

Table 4: Summary of Antiretroviral Therapies

NUCLEOSIDE REVERSE TRANSCRIPTASE INHIBITORS				
Name	Dosage	Common Side Effects	Special Instructions	Drug Interactions
Zidovudine (ZVD, AZT, Retrovir)	200 mg tid or 300 mg bid (dose adjustment may be necessary for hepatic and renal disease).	Neutropenia, anemia, nausea, myalgia, malaise, headache, insomnia, finger nail discoloration.	Take with low fat meals to decrease nausea and myalgias.	Increased risk of neutropenia with ganciclovir and trimethoprim sulfamethazole. Methadone increases blood levels. Stavudine may decrease effectiveness. Phenytoin alters metabolism (may increase or decrease levels).
Didanosine (ddl, Videx) Videx EC available for once daily dosing	<60 kg: 125 mg every 12 hrs. >60 kg: 2-100 mg tablets or 250 mg powder every 12 hours or 400 mg may also be given as 200 mg tabs at hs; <60 kg: 125 mg in 2 tabs or 167 mg powder every 12 hours.	Peripheral neuropathy, abdominal pain, dry mouth, altered taste, diarrhea, pancreatitis, rash.	Always take both tablets or all the powder to ensure correct dosage. Take with about 4 oz. of water. Should be taken on an empty stomach (one half hour before meals or 1-2 hours after a meal). Dapsone, ketoconazole, itraconazole should be taken 2 hours after didanosine. Report any numbness, burning, or tingling. Tetracycline and fluoroquinolone should be administered 2 hours before or after ddl. Indinavir should be administered at least 1 hour	Buffer affects dapsone, ketoconazole, IDV, RTV, DLV. Ganciclovir increases blood levels. Concomitant administration of pentamidine increases risk of pancreatitis. Avoid alcohol.

			before or after ddl on an empty stomach. Ritonavir should be administered at least 2 hours before or after ddl.	
Zalcitabine (ddC, Hivid)	0.75 mg tid	Peripheral neuropathy, pancreatitis, rash, fever, aphthous ulcer, anemia, elevated liver enzymes.	Avoid alcohol. Report any numbness, burning or tingling. Should be taken on an empty stomach.	Similar toxicity to didanosine and stavudine.
Stavudine (D4T, Zerit)	>60 kg: 40 mg bid; <60 kg: 30 mg bid	Peripheral neuropathy, elevated liver enzymes, nausea, diarrhea, myalgia.	Avoid alcohol. Report any numbness, burning, or tingling.	Similar toxicity to zalcitabine and didanosine.
Lamivudine (3TC, Epivir)	150 mg bid or 300mg qd	Mild rash, headache, diarrhea, hair loss, neutropenia.	Can be taken with food.	Trimethoprim sulfamethazole increases blood levels.
Abacavir (Ziagen)	300 mg bid	Fatal hypersensitivity reactions. Common side effects: nausea, vomiting, diarrhea, anorexia, insomnia, fever, headache, skin rash.	Taken with or without food.	Alcohol decreases the elimination of abacavir causing an increase in overall exposure.
Lamivudine/ Zidovudine (Combivir)	1 tab bid (150 mg of lamivudine and 300 mg of zidovudine per tablet).	Headache, malaise, fatigue, nausea, diarrhea, cough.	Can be taken with food to decrease nausea.	Coadministration of ganciclovir, interferon-alpha or other bone marrow suppressive or cytotoxic agents may increase the hematotoxicity of ZVD.
Trizivir (AZT and 3TC and ABC)	1 tab bid	Any of the common side effects of AZT, 3TC, or ABC.	No food or water restrictions.	Recommended to start with abacavir, lamivudine, and zidovudine separately for the first 6-8

				weeks before starting the combination Trizivir to detect specific side effects.
Tenofovir (Viread)	300 mg daily	Possible GI intolerance	Best absorbed when taken with a high fat meal.	Potentially increased rates of peripheral neuropathy and pancreatitis when used with ddl. Levels increased when used with Lopinavir.

