The Antiretroviral Guide

A Tool for Providing Seamless Care and Assessing Antiretroviral Therapy in Hospitalized HIV+ Patients

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ADAPTED FROM ALBERTA GUIDE: http://www.bugsanddrugs.ca/documents/HIVARVGuide.pdf
Can J Hosp Pharm 2015;68(6):470-473 & Appendix E15-E18. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4690673/

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Handy Resources

HIV Drug Information • HIV Patient Resources • Drug Interactions

AHS Knowledge Resource Service (KRS)- HIV Page: http://krs.libguides.com/c.php?g=64378&p=414814
Toronto General Hospital Site and HIV/HCV app: http://hivclinic.ca / http://app.hivclinic.ca
University of Montreal Site- HIV Medication Guide (in French also): www.hivmedicationguide.com
CATIE HIV/HCV Information Canadian Site: www.catie.ca
University of Liverpool Site (App)- HIV and HCV sites: www.hiv-druginteractions.org/ / www.hep-druginteractions.org/
DHHS Guidelines (US): https://aidsinfo.nih.gov/guidelines
HIV Insite (UCSF): http://hivinsite.ucsf.edu/insite?page=ar-00-02

HIV Drug Dosing in Renal or Hepatic impairment and Dialysis

Toronto General Hospital Site and HIV/HCV app: http://hivclinic.ca/drug-information/pharmacologic-properties-of-antiretrovirals/ / http://app.hivclinic.ca
DHHS Guidelines (US): https://aidsinfo.nih.gov/guidelines/html/1/adult-and-adolescent-arv-guidelines/44/arv-dosing-for-renal-or-hepatic-insufficiency
HIV Insite (UCSF): http://hivinsite.ucsf.edu/InSite?page=md-rr-18

Crushing HIV Medications • ARV Liquid Formulations

Toronto General Hospital Site (see Crushing and Liquids) and HIV/HCV app: http://hivclinic.ca/drug-information/additional-info/ / http://app.hivclinic.ca
Duggan JM et al. Am J Health-Syst Pharm 2015;72 :1555-65: www.ncbi.nlm.nih.gov/pubmed/26346211
Nyberg CR, et al. Topics Antiviral Med 2011;19(3):126-13: www.iasusa.org/sites/default/files/tam/19-3-126.pdf

Enteral ARV Administration

Prohaska ES, et al. Am J Health Syst Pharm 2012;69(24):2140-6: www.ncbi.nlm.nih.gov/pubmed/?term=Prohaska+HIV
Fulco PP. Am J Health Syst Pharm 2013;70(12):1016-7: www.ncbi.nlm.nih.gov/pubmed/23719876
Kim CH, et al. CJHP 2014;67(1):39-42: www.ncbi.nlm.nih.gov/pubmed/24634526

Opportunistic Infection (OI) Guidelines

CDC Guidelines (US): http://aidsinfo.nih.gov/guidelines

HIV and Pregnancy

Perinatal Protocol- Edmonton Zone: www.bugsanddrugs.ca/documents/HIV_Protocol.pdf OR http://krs.libguides.com/content.php?pid=452758&sid=4589197
HIV-Maternity and Newborns Protocol- Calgary Zone: http://krs.libguides.com/content.php?pid=452758&sid=4589197
DHHS Perinatal Guidelines (US): http://aidsinfo.nih.gov/guidelines

