 2) If delayed engraftment (until patients can be transitioned to TMP/SMX)	-At least 6 months post-transplant -Extend prophylaxis beyond 6-months if CD4<200 and/or remains on IST	Weekly *Toxoplasma* PCR[a] testing from day 0 thru at least day +30 Continue weekly *Toxoplasma* PCR[a] testing from day +30 thru at least day +100 in the following scenarios: 1) High risk patients (i.e., UCT, Haplo, T-cell depletion, GVHD) on atovaquone in lieu of TMP/SMX prophylaxis[b] 2) All other patients <u>not</u> on *Toxoplasma* prophylaxis (i.e., TMP/SMX or atovaquone)
Autologous (Scleroderma)	Refer to pre-transplant allogeneic prophylaxis (above)	Refer to post-transplant allogeneic prophylaxis (above)	Refer to allogeneic duration (above)	Refer to allogeneic surveillance (above)
Autologous (Standard)	None	None	N/A	N/A
Autologous (Increased Risk) ***Consider prophylaxis in the following increased risk groups[c]:*** - CD34 selected graft - Purine analog therapy (e.g. fludarabine, cladribine) and/or other T-cell depleting agents in the preceding 6-12 months	None	Refer to post transplant allogenic prophylaxis (above)	At least 6-months post-transplant	None

DS: double strength, GVHD: graft versus host disease, Haplo: haploidentical transplant, IST: immunosuppressive therapy, IV: intravenous, N/A: not applicable, PO: by mouth, SS: single strength, TMP/SMX: trimethoprim/sulfamethoxazole, UCT: umbilical cord transplant.

a. Send *Toxoplasma* blood PCR (Viracor, DUH test code: LAB6869).

b. The most optimal agent for toxoplasmosis prophylaxis is TMP/SMX and patients should be switched to this agent when feasible. Breakthrough toxoplasmosis has been reported with atovaquone prophylaxis.

c. List is not all-inclusive. Consider prophylaxis in additional highly immunosuppressed candidates on a case-by-case basis.

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Duke Adult Pneumocystis (*Pneumocystis jirovecii*) Prophylaxis in Hematopoietic Cell Transplant

This prophylaxis protocol is intended for *Toxoplasma* seronegative candidates/recipients. If *Toxoplasma* seropositive, please follow the toxoplasmosis screening and prophylaxis protocol which will provide prophylaxis for both *Toxoplasma* and *Pneumocystis jirovecii* (PJP).

Transplant Type	Pre-transplant Prophylaxis	Post-transplant Prophylaxis	Duration of Prophylaxis
Allogeneic (All)	TMP/SMX 1 DS tablet PO Q12h (first day of conditioning through day -2) <u>Unable to tolerate PO TMP/SMX:</u> TMP/SMX 5mg/kg (based on TMP component) IV Q12h <u>Sulfa allergic:</u> Inhaled Pentamidine 300 mg x 1	TMP/SMX 1 SS tablet daily to start with engraftment (ANC ≥ 1000 cells/microL) or day +30 [whichever comes first] <u>Sulfa allergic options[a]:</u> -Atovaquone 1500 mg PO daily -Inhaled Pentamidine 300 mg monthly -Dapsone 100 mg PO daily (non-G6PD deficient)[b]	-At least 6 months post-transplant -Extend prophylaxis beyond 6-months if CD4<200 and/or remains on IST
Autologous (Scleroderma)	Refer to pre-transplant allogeneic prophylaxis (above)	Refer to post-transplant allogeneic prophylaxis (above)	Refer to allogeneic duration (above)
Autologous (Standard)	None	None	N/A
Autologous (Increased Risk) ***Consider prophylaxis in the following increased risk groups[c]:*** - CD34 selected graft - Purine analog therapy (e.g. fludarabine, cladribine) and/or other T-cell depleting agents in the preceding 6-12 months	None	**If prophylaxis applied** then refer to post-transplant allogeneic prophylaxis (above)	At least 6-months post-transplant

DS: double strength, GVHD: graft versus host disease, IST: immunosuppressive therapy, IV: intravenous, N/A: not applicable, PO: by mouth, SS: single strength, TMP/SMX: trimethoprim/sulfamethoxazole.

a. The optimal agent for prophylaxis is TMP/SMX, utilize this agent whenever feasible.

b. Dapsone should NOT be used in patients with glucose-6-phosphate dehydrogenase (G6PD) deficiency. Notable toxicities associated with dapsone therapy include methemoglobinemia and hemolytic anemia.

c. List is not all-inclusive. Consider prophylaxis in additional highly immunosuppressed candidates on a case-by-case basis.

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