CARDIOVASCULAR DRUGS:

ANTIPLATELETS AND ANTICOAGULANTS

| | INSTIS | | NNRTIS | | Pls | RTI | |
|-------------------------|--|--|--|---|---|---|---|
| | BICTEGRAVIR (Biktarvy) DOLUTEGRAVIR (Tivicay, Triumeq, Dovato, Juluca) RALTEGRAVIR (Isentress) | • ELVITEGRAVIR/ COBICISTAT (Stribild, Genvoya) | DORAVIRINE (Pifeltro, Delstrigo) RILPIVIRINE (Edurant, Complera, Odefsey, Juluca) | EFAVIRENZ (Sustiva, Atripla) ETRAVIRINE (Intelence) NEVIRAPINE (Viramune) | ATAZANAVIR (Reyataz/Norvir, Evotaz) DARUNAVIR (Prezista/Norvir, Prezcobix, Symtuza) LOPINAVIR (Kaletra) | •TENOFOVIR DISOPROXIL, TDF (Viread,Truvada, Atripla, Complera, Delstrigo, Stribild) | TENOFOVIR ALAFENAMIDE, TAF (Descovy, Biktarvy, Genvoya, Odefsey, Symtuza) ABACAVIR (Kivexa, Ziagen, Triumeq) |
| ANTICOAGULANTS | | | | | | | |
| • Apixaban (Eliquis) | | Potential for ↑ apixaban and toxicity | | Potential for ↓ apixaban | Potential for ↑ apixaban and toxicity | | |
| • Dabigatran (Pradaxa) | | Potential for ↑ dabigatran and toxicity | | | <u>PI/ritonavir</u> : Potential for ↑ dabigatran | | |
| | | | | | PI/cobicistat: Potential for ↑ dabigatran and toxicity | | |
| • Edoxaban (Lixiana) | | Potential for ↑ edoxaban and toxicity | | | Potential for ↑ edoxiban and toxicity | | |
| • Rivaroxaban (Xarelto) | | Potential for ↑ rivaroxaban and toxicity | | Potential for ↓ rivaroxaban | Potential for ↑ rivaroxaban and toxicity | | |

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| • Warfarin (Coumadin) | | Potential for ↓ warfarin | | Potential for ↓ warfarin (nevirapine) or ↑ warfarin (efavirenz, etravirine) | Potential for ↓ warfarin (ritonavir) or ↑ warfarin (cobicistat) | | |
| ANTIPLATELETS | | | | | | | |
| • ASA | | | | | | Potential for renal toxicity with high dose or prolonged ASA use | |
| • Clopidogrel (Plavix) | | Potential for ↓ active metabolite of clopidogrel | | Potential for ↓ active metabolite of clopidogrel (efavirenz, etravirine) | Potential for ↓ active metabolite of clopidogrel | | |
| • Prasugrel (Effient) | | | | | | | |
| • Ticagrelor (Brilinta) | | Potential for ↑ ticagrelor and | | Potential for ↓ ticagrelor and | Potential for ↑ ticagrelor and | | |

toxicity

toxicity

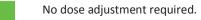
toxicity

CARDIOVASCULAR

Mechanism of Drug Interactions, Management and Monitoring

| Class | Mechanism of Interaction | Main Interacting ARVs | Management | Monitoring |
|---|--|---|--|--|
| Antiplatelets | Inhibition of CYP3A4, P-gp (ticagrelor) | Ritonavir and cobicistat- boosted protease inhibitors and elvitegravir | Contraindicated. Prasugrel may be used. | Ticagrelor toxicity: dyspnea, headache, epistaxis, chest pain, bleeding events |
| | Induction of CYP3A4, P-gp (ticagrelor) | Efavirenz, etravirine, nevirapine | Avoid coadministration. Prasugrel may be used. | Ticagrelor efficacy |
| | Inhibition of 2C19 (clopidogrel) | Etravirine, efavirenz | Use with caution. May wish to consider alternatives to clopidogrel, such as prasugrel. | Antiplatelet activity |
| | Inhibition of 3A4 (activation of prodrug of clopidogrel) | Ritonavir and cobicistat- boosted protease inhibitors and elvitegravir. | Use with caution. May wish to consider alternatives to clopidogrel, such as prasugrel. | Antiplatelet activity |
| | Combining nephrotoxic agents (ASA) | Tenofovir disoproxil (TDF) containing regimens | Avoid high-dose or prolonged ASA use if possible. Consider alternate HIV agent, such as abacavir or tenofovir alafenamide TAF. | Monitor renal function. Assess OTC NSAID use. |
| Direct acting oral anticoagulants (DOACs) | Inhibition of CYP3A4, P-gp (rivaroxaban, apixaban) | Ritonavir and cobicistat- boosted protease inhibitors and elvitegravir. | Apixaban and rivaroxaban are contraindicated. | Anticoagulant toxicity. |
| | Induction of CYP3A4, P-gp (rivaroxaban, apixaban) | Enzyme-inducing NNRTIs (efavirenz, etravirine, nevirapine) | Avoid use. Consider alternative anticoagulant such as warfarin. | Anticoagulant efficacy. |
| | Inhibition of P-gp (dabigatran,edoxaban) | Ritonavir and cobicistat- boosