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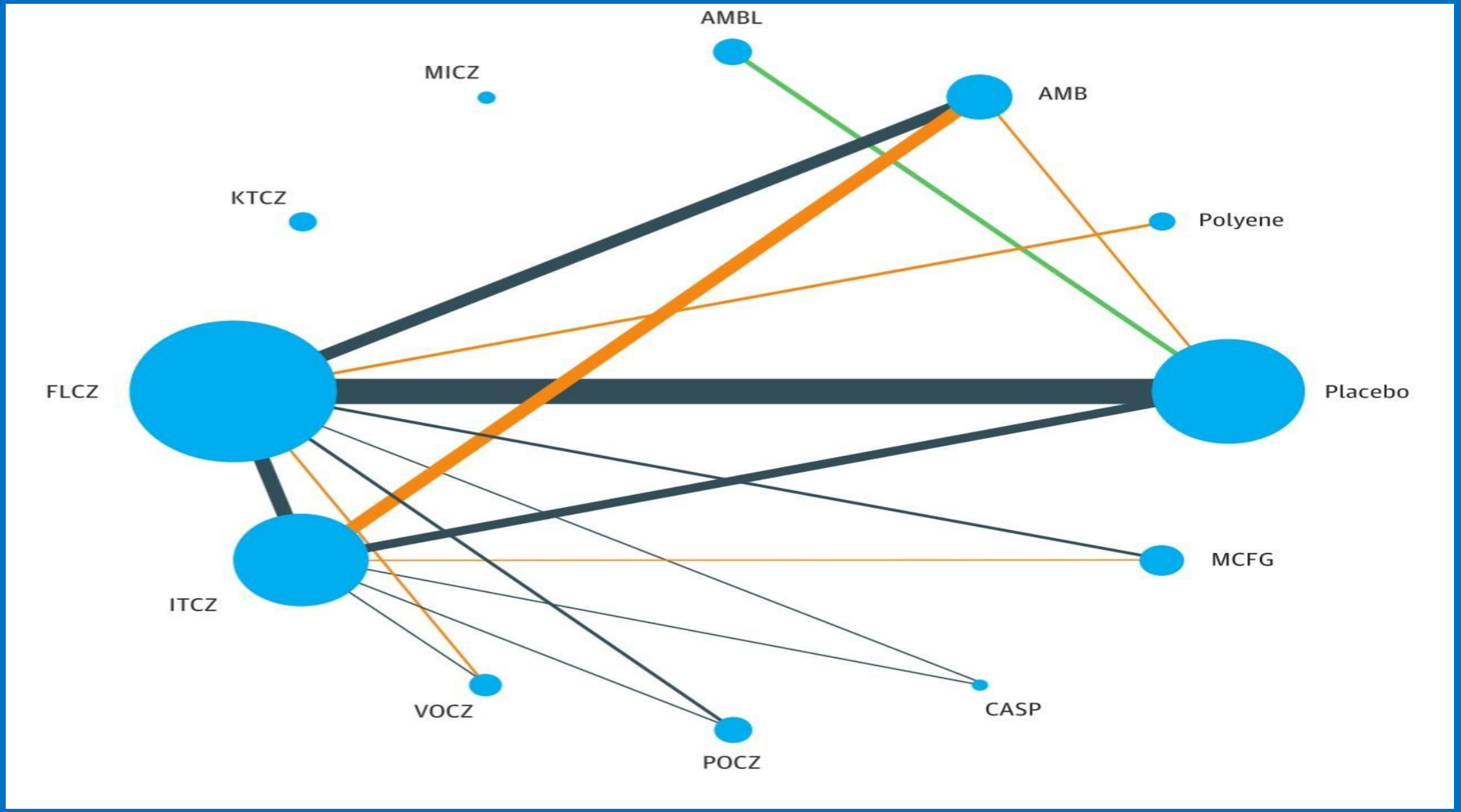
Antifungal Prophylaxis


AMBL
MICZ
AMB
KTCZ
Polyene
FLCZ
Placebo
MCFG
ITCZ
VOCZ
CASP
POCZ

National Comprehensive Cancer Network®

NCCN Guidelines Version 1.2019
Prevention and Treatment of Cancer-Related Infections