STEP 1 Admission Assessment

Initial Patient Assessment

Component	Comments
Medical History	• **Confirm admission diagnosis/HIV status** • **Inform HIV outpatient clinic of admission** • **Refer to Antiretroviral Assessment Form at: http://www.bugsanddrugs.ca/documents/HIVARVGuide.pdf** • Summary of previous and current medical conditions, including HBV, HCV, OIs, STIs, psychiatric, metabolic, etc. • Pregnancy or possibility of pregnancy • Vital signs, ROS, height, weight
Social History	• Living arrangements • Income stability/job security • Social/family support • Alcohol/addictions/recreational drug use • Drug coverage plan (include ARV coverage, coverage for other medications)
Laboratory Tests	• HIV-specific labs, including most recent CD4 count and HIV viral load (see HIV Laboratory Tests in guide at http://www.bugsanddrugs.ca/documents/HIVARVGuide.pdf) • HAV, HBV, HCV status, toxoplasmosis serology, tuberculosis status if available • CBC, electrolytes • Organ function (assess overall stability) - Renal (SCr, CrCl for renal drug dosing adjustments) - Hepatic (ALT, AST, ALP, bilirubin, albumin, INR)
BPMH/ Medication Reconciliation	• Allergies/intolerances - Clarify the reaction, drug involved, date, and required treatment • Current ARV regimen; study drugs • Other prescription and non-prescription drugs, including inhalers, patches, topical medications, recent intra-articular injections (e.g. corticosteroids) • CAM/Herbal medications *Note: For all medications, clarify indication, drug, dose, frequency, formulation, route of administration and adherence* **Hospital Admission ARV Seamless Care Tips:** • If patient was taking ARVs PTA, was the patient adherent? Check with patient, outpatient refill history, community pharmacy, HIV program. • Check for any reasons why ARVs should be held in the hospital (non-adherence in the community, patient instability, significant drug toxicity on admission, significant illness in hospital, NPO, etc). • In NPO/critical care/severe nausea patients it might be necessary to stop all ARVs for the short-term depending on feeds and drug malabsorption issues. • Avoid use of partial ARV regimens to minimize the development of resistance (continue all drugs or stop all drugs together). If uncertain consult with HIV program. • Check if the patient is receiving therapy for HBV or HCV co-infection as these therapies should generally be continued during hospitalization.

ARV: antiretroviral; FDC: fixed dose combination; HAV: hepatitis A virus; HBV: hepatitis B virus; HCV: hepatitis C virus; NPO: nothing by mouth; OIs: opportunistic infections; PTA: prior to admission; ROS: review of systems; STIs: sexually transmitted infections

1. ADMISSION ASSESSMENT CONTINUED

Assess Antiretroviral (ARV) Therapy on Admission

Is it the correct therapy? *(See Antiretroviral Agents)*	• Usually HIV is treated with 3 active drugs; however some patients may be on > 3 drugs. • There is also ongoing research on the use of 2-drug combinations. • There are many new co-formulations with several drugs included called fixed dose combinations (FDCs) or single tablet regimens (STRs). • Ritonavir and cobicistat are not considered "active drugs" (they are pharmacokinetic boosters to increase concentrations of certain ARVs).
Is there adequate ARV stock/drug coverage?	• Ensure there is a supply of ARVs- check with patient, hospital stock, dispensing outpatient or community pharmacy. • Ensure the patient has an active AHC number for discharge ARV coverage *(see Discharge Assessment)*
Are the doses correct? *(See Antiretroviral Agents/ Handy Resources)*	• In some cases ARV doses may differ from the product monograph. Verify with the outpatient/community pharmacy, HIV program or Netcare if needed. • Ensure doses are adjusted for significant renal/hepatic dysfunction or dialysis. • Some FDCs should be avoided if the CrCL < 50 mL/min and need to be split up into single drug formulations. When uncertain, consult with the HIV program. • Ensure the formulation is correct. Most ARVs are available in tablets or capsules and there are a few liquids; only zidovudine is available IV. • Consult specialized information on liquids, crushing tablets, or opening capsules. (*See Handy Resources)*
Is therapy effective?	• Verify CD4 count and viral load. Ideally the CD4 count should be > 200 cells/µL (i.e. > 0.200 x 10^9/L) to prevent OIs, although some patients are not able to achieve this degree of immune reconstitution. • The HIV viral load should be undetectable/not quantifiable if the patient is responding well to therapy. If the viral load is > 200-250 cells/µL while on ARVs, a genotypic ARV resistance test (GART) might be indicated (consult with HIV/ID team). • Monitoring efficacy: When starting therapy the HIV viral load is measured after 4-8 weeks to assess the initial response to therapy. In general, the CD4 count and viral load are monitored every 3-6 months, depending on the response to treatment and the stability of the patient. • If the CD4 count is < 200 cell/µL, OI prophylaxis may be required to prevent certain infections like Pneumocystis pneumonia (PCP or PJP) (< 200), toxoplasmosis (< 100, if toxo Ab +) and Mycobacterium avium complex (MAC) (< 50). *(See Handy Resources - OI guidelines)*
Is therapy safe? *(See Antiretroviral Agents/ Handy Resources)*	• Ensure the patient is tolerating the current ARV regimen. • Common problems include GI (nausea, anorexia, diarrhea) and metabolic toxicities (high lipids, diabetes). • More serious toxicities may include skin rashes (not always serious), renal failure, hepatic failure (less common), pancreatitis, and anemia.
Are there any drug-drug interactions? *(See Antiretroviral Agents/Handy Resources)*	• Common drug interactions involve absorption (pH and chelation/complexation interactions); metabolic (CYP450 3A4/2D6 and P-gp inhibition and induction interactions); and additive toxicity (renal, cytopenias).
Are there any scheduling issues? *(See Antiretroviral Agents/Handy Resources)*	• Most ARVs are best tolerated/absorbed with food; try to accommodate patient preferences when scheduling ARVs. • It is important to give a once daily regimen all at the same time and to give pharmacokinetic boosters (ritonavir, cobicistat) at the same time as the drugs they are boosting (e.g. protease inhibitors). • BID regimens should be scheduled q12h.
Can the patient adhere to therapy?	• Ensure the patient is able to adhere to therapy during the hospitalization and whether this can be continued after discharge. There may be a number of factors that can affect short and long-term adherence (NPO, inability to eat/swallow, severe nausea, day passes, social, housing, addictions, toxicities, formulations issues, etc).

