

(A) Nucleoside/Nucleotide Reverse Transcriptase Inhibitors (NRTI)

Drug	Dosage	Potential side effects	Remarks
Zidovudine (AZT) Retrovir 100mg/cap 250mg/cap	200mg 3 times/day or 300mg 2 times/day	<ul style="list-style-type: none"> ➤ Anaemia ➤ Neutropenia ➤ G I intolerance ➤ Headache ➤ Insomnia ➤ Asthenia ➤ Lactic acidosis with hepatic steatosis (rare): fatigue, severe vomiting, dyspnoea 	<ul style="list-style-type: none"> ➤ If nausea, take after meal
Didanosine (ddI) Videx 25mg/tab 100mg/tab	125mg or 200mg 2 times/day	<ul style="list-style-type: none"> ➤ Peripheral neuropathy ➤ Pancreatitis ➤ Nausea ➤ Diarrhoea ➤ Lactic acidosis with hepatic steatosis (rare): fatigue, severe vomiting, dyspnoea 	<ul style="list-style-type: none"> ➤ Chewed/crushed/dissolved ➤ Take on empty stomach ➤ Take with IDV at least 1 hr apart
Didanosine EC (ddIEC) Videx EC 250mg/tab 400mg/tab	250mg or 400mg daily	<ul style="list-style-type: none"> ➤ Peripheral neuropathy ➤ Pancreatitis ➤ Nausea ➤ Diarrhoea ➤ Lactic acidosis with hepatic steatosis (rare): fatigue, severe vomiting, dyspnoea 	<ul style="list-style-type: none"> ➤ Take on empty stomach ➤ Take with IDV at least 1 hr apart ➤ Take with meal if take TDF together
Zalcitabine (ddC) Hivid 0.75mg/tab	0.75 mg 3 times/day	<ul style="list-style-type: none"> ➤ Peripheral neuropathy ➤ Stomatitis ➤ Pancreatitis ➤ Lactic acidosis with hepatic steatosis (rare): fatigue, severe vomiting, dyspnoea 	
Stavudine(d4T) Zerit 30mg/cap 40mg/cap	30mg or 40mg 2 times/day	<ul style="list-style-type: none"> ➤ Peripheral neuropathy ➤ Lipodystrophy ➤ Lactic acidosis with hepatic steatosis (rare): fatigue, severe vomiting, dyspnoea ➤ Pancreatitis ➤ Rapidly progressive ascending neuromuscular weakness (rare) 	
Lamivudine (3TC) Epivir 150mg/tab	150mg 2 times/day	<ul style="list-style-type: none"> ➤ Minimal toxicity ➤ Lactic acidosis with hepatic steatosis (rare): fatigue, severe vomiting, dyspnoea 	<ul style="list-style-type: none"> ➤ Rapid emergence of resistant strains if non-adherent

Drug	Dosage	Potential side effects	Remarks
Combivir (CBV) 150mg 3TC + 300mg AZT/tab	1 tab 2 times/day	<ul style="list-style-type: none"> ➤ Anaemia ➤ Neutropenia ➤ Headache ➤ G I intolerance ➤ Insomnia ➤ Asthenia ➤ Lactic acidosis with hepatic steatosis (rare): fatigue, severe vomiting, dyspnoea 	
Abacavir (ABC) Ziagen 300mg/tab	300mg 2 times/day	<ul style="list-style-type: none"> ➤ Hypersensitivity reaction (5% of people) symptoms may include fever, rash, nausea, vomiting, malaise ,fatigue or loss of appetite, respiratory symptoms such as sore throat, cough, shortness of breath 	<ul style="list-style-type: none"> ➤ If there is fever , rash , report to health care workers at once
Kivexa (KVA) Epzicom ABC 600mg + 3TC 300mg/tab	1 tablet once daily	<ul style="list-style-type: none"> ➤ Hypersensitivity reaction which can be fatal, symptoms may include fever, rash, nausea, vomiting, malaise or fatigue, loss of appetite, respiratory symptoms such as sore throat, cough, shortness of breath 	
Tenofovir (TDF) Viread 300mg/tab	300mg daily	<ul style="list-style-type: none"> ➤ Asthenia ➤ Headache ➤ G I intolerance ➤ Flatulence ➤ Lactic acidosis with hepatic steatosis (rare): fatigue, severe vomiting, dyspnoea ➤ Rare report of renal insufficiency 	<ul style="list-style-type: none"> ➤ Take with meal ➤ Dosage adjustment in renal insufficiency
Emtricitabine (FTC) Emtriva 200mg/cap	200mg once daily	<ul style="list-style-type: none"> ➤ Minimal toxicity ➤ Lactic acidosis with hepatic steatosis (rare): fatigue, severe vomiting, dyspnoea 	
Truvada (TRV) FTC 200mg + TDF 300mg/tab	1 tablet once daily	<ul style="list-style-type: none"> ➤ Minimal toxicity ➤ Lactic acidosis with hepatic steatosis (rare): fatigue, severe vomiting, dyspnoea 	
Trizivir (ABC + AZT + 3TC)	1 tab 2 times/day	<ul style="list-style-type: none"> ➤ Anaemia ➤ Neutropenia ➤ G I intolerance ➤ Headache ➤ Insomnia ➤ Asthenia ➤ Lactic acidosis with hepatic steatosis: fatigue, severe vomiting, dyspnoea ➤ Hypersensitivity reaction 	<ul style="list-style-type: none"> ➤ If there is any flu like symptom fever, rash, report to health care workers at once