Overall Infection Risk in Patients with Cancer[a]	Disease/Therapy Examples	Fever & Neutropenia Risk (See FEV-2)	Antimicrobial Prophylaxis[d]
Low	• Standard chemotherapy regimens for most solid tumors • Anticipated neutropenia less than 7 d	Incidence low	• Bacterial - None • Fungal - None • Viral - None unless prior HSV episode
Intermediate	• Autologous HCT • Lymphoma[c] • Multiple myeloma[c] • CLL[c] • Purine analog therapy (ie, fludarabine, clofarabine, nelarabine, cladribine) • Anticipated neutropenia 7–10 d	Incidence usually high, significant variability may exist	• Bacterial - Consider fluoroquinolone prophylaxis during neutropenia[e] • Fungal - Consider prophylaxis during neutropenia and for anticipated mucositis (See INF-2); consider PCP prophylaxis (See INF-6) • Viral - During neutropenia and longer depending on risk (See INF-3, INF-4, INF-5)
High[b]	• Allogeneic HCT including cord blood • Acute leukemia ▸ Induction ▸ Consolidation/maintenance • Alemtuzumab therapy • GVHD treated with high-dose steroids (>20 mg daily) • Anticipated neutropenia greater than 10 d	Incidence usually high, significant variability may exist	• Bacterial - Consider fluoroquinolone prophylaxis during neutropenia[e] • Fungal - Consider prophylaxis during neutropenia (See INF-2); consider PCP prophylaxis (See INF-6) • Viral - During neutropenia and longer depending on risk (See INF-3, INF-4, INF-5)

Overall Infection Risk in Patients with Cancer[a]	Disease/Therapy Examples	Antifungal Prophylaxis[f,i] See Antipneumocystis Prophylaxis (INF-6)	Duration
Intermediate to High	ALL	Consider: • Fluconazole[j] or micafungin[k] • Amphotericin B products[l] (category 2B)	Until resolution of neutropenia
	MDS (neutropenic)	Consider: • Posaconazole[j] (category 1) • Voriconazole,[j] fluconazole,[j] micafungin,[k] or amphotericin B products[l] (all category 2B)	
	AML (neutropenic)		
	Autologous HCT with mucositis[g]	Consider: • Fluconazole[j] or micafungin[k] (both category 1)	
	Autologous HCT without mucositis	Consider no prophylaxis (category 2B)	N/A
	Allogeneic HCT (neutropenic)	Consider: • Fluconazole[j] or micafungin[k] (both category 1) • Voriconazole,[j] posaconazole,[j] or amphotericin B products[l] (all category 2B)	Continue during neutropenia[m]
	Significant GVHD[h]	Consider: • Posaconazole[j] (category 1) • Voriconazole,[j] echinocandin, or amphotericin B products[l] (all category 2B)	Until resolution of significant GVHD

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Journal of Antimicrobial Chemotherapy

European guidelines for primary antifungal prophylaxis in adult haematology patients: summary of the updated recommendations from the European Conference on Infections in Leukaemia

Table 3. ECIL recommendations on primary antifungal prophylaxis in adult patients with AML and MDS undergoing intensive remission-induction chemotherapy[a]

Antifungal agent	Grading	Comments
Posaconazole oral solution 200 mg q8h *or* tablet 300 mg q24h following a loading dose of 300 mg q12h on day 1	A-I	Recommended if baseline incidence of mould infections is high. Given the increased absorption of the tablet, it is likely that the need for therapeutic drug monitoring will become restricted to specific populations (e.g. severe mucositis).
Fluconazole 400 mg q24h	B-I	Only recommended if the incidence of mould infections is low. Fluconazole may be part of an integrated care strategy together with a mould-directed diagnostic approach.
Itraconazole oral solution 2.5 mg/kg q12h	B-I	Recommended if baseline incidence of mould infections is high. May be limited by drug–drug interactions or patient tolerability. It is recommended to monitor serum drug concentrations.
Voriconazole 200 mg q12h	B-II	Recommended if baseline incidence of mould infections is high. It is recommended to monitor serum drug concentrations.
All echinocandins	C-II	Insufficient data on efficacy and tolerability.
Liposomal amphotericin B	C-II	Insufficient data on dose, frequency and duration, as well as on efficacy and tolerability.
Lipid-associated amphotericin B	C-II	Insufficient data on dose, frequency and duration, as well as on efficacy and tolerability.
Aerosolized liposomal amphotericin B (10 mg twice weekly)	B-I	Only when combined with fluconazole 400 mg q24h.
Amphotericin B deoxycholate	A-II against	
Aerosolized amphotericin B deoxycholate	A-I against	