STEP 2 Assessment During Course of Hospitalization

- For patients on ARVs, review medication profile daily or when medication changes are made.
- Monitor for common errors that may occur when transitioning from units including drug omissions, drug dosing issues, drug interactions with concurrent therapies prescribed over the course of hospitalization, scheduling of medications with food, auto-stops on antimicrobials (including ARVs and OI treatment/prophylaxis), etc.
- Monitor laboratory tests for efficacy and toxicity if these tests are ordered during hospitalization. Efficacy: CD4 count and HIV viral load (every 3-6 mos). Toxicity: CBC/diff, renal/hepatic function, GI effects. Long-term effects drug-specific (e.g. ↑ lipids/glucose, ↓ bone mineral density (BMD)).

STEP 3 Discharge Assessment

Assess Discharge Prescriptions	• Discharge ARVs should be ordered by an authorized ARV prescriber (e.g. an ID physician)-requirement for outpatient drug coverage. • Ensure opportunistic infection prophylaxis medications are ordered if indicated. • Verify that all other medications are ordered as appropriate including prescription, OTC and PRN drugs. • If still indicated, re-start medications that were held on admission or during the course of hospitalization.
ARV Dispensing/ Coverage	• Patients who have an active AHC number receive ARVs free of charge; prescriptions must be written by an authorized ARV prescriber (e.g. an ID physician) to be covered by the AHS Specialized High Cost Drug Program. ARVs covered: http://insite.albertahealthservices.ca/PharmacyServices/tms-phm-SHCDP-list.pdf • If a patient does not have active AHC, other forms of drug coverage may include: Non-Insured Health Benefits (NIHB) for treaty status patients, Interim Federal Health (IFH) for refugee status patients, private insurance, and compassionate access from the pharmaceutical industry. • Edmonton Zone: adults- ARV prescriptions at Rexall-Royal Alexandra Hospital or Rexall-Kaye Edmonton Clinic sites; paediatrics-Rexall-University of Alberta-Stollery Hospital or Rexall KEC. • Calgary Zone: adults- ARV prescriptions at Southern Alberta Clinic dispensary; paediatrics- Rexall-Alberta Children's Hospital. • Consider coverage of medications other than ARVs.
ARV Adherence	• Address potential for non-adherence in outpatient setting. • Reinforce important adherence and food requirements. • Assess whether special adherence aids are required: - Medication schedule - Blister pack or daily observed therapy (DOT) at community pharmacy - Consider giving DOT ARVs with daily opioids/methadone to increase adherence - Beepers, reminders, supports - Delivery of medications
Outpatient Follow-up	• Arrange for follow-up with local HIV program to see treating ID Physician and/or HIV team. • Arrange for follow-up with other health care providers such as the family physician. • Communicate any changes in drug therapy to outpatient health care providers (e.g. physicians, HIV team, outpatient/community pharmacy).