(B) Non-Nucleoside Reverse Transcriptase Inhibitors (NNRTI)

Drug	Dosage	Potential side effects	Remarks
Nevirapine (NVP) Viramune 200mg/tab	200mg daily for 2 weeks, then 200mg 2 times/day	<ul style="list-style-type: none"> ➤ Rash ➤ Symptomatic hepatitis 	<ul style="list-style-type: none"> ➤ Anti-TB drugs and oral contraceptive pills should be used with caution ➤ Rapid emergence of resistant strains if non-adherent
Efavirenz (EFZ) Stocrin, Sustiva 200mg/cap 600mg/tab	600mg daily (preferably at bed time)	<ul style="list-style-type: none"> ➤ Rash ➤ CNS symptoms : dizziness, somnolence, insomnia, drowsiness, nightmares, hallucinations, poor concentration (usually subside in 2-4 weeks if really appear) ➤ Increased transaminase levels 	<ul style="list-style-type: none"> ➤ Decrease CNS symptoms if take at bed time ➤ Pregnancy is contraindicated ➤ Caution: patient with mental illness
Delavirdine (DLV) Rescriptor 100mg/tab or 200mg/tab	400mg 3 times/day	<ul style="list-style-type: none"> ➤ Rash ➤ Headache ➤ Increased transaminase levels 	
Etravirine (ETV) (TMC125) Intelence 100mg/tab	200mg 2 times/day	<ul style="list-style-type: none"> ➤ Rash ➤ Nausea & Vomiting ➤ Diarrhoea ➤ Abdominal pain, tiredness, headache, increase blood pressure ➤ Tingling or pain in hands & feet, weakness 	<ul style="list-style-type: none"> ➤ Take with a meal ➤ Not yet approved for use in HIV-positive children ➤ Should be used cautiously with Kaletra due to: ↑ Intelence blood levels 85% and potentially ↑ the risk of Intelence side effects ➤ Notify health care providers if develop rash

(C) Protease Inhibitors (PI)

Drug	Dosage	Potential side effects	Remarks
Indinavir (IDV) Crixivan 200mg/cap 400mg/cap	800mg Q8h (3 times/day)	<ul style="list-style-type: none"> ➤ Nephrolithiasis ➤ G I intolerance ➤ Increased indirect bilirubinemia ➤ Misc.: headache, asthenia, blurred vision, dizziness, rash, metallic taste, thrombocytopenia, alopecia and hemolytic anaemia ➤ Fat redistribution ➤ Lipid abnormalities ➤ Hyperglycemia 	<ul style="list-style-type: none"> ➤ Take with empty stomach ➤ Drink water = 1.5 litre/day ➤ Avoid grapefruit juice

Drug	Dosage	Potential side effects	Remarks
Saquinavir (SQV) Invirase (hard gel) 200mg/cap 500mg/tab Fortovase (soft gel) (FTV) 200mg/cap	Invirase 600mg 3 times/day or 1000mg 2 times/day Fortovase 1200mg 3 times/day	<ul style="list-style-type: none"> ➤ Headache ➤ G I intolerance ➤ Elevated transaminase enzymes ➤ Hyperglycemia ➤ Fat redistribution ➤ Lipid abnormalities ➤ Possible increased bleeding episodes in patients with hemophilia 	<ul style="list-style-type: none"> ➤ Take after meal, preferably fatty to increase absorption ➤ Rifampicin & Rifabutin are contraindicated with SQV ➤ Fortovase (soft gel) should be refrigerated or stored at room temperature <25° C (up to 3 months)
Ritonavir (RTV) Norvir 100mg/cap syrup 80mg/ml	600mg 2 times/day	<ul style="list-style-type: none"> ➤ Headache ➤ G I intolerance ➤ Paresthesias – circumoral and extremities ➤ Hepatitis ➤ Pancreatitis ➤ Asthenia ➤ Taste perversion ➤ Lab.: Triglycerides increase > 200%, transaminase elevation, elevated CPK and uric acid ➤ Hyperglycemia ➤ Fat redistribution ➤ Lipid abnormalities ➤ Possible increased bleeding episodes in patients with hemophilia 	<ul style="list-style-type: none"> ➤ Capsules should be refrigerated. If stored at room temperature <25° C, it is stable for = 30 days ➤ Take after meal to improve tolerance ➤ Need dosage adjustment if take with SQV ➤ Avoid self-prescribe drugs because of drug interaction
Nelfinavir (NFV) Viracept 250mg/tab	750mg 3 times/day or 1250mg 2 times/day	<ul style="list-style-type: none"> ➤ Diarrhoea ➤ Hyperglycemia ➤ Fat redistribution ➤ Lipid abnormalities ➤ Serum transaminase elevation ➤ Possible increased bleeding episodes in patients with hemophilia 	<ul style="list-style-type: none"> ➤ Take with meal
Kaletra (LPV) Lopinavir (LPV)200mg + Ritonavir (RTV) 50mg/tab	2 tablets 2 times/day	<ul style="list-style-type: none"> ➤ Asthenia ➤ Elevated serum transaminases ➤ Hyperglycemia ➤ Fat redistribution ➤ Lipid abnormalities ➤ Possible increased bleeding episodes in patients with hemophilia 	<ul style="list-style-type: none"> ➤ Use additional type of contraception since Kaletra may reduce the effectiveness of oral contraceptives
Kaletra (LPV) Lopinavir (LPV) 133.3mg + Ritonavir (RTV) 33.3mg/cap	3 capsules 2 times/day	<ul style="list-style-type: none"> ➤ Diarrhoea ➤ G I intolerance ➤ Asthenia ➤ Elevated serum transaminases ➤ Hyperglycemia ➤ Fat redistribution ➤ Lipid abnormalities ➤ Possible increased bleeding episodes in patients with hemophilia 	<ul style="list-style-type: none"> ➤ Take with meal ➤ Use additional type of contraception since Kaletra may reduce the effectiveness of oral contraceptives ➤ Should be refrigerated. If stored at room temperature <25° C, it is stable for 2 month

Drug	Dosage	Potential side effects	Remarks
Atazanavir (ATV) Reyataz 150mg/cap 200mg/cap	400mg once daily or 300mg once daily + Ritonavir (RTV) 100mg	<ul style="list-style-type: none"> ➤ Indirect hyperbilirubinemia ➤ Hyperglycemia ➤ Fat maldistribution Lipid abnormalities ➤ Possible increased bleeding episodes in patients with hemophilia ➤ Some patients may experience asymptomatic 1st degree Atrioventricular (AV) block 	<ul style="list-style-type: none"> ➤ Take with meal ➤ Contraindications: Midazolam, triazolam dihydroergotamine, ergotamine, ergonovine, methylergonovine, cisapride and pimozide ➤ Caution: Patients with hepatic insufficiency or gastric ulcer ➤ ATV without Ritonavir (RTV) should not be coadministered with Efavirenz (EFZ) or Tenofovir (TDF)
Fosamprenavir (FPV) or (fAPV) Lexiva 700mg/tab	1400mg 2 times/day	<ul style="list-style-type: none"> ➤ Skin rash (19%) ➤ Diarrhoea, nausea, vomiting ➤ Headache ➤ Hyperlipidemia ➤ Transaminase elevation ➤ Hyperglycemia ➤ Fat maldistribution ➤ Possible increased bleeding episode in patients with hemophilia 	<ul style="list-style-type: none"> ➤ Dosage adjustment in hepatic insufficiency recommended
Tipranvir (TPV) Aptivus 250mg/cap	500mg 2 times/day	<ul style="list-style-type: none"> ➤ Hepatotoxicity ➤ Skin rash ➤ Hyperlipidemia (esp. hypertriglyceridemia) ➤ Hyperglycemia ➤ Fat maldistribution ➤ Possible increased bleeding episodes in patients with hemophilia 	<ul style="list-style-type: none"> ➤ Take both TPV and RTV with food ➤ Caution: Patient with hepatitis B or C virus infection or have other liver problem
Darunavir (DRV) Prezista 300mg/tab	600mg twice daily	<ul style="list-style-type: none"> ➤ Diarrhoea ➤ Nausea ➤ Headache ➤ Cold-like symptoms ➤ Inflammation of the liver ➤ Abnormal liver function test ➤ Lipid abnormalities 	<ul style="list-style-type: none"> ➤ Take with food

