

Big Bugs #3

class	pathogen	characteristic	infection	common Rx	other
fungi	(Tinea) Trichophyton species	superficial	variety of superficial infections	topical or systemic azoles, triazoles or terbinafine tabs or griseofulvin	common
	regional systemic mycoses	variety of systemic infections		amphotericin B	rare
opportunistic mycoses	Candida albicans	yeast	thrush, vaginitis, systemic	fluconazole	common and increasing
	other Candida sp.	yeast	systemic		common, often resistant, and increasing in importance
	Cryptococcus neoformans	yeast	meningitis in AIDS	fluconazole, caspofungin, voriconazole	common
	Aspergillus and Mucor sp. and others	filamentous fungi	systemic in immunocompromised	amp B, voriconazole, caspofungin	increasing
virus	Herpesviridae	DNA		acyclovir, famoxyclovir, valcyclovir	common
	HSV1		cold sores		
	HSV2		genital herpes		
	varicella zoster		chicken pox, shingles	ganciclovir, foscarnet, cidofovir	common in immunocompromised
	CMV		retinitis (HIV) pneumonia (transplants) and other sites		
	RSV	RNA	lungs in infants	ribavirin (inhalation)	uncommon
	influenza A	RNA	flu	amantadine	common
	influenza A, B			zanamivir, oseltamivir	

virus (con't.)	Hep B	DNA	hepatitis with risk of chronic infection	adefovir, interferon	uncommon with vaccination
	Hep C	RNA	hepatitis with risk of cirrhosis	ribavirin plus interferon	common
	HIV	RNA retrovirus	AIDS	see notes: not responsible for this material	common

Big Drugs #3

class	drug	big use	MDA	tox	other
antifungals	polyene	broad spectrum	binds to ergosterol in membranes → pore	renal infusion problems	fungicidal no CNS
	nucleoside		fungal cytosine deaminase converts drug to 5-FU	myelosuppression	rarely used alone; crosses into CNS
imidazole	ketoconazole	rel. broad spectrum	inhibits 14- α demethylase in conversion of lanosterol to ergosterol	hepatotox	big P450 3A4 inhibitor
triazole	fluconazole	yeasts		well tolerated	P450 inhibition (CNS OK)
	itraconazole	fungi		nausea, small risk of hepatotox, visual problems	P450 inhibitor
	voriconazole	fungi and yeasts, seems to work as well as amp B for some!		visual problems, pregnancy cat. D	aP450 inhibitor (CNS OK)
	terbinafine	dermatophytic	inhibits squalene epoxidase (↓ lanosterol)	rare hepatotox	no drug interactions
	griseofulvin		inhibit mitosis	headache, preg. cat c	long therapy
echinocandin (lipopeptide)	caspofungin	aspirgillosis and systemic Candida	1,3 β -glucan syn. inhibitor	headache (but well tolerated)	promising drug for serious infections
antivirals	zanamivir	influenza Rx	↓ neuraminidase	rare	by inhalation
	oseltamivir				PO
	ribavirin	RSV	guanine analog that ↓	headache, dizziness	strong teratogen

		RNA polymerase		
acyclovir	HSV 1, 2, IV use for systemic infections, shingles	phosphorylated by viral thymidine pinase to ↓ DNA polymerase	headache, rare renal	short T 1/2
famciclovir	HSV 1, 2, shingles			prodrug for penciclovir
valcyclovir				prodrug for acyclovir
ganciclovir	CMV	guanine analog to block viral DNA polylmerase	myelosuppression and other	
valganciclovir			PO drug for prophylaxis	
foscarnet		pyrophosphate analog to ↓ viral DNA polymerase	renal, electrolytic imbalance	
cidofovir		cytosine analog ↓ DNA polymerase	renal	long T 1/2

Special Problems

Drug Interactions

All triazoles and imidazoles inhibit P450

Pregnancy cat. C or D

triazoles and imidazoles

ribavirin

flucytosine

griseofulvin