HIV Program Contact Information

	PHONE	FAX
Edmonton Zone Northern Alberta Program (NAP)		
NAP at the Royal Alexandra Hospital (RAH) Toll Free: 1-844-735-4811	780-735-4811 (RECEPTION) 780-735-5340 (NURSING) 780-735-6760/5039 (PHARMACIST)	780-735-4866
NAP at the Kaye Edmonton Clinic (KEC) Toll Free: 1-844-407-1852	780-407-1852 (GENERAL INQUIRES) 780-407-8372 (NURSING) 780-407-8550/3643 (PHARMACIST)	780-407-7827
STI Clinic	780-342-2324	780-425-2194
Rexall Outpatient Pharmacy (Royal Alexandra Hospital)	780-735-5296	780-735-5258
Rexall Outpatient Pharmacy (Kaye Edmonton Clinic) – Adult and Paediatric ARVs	780-407-4881	780-407-4886
Rexall Outpatient Pharmacy (University of Alberta/Stollery Hospital) – Paediatric ARVs	780-407-6990	780-407-1090
Hepatitis C Support Program (HSP)	780-407-1650	780-407-8659
Calgary Zone Southern Alberta Clinic (SAC)		
Southern Alberta Clinic (SAC) and Hepatitis C Support	403-955-6399 (GENERAL INQUIRES) 403-955-6388 (PHARMACY)	403-955-6355 403-955-6338
Rexall Outpatient Pharmacy (Alberta Children's Hospital) – Paediatric ARVs	403-955-7303	403-955-2499
General Information		
Health Canada Special Access Program (SAP)	613-941-2108	613-941-3194

Antiretroviral Agents

Drug/Trade Name	Formulations/ Strengths	Usual Adult Dose/ Food	Comments
Individual Antiretrovirals			
NRTIs (Nucleoside Reverse Transcriptase Inhibitors)			
abacavir (ABC) Ziagen FDC: Trizivir, Kivexa/ *Epzicom (US)*, Triumeq	Tab: 300 mg Sol: 20 mg/mL	300 mg BID OR 600 mg daily Take with or without food	• May ↑ risk of myocardial infarction • Risk of HSR in individuals + for the HLA-B5701 gene; screen required before initiation; if + test, avoid abacavir • Few drug interactions
didanosine (ddI) Videx EC	EC Cap: 125,200,250, 400 mg Sol: 4 g/240 mL (SAP)	200 mg BID OR 400 mg daily Take 90min ac or 2h pc	• GI intolerance • Peripheral neuropathy, pancreatitis • Few drug interactions
emtricitabine (FTC) *Emtriva (US)* FDC: Atripla, Complera, Stribild, Genvoya, Truvada	*Cap: 200 mg (US)* *Sol: 10 mg/mL (US)*	200 mg daily Take with or without food	• Well tolerated • Few drug interactions • Active against HBV • Only available in Canada in a FDC
lamivudine (3TC) *3TC/Epivir (US)* FDC: Combivir, Kivexa/ *Epzicom (US)*, Trizivir, Triumeq	Tab: 100,150,300 mg Sol: 10 mg/mL Note: 100 mg tabs also for HBV infection (Heptovir)	150 mg BID OR 300 mg daily Take with or without food	• Well tolerated • Few drug interactions • Active against HBV
stavudine (d4T) Zerit	Cap: 15,20,30,40 mg Sol: 1 mg/mL (SAP)	≥ 60 kg: 40 mg BID < 60 kg: 30 mg BID Take with or without food	• Peripheral neuropathy, pancreatitis • Hyperlipidemia • Few drug interactions
tenofovir disoproxil fumarate (TDF) Viread FDC: Atripla, Complera, Stribild, Truvada	Tab: *150,200 (US)*; 300 mg *Pwdr: 40 mg/g (US)*	300 mg daily Take with or without food	• Nephrotoxicity; ↓ in bone mineral density (BMD) • Few drug interactions • Active against HBV
tenofovir alafenamide (TAF) FDC: Genvoya, Descovy, Odefsey *Single Tab: HBV indication (Vimlidy) (US)*	See FDC products	See FDC products	• TAF will largely replace TDF in most tenofovir formulations. • ↓ renal and bone toxicity with TAF vs. TDF • More drug interactions than TDF; avoid with potent P-gp inducers; dose adjust with P-gp inhibitors • Active against HBV
zidovudine (AZT, ZDV) Retrovir FDC: Combivir, Trizivir	Cap: 100 mg *Tab: 300 mg (US)* IV: 10 mg/mL Syrup: 10 mg/mL	300 mg BID OR 200 mg TID Take with or without food	• GI intolerance • Headache, insomnia • Bone marrow suppression, macrocytic anemia, neutropenia • Few drug interactions

FDC: Fixed Dose Combination; HSR: hypersensitivity reaction

3. ANTIRETROVIRAL AGENTS CONTINUED

Drug/Trade Name	Formulations/ Strengths	Usual Adult Dose/ Food	Comments
NNRTIs (Non-Nucleoside Reverse Transcriptase Inhibitors)			
efavirenz (EFV) Sustiva (generics) FDC: Atripla	Cap: 50, 200 mg Tab: 600 mg	600 mg daily Take qHS on empty stomach or with low-fat snack to minimize CNS S/E	• CNS effects- vivid dreams, nightmares, insomnia, dizziness • Rash (usually self-limiting, unless high risk features) • Hyperlipidemia • Inducer of CYP3A4, 2B6 • Avoid in pregnancy if possible
etravirine (ETV) Intelence	Tab: 25,100, 200 mg	200 mg BID OR 400 mg daily Take with food	• Nausea • Rash (usually self-limiting, unless high risk features) • Inducer of CYP3A4 (weak) • Inhibitor of CYP2C, 2C19 (weak-moderate)
nevirapine (NVP) Viramune/ Viramune XR	IR Tab: 200 mg XR Tab: 400 mg Syrup: 10 mg/mL (SAP)	IR: 200 mg daily x 14 days (lead-in) then 200 mg BID OR 400 mg daily XR: 400 mg daily (after 14 day lead-in) Take with or without food	• Rash (may be more serious with hepatitis, check for high risk features) • Avoid starting in men with CD4>400 and women with CD4>250 due to ↑ risk of hepatitis • Inducer of CYP3A, 2B6
rilpivirine (RPV) Edurant FDC: Complera, Odefsey	Tab: 25 mg	25 mg daily 50 mg daily with rifabutin Take with a meal (400 kcal minimum)	• Headache, dizziness, insomnia, vivid dreams, depression (mild-moderate) • Do not administer with PPIs (CI) • Spacing required with H2RAs and/or antacids (↑ pH decreases RPV absorption) • Do not administer with a liquid nutritional drink (↓ RPV absorption) • Inducers/inhibitors of CYP3A may affect RPV concentrations • Avoid initiation if viral load > 100,000 c/mL or CD4 < 200 cells/μL
PIs (Protease Inhibitors)			
atazanavir (ATV) Reyataz FDC: Evotaz	Cap: *100 mg (US)*, 150, 200, 300 mg *Pwdr: 50 mg/1.5 g dispersible oral powder packet (US)*	400 mg daily (unboosted) OR 300 mg daily with RTV 100 mg (boosted) Take with food	• Benign and reversible hyperbilirubinemia (UGT1A1 inhibition) • Lower risk for metabolic S/E than other PIs • Avoid/space from antacids, H2RAs, and/or PPIs (↓ ATV absorption) • Inhibitor of CYP3A, UGT1A1 • Use with PK booster recommended; may also use unboosted
darunavir (DRV) Prezista FDC: Prezcobix	Tab: 75, 150, 400, 600, 800 mg Susp: 100 mg/mL*	DRV 600 mg + RTV 100 mg BID OR DRV 800 mg + RTV 100 mg daily (naïve subjects) Take with food	• GI intolerance • Lower risk for metabolic S/E than other PIs • Inhibitor of CYP 3A4 • Use with PK booster required • DRV/RTV BID dosing often used in more experienced patients with underlying DRV resistance (see product monograph)

3. ANTIRETROVIRAL AGENTS CONTINUED

Drug/Trade Name	Formulations/ Strengths	Usual Adult Dose/ Food	Comments
fosamprenavir (fAPV) Telzir / *Lexiva (US)*	Tab: 700 mg Susp: 50 mg/mL	fAPV 1400 mg BID (unboosted) OR fAPV 700 mg + RTV 100 mg BID (boosted) OR fAPV 1400 mg + RTV 100-200 mg daily (boosted) Take tabs with or without food; Susp ac	• GI intolerance • Rash (usually self-limiting, unless high risk features) • Metabolic S/E • Inhibitor of CYP 3A4 • Use with RTV PK booster recommended
lopinavir (LPV) *(see Kaletra under Fixed-Dose Combination (FDC) Products)*			
nelfinavir (NFV) Viracept	Tab: 250,625 mg *Pwdr: 50 mg/g (US)*	1250 mg BID OR 750 mg TID (unboosted) Take with food	• GI intolerance (diarrhea- treat with fiber, calcium supplements) • Metabolic S/E, lipodystrophy • Inhibitor of CYP3A4 • Only non-boostable PI • High variability in absorption
INSTIs (Integrase Strand Transfer Inhibitors)			
dolutegravir (DTG) Tivicay FDC: Triumeq	Tab: 50 mg Peds: 10, 25 mg tab*; 5 mg dispersible tab (under study)*	50 mg daily (naïve subjects) OR 50 mg BID (experienced subjects or with certain CYP450 enzyme inducers) Take with or without food	• Well tolerated • GI intolerance, headache, insomnia • CK and/or transaminase elevation • Non-pathogenic ↑ SCr due to inhibition of renal tubular secretion (SCr: 10-15 µmol/L ↑) • Fewer drug interactions • Inducers/inhibitors of UGT1A1/CYP3A4 may alter DTG concentrations • Administer DTG 2h before or 6h after taking medications containing polyvalent cations (eg. Al, Ca, Fe, Mg, Zn) - (↓ DTG absorption); however may be taken with food at the same time as Ca and Fe
elvitegravir (EVG) Vitekta* FDC: Stribild, Genvoya	Tab: 85,150 mg*	Usual dose 150 mg daily with cobicistat 150 mg daily (boosted regimen) Take with food	• Well tolerated • GI intolerance, headache • CK and/or transaminase elevation • Non-pathogenic ↑ SCr due to inhibition of renal tubular secretion by cobicistat (SCr: 10-15 µmol/L ↑) • Modest inducer of CYP 2C9 • Cobicistat PK booster required • Administer EVG 2h apart from antacids or vitamin/ mineral supplements containing polyvalent cations (eg. Al, Ca, Fe, Mg, Zn) - (↓ EVG absorption)
raltegravir (RAL) Isentress	Tab: 400 mg Chew Tab: 25,100 mg Pwdr: 20 mg/mL oral banana flavoured granular powder (100 mg/packet) (available in US; SAP in Canada)* 600 mg QD tab under study*	400 mg BID Take with or without food 1200 mg daily (2 x 600 mg QD tabs)- under study*	• Well tolerated • GI intolerance, headache, pyrexia • CK and/or transaminase elevation • Fewer drug interactions • Inducers/inhibitors of UGT1A1 may alter RAL concentrations • Concurrent or staggered administration not recommended with Al and/or Mg. May be given with antacids containing CaCO3. • Space from Fe, Zn by several hours (↓ RAL absorption) Note: 600 mg tabs may have different cation spacing recommendations once marketed