(D) Entry Inhibitors

Drug	Dosage	Potential side effects	Remarks
<u>Fusion Inhibitor:</u> Enfuvirtide (T20) Fuzeon	90mg (1ml) subcutaneously (SC) 2 times/day	<ul style="list-style-type: none"> ➤ Local injection site reactions eg. pain, erythema, induration, nodules and cysts, pruritus, ecchymosis ➤ Increased rate of bacterial pneumonia ➤ Hypersensitivity reaction (<1%) symptoms may include rash, fever, nausea, vomiting, chills, rigors, hypotension, or elevated serum transaminases 	<ul style="list-style-type: none"> ➤ Rechallenge is not recommended if client has hypersensitivity reaction
<u>CCR5 Antagonist:</u> Maraviroc (MVC) Selzentry, Celsentri 150mg/tab or 300mg/tab	The recommended dose differs based on concomitant medications because of drug interactions 150mg, 300mg, or 600mg twice daily	<ul style="list-style-type: none"> ➤ Abdominal pain ➤ Cough ➤ Dizziness ➤ Musculoskeletal symptoms ➤ Fever ➤ Rash ➤ Upper respiratory tract infections ➤ Hepatotoxicity ➤ Orthostatic hypotension 	<ul style="list-style-type: none"> ➤ No dosage recommendation ➤ Concentrations will likely be increased in patients with hepatic impairment ➤ Take with or without food ➤ Cautions:- Anti-convulsants, such as Tegretol, Luminal, Dilantin can decrease the Amount of Selzentry in the blood stream. If these medication are used, the maximum Selzentry dose (two 300mg twice daily) may be necessary.

(E) Combination Drugs

Drug	Dosage	Potential side effects	Remarks
Atripla (1 NNRTI + 2 NRTI) EFZ 600mg + FTC 200mg + TDF 300mg/tab	1 tablet once daily	<ul style="list-style-type: none"> ➤ Headache ➤ Dizziness ➤ Abdominal pain ➤ Nausea ➤ Vomiting ➤ Rash ➤ Renal impairment ➤ Severe depression or serious psychiatric problems ➤ Lactic acidosis ➤ Hepatotoxicity 	<ul style="list-style-type: none"> ➤ Take with empty stomach ➤ Decrease CNS symptoms if take at bed time ➤ Pregnancy is contraindicated ➤ Caution: Patients with chronic Hepatitis B infection ➤ Contraindications: Astemizole, cisapride, midazolam, triazolam, ergot medications

			➤ Rapid emergence of resistant strains if non-adherent
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(F) Integrase Inhibitors

Drug	Dosage	Potential side effects	Remarks
Raltegravir (RGV) Isentress 400mg/tab	400mg 2 times per day	<ul style="list-style-type: none"> ➤ Diarrhoea ➤ Nausea ➤ Headache ➤ Pyrexia ➤ CPK elevation 	<ul style="list-style-type: none"> ➤ Take with or without meals ➤ Pregnancy is contraindicated ➤ Used with caution patients with muscle problem ➤ Not approved for use in HIV-positive children

Reference:

Department of Health, Guidelines for the Use of Antiretroviral Agents in HIV-I-Infected Adults and Adolescents. Convened by DHHS. 1, December, 2007. P.73-82.