Table 4. ECIL recommendations on primary antifungal prophylaxis in adult allogeneic HSCT recipients: pre-engraftment period

	Pre-engraftment risk of mould infections	
Antifungal agent	low	high
Fluconazole 400 mg q24h	A-I	
Posaconazole oral solution 200 mg q8h *or* tablet 300 mg q24h following a loading dose of 300 mg q12h on day 1	B-II	B-II
Itraconazole oral solution 2.5 mg/kg q12h	B-I	B-I
Voriconazole 200 mg q12h	B-I	B-I
Micafungin 50 mg q24h	B-I	C-I
Caspofungin and anidulafungin	no data	no data
Liposomal amphotericin B	C-II	C-II
Aerosolized liposomal amphotericin B (10 mg twice weekly) plus fluconazole 400 mg q24h	C-III	B-II
Fluconazole 400 mg q24h		A-III against

Table 5. ECIL recommendations on primary antifungal prophylaxis in adult allogeneic HSCT recipients: post-engraftment period

Antifungal agent	High risk GvHD
Posaconazole oral solution 200 mg q8h *or* tablet 300 mg q24h following a loading dose of 300 mg q12h on day 1	A-I[a,b]
Itraconazole oral solution 2.5 mg/kg q12h	B-I[b]
Voriconazole 200 mg q12h	B-I[b]
Micafungin 50 mg q24h	C-II
Caspofungin and anidulafungin	no data
Liposomal amphotericin B	C-II
Aerosolized liposomal amphotericin B (10 mg twice weekly) plus fluconazole 400 mg q24h	no data
Fluconazole 400 mg q24h	A-III against

Journal of Fungi

MDPI

Article

Outcomes of Antifungal Prophylaxis in High-Risk Haematological Patients (AML under Intensive Chemotherapy): The SAPHIR Prospective Multicentre Study

- Cornely et al. demonstrated more prevention of IFDs with the use of posaconazole than with fluconazole or itraconazole.
- Increased overall survival of posaconazole treated patients undergoing induction chemotherapy for AML or MDS .
- In another study, Vehreschild et al. showed a decreased IFD incidence rate, number of febrile days and hospitalisation duration upon the introduction of posaconazole prophylaxis in AML patients undergoing first remission-induction chemotherapy
- incidence of probable/proven IFDs was 2% in the posaconazole group and 8% in the fluconazole or itraconazole group.

Fungi 2020, 6, 281; doi:10.3390/jof6040281

JAMA Network | Open

Original Investigation | Infectious Diseases

Comparison of Antifungal Prophylaxis Drugs in Patients With Hematological Disease or Undergoing Hematopoietic Stem Cell Transplantation

A Systematic Review and Network Meta-analysis

Jing Wang, MD, PhD; Min Zhou, MD, PhD; Jing-Yan Xu, MD, PhD; Rong-Fu Zhou, MD, PhD; Bing Chen, MD, PhD; Yuan Wan, PhD

Voriconazole may be the best choice for patients undergoing HSCT, and posaconazole may be the best prophylactic option for patients with AML or MDS.

Posaconazole is recommended for IFIs during remission induction chemotherapy for AML and MDS.

JAMA Network Open. 2020;3(10):e2017652. doi:10.1001/jamanetworkopen.2020.17652 (Reprinted

Multiple myeloma & Lymphoma

- Primary antifungal prophylaxis is not recommended

Thank You!