NONNUCLEOSIDE REVERSE TRANSCRIPTASE INHIBITORS

Name	Dosage	Common Side Effects	Special Instructions	Drug Interactions
Nevirapine (Viramune)	200 mg, every day for 2 weeks, then 200 mg every 12 hours.	Rash, pruritus, fever, thrombocytopenia, elevated liver enzymes.	Discontinue if severe rash develops. Monitor liver function tests. Should not be used concurrently with hormonal contraception.	Decreases protease inhibitor levels (induces cytochrome P450 enzymes).
Delavirdine (Rescriptor)	400 mg tid	Rash, fever, elevated liver enzymes.	Take on empty stomach. Monitor liver function tests. Should be taken 1 hour before or after ddl or antacids.	Increases protease inhibitors, clarithromycin, dapson, rifabutin, ergot alkaloids, dihydropyrides, quinidine, and warfarin levels (inhibits cytochrome P450 enzymes).
Efavirenz (Sustiva)	600 mg po daily	Psychiatric and nervous system symptoms such as dizziness, abnormal dreams, impaired concentration, delusions, insomnia, abnormal behavior and rash.	Taken with or without food. If taken with food, a high fat meal should be avoided. If taken at bedtime, there is improved tolerability of nervous system side effects.	Drugs that induce CYP3A4 activity such as Phenobarbital, rifampin and rifabutin, would be expected to increase the clearance of efavirenz therefore resulting in lower plasma concentrations.

				Warfarin plasma concentrations and effects are potentially increased or decreased with efavirenz. The dose of indinavir should be increased from 800 mg to 1000 mg if co-administered with efavirenz. Saquinavir and clarithromycin plasma concentrations are decreased by efavirenz.
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PROTEASE INHIBITORS

Name	Dosage	Common Side Effects	Special Instructions	Drug Interactions
Indinavir (Crixivan)	800 mg tid	Nephrolithiasis, hyperbilirubinemia, fatigue, headache, nausea, abdominal pain.	Lactose intolerant patients should take with lactaid tablets. Should be taken on an empty stomach or with light, low to nonfat meal. Increase water intake each day (at least 48 oz of fluid in adults) Never take double doses unless instructed.	Inhibits cytochrome P450. Ketoconazole increases blood levels; rifabutin and rifampin decrease blood levels; astemizole, terfenadine, cisapride and triazolam increase the risk of dysrhythmias.
Nelfinavir (Viracept)	750 mg tid or 1250 mg bid	Diarrhea, elevated liver enzymes.	Never take double doses unless instructed. Should be taken with a meal or light snack. Should be administered 2 hours before or 1 hour after ddl.	Inhibits cytochrome P450. Rifabutin and rifampin decrease blood levels; astemizole and cisapride increase risk of dysrhythmias.
Ritonavir (Norvir) (Now used also	600 mg bid	Nausea, vomiting, diarrhea, taste	Therapy should be	A potent inhibitor of cytochrome

as a pharmacokinetic enhancement agent).		alterations, parasthenias (hands, feet and lips), elevated triglycerides.	started at a low dose and increased over 5 days to decrease nausea. Never take double doses unless instructed. Monitor liver function tests. Evaluate patient's medications profile before administering.	P450. Numerous drug interactions.
Saquinavir (Fortovase soft gel capsule; Invirase hard gel capsule)	Fortovase 3600 mg daily or 1200mg q8h; Invirase 1800 mg daily or 600 mg q8h.	Headache, nausea, diarrhea.	Should be taken within 2 hours of a full meal. Never take a double dose unless instructed. Lactose intolerant patients should take with lactaid tablets.	Inhibits cytochrome P450. Rifabutin and rifampin decrease blood levels; ketoconazole, itraconazole and ritonavir increase blood levels; terfenadine and astemizole increase risk of dysrhythmias.
Amprenavir (Agenerase)	1200 mg bid	Nausea, vomiting, diarrhea, rash, oral parathesias, dysgeusia and mood disorders	Avoid taking with high fat meal. Take one hour apart from antacids or ddi. Use with caution if patient has a sulfonamide allergy or is taking sildenafil (Viagra).	Do not take with Vitamin E supplements.
Lopinavir/Ritonavir (Kaletra)	400/100 mg 3 caps bid	Abdominal pain, asthenia, headache, nausea, vomiting, diarrhea, insomnia, rash	Avoid alcohol. ddi should be taken 1 hour before or 2 hours after Kaletra.	Inhibits cytochrome P450 3A. Same as Norvir.
Adapted from Porche, D. (1999). State of the art: Antiretroviral and prophylactic treatment in HIV/AIDS. In D.W. Sherman (Ed), HIV/AIDS update (pp. 95		112). <i>Nursing Clinics of North America</i> . Philadelphia, PA: WB Saunders Co.		

FUSION INHIBITOR				
Name	Dosage	Common Side Effects	Special Instructions	Drug Interactions
Enfuviritide (Fuzeon, T20)	90 mg/day sq bid	Local site reactions can be severe.	Not recommended while breast-feeding.	None
(Bartlett & Gallant, 2003)				