3. ANTIRETROVIRAL AGENTS CONTINUED

Drug/Trade Name	Formulations/ Strengths	Usual Adult Dose/ Food	Comments
CCR5 Receptor Antagonist			
maraviroc (MVC) Celsentri / *Selzentry (US)*	Tab: 150, 300 mg	150-600 mg BID, depending on regimen and drug interactions Take with or without food	• Well-tolerated • GI intolerance, headache, orthostatic hypotension • Hepatotoxicity • Fewer drug interactions • Inducers/inhibitors of CYP3A4/P-gp may affect MVC concentrations (recent tropism screening test required; consult with HIV team regarding testing) • Only effective if virus has R5 tropism (screening test required)
Pharmacokinetic (PK) Boosters			
ritonavir (RTV) Norvir FDC: Kaletra	Tab: 100 mg Sol: 80 mg/mL	100-200 mg daily/BID as PK booster Take with food	• GI intolerance • Hepatitis • Metabolic S/E • Many drug interactions • Inhibitor of CYP 3A4, P-gp > 2D6 • Inducer of CYP 1A2, 2B6, 2C9, 2C19, UGT (clinically significant) • Not used for ARV properties; used as a PK booster
Cobicistat (cobi) Tybost* FDC: Stribild, Genvoya, Prezcobix, Evotaz	Tab: 150 mg*	150 mg daily as a PK booster; use with daily EVG 150 mg, ATV 300 mg and DRV 800 mg Take with food with other ARVs	• Headache, insomnia, GI intolerance • Non-pathogenic ↑ SCr due to inhibition of renal tubular secretion (SCr: 10-15 µmol/L ↑) • Many drug interactions • Inhibitor of CYP 3A4, P-gp > 2D6 • No ARV activity; used as a PK booster

Brand Name	Composition	Usual Adult Dose	Comments
Fixed-Dose Combination (FDC) Antiretroviral Products			
NRTI Backbones			
Combivir	Zidovudine 300 mg Lamivudine 150 mg Tab	1 tab BID Avoid if CrCl < 50 mL/min Take with food	• GI intolerance • Headache, insomnia • Bone marrow suppression, macrocytic anemia, neutropenia • Few drug interactions
Descovy*	Tenofovir alafenamide (TAF) 10 and 25 mg Emtricitabine 200 mg Tab	10/200 mg tab with RTV or cobicistat-boosted regimens 25/200 mg tab with other unboosted ARVs Avoid if CrCl < 30 mL/min Take with or without food	• ↓ renal and bone toxicity with TAF vs. TDF • More drug interactions than TDF; avoid with potent P-gp inducers; dose adjust with P-gp inhibitors • Active against HBV
Kivexa/ *Epzicom (US)*	Abacavir 600 mg Lamivudine 300 mg Tab	1 tab daily Avoid if CrCl < 50 mL/min Take with or without food	• May ↑ risk of myocardial infarction • Risk of HSR in individuals + for the HLA-B5701 gene; screen required before initiation; if + test, avoid abacavir • Few drug interactions
Trizivir	Zidovudine 300 mg Lamivudine 150 mg Abacavir 300 mg Tab	1 tab BID Avoid if CrCl < 50 mL/min Take with food	• See Kivexa and Combivir comments

3. ANTIRETROVIRAL AGENTS CONTINUED

Brand Name	Composition	Usual Adult Dose	Comments
Truvada	Tenofovir (TDF) 300 mg Emtricitabine 200 mg Tab	1 tab daily Adjustments required if CrCl ≤ 50 mL/min. Avoid if CrCl <30mL/min or dialysis Take with or without food	• Nephrotoxicity; ↓ in bone mineral density (BMD) • Few drug interactions • Active against HBV
PI- based (with PK booster)			
Evotaz*	Atazanavir 300 mg Cobicistat 150 mg Tab	1 tab daily Avoid if CrCl < 70 mL/min and also on TDF Take with food	• See atazanavir and cobicistat comments
Kaletra	Lopinavir/Ritonavir 100/25 mg (peds), 200/50 mg Tab Sol : 80/20 mg/mL	2 tabs (=400/100 mg) BID OR 4 tabs (=800/200 mg) daily Take with food (tabs, sol)	• GI intolerance, diarrhea • Higher risk for metabolic S/E than other PIs • Inhibitor of CYP 3A4; see RTV comments
Prezcobix	Darunavir 800 mg Cobicistat 150 mg Tab	1 tab daily Avoid starting if CrCl < 70 mL/min and also on TDF (e.g. Truvada, Viread) Take with food	• See darunavir and cobicistat comments
INSTI-based Single Tablet Regimens (STRs)			
Genvoya*	Tenofovir alafenamide (TAF) 10 mg Emtricitabine 200 mg Elvitegravir (EVG) 150 mg Cobicistat 150 mg Tab	1 tab daily Avoid if CrCL < 30 mL/min Take with food	• Administer 2h apart from antacids or vitamin/mineral supplements containing polyvalent cations (eg. Al, Ca, Fe, Mg, Zn) (↓ EVG absorption) • ↓ renal and bone toxicity with TAF vs. TDF • See Descovy, elvitegravir and cobicistat comments
Stribild	Tenofovir (TDF) 300 mg Emtricitabine 200 mg Elvitegravir (EVG) 150 mg Cobicistat 150 mg Tab	1 tab daily Avoid starting if CrCl < 70 mL/min Discontinue if CrCl < 50 mL/min Take with food	• Administer 2h apart from antacids or vitamin/mineral supplements containing polyvalent cations (eg. Al, Ca, Fe, Mg, Zn) (↓ EVG absorption) • ↓ renal and bone toxicity with TDF vs. TAF • See Truvada, elvitegravir and cobicistat comments
Triumeq	Abacavir 600 mg Lamivudine 300 mg Dolutegravir (DTG) 50 mg Tab	1 tab daily Avoid if CrCl < 50 mL/min Take with or without food Note: Additional 50 mg of dolutegravir should be given 12 hours after Triumeq if co-administered with certain CYP3A4 enzyme inducers	• Administer 2h before or 6h after taking medications containing polyvalent cations (eg. Al, Ca, Fe, Mg, Zn) - (↓ DTG absorption); however may be taken with food at the same time as Ca and Fe. • See Kivexa and dolutegravir comments
NNRTI-based Single Tablet Regimens (STRs)			
Atripla	Tenofovir (TDF) 300 mg Emtricitabine 200 mg Efavirenz 600 mg Tab	1 tab daily (hs) Avoid if CrCl < 50 mL/min Take on an empty stomach	• Take qHS on an empty stomach or with low-fat snack (to minimize CNS S/E of efavirenz) • See Truvada and efavirenz comments
Complera	Tenofovir (TDF) 300 mg Emtricitabine 200 mg Rilpivirine 25 mg Tab	1 tab daily Avoid if CrCl < 50 mL/min Take with a meal (400 Kcal)	• See Truvada and rilpivirine comments • Avoid initiation if viral load > 100,000 c/mL or CD4 < 200 cells/μL

3. ANTIRETROVIRAL AGENTS CONTINUED

Brand Name	Composition	Usual Adult Dose	Comments
Odefsey*	Tenofovir alafenamide (TAF) 25 mg Emtricitabine 200 mg Rilpivirine 25 mg Tab	1 tab daily Avoid if CrCl < 30 mL/min Take with a meal (400 Kcal)	• See Descovy and rilpivirine comments

* May not be covered provincially yet; may be available via compassionate access (verify with HIV program/manufacturer) or Special Access Program (SAP) - Health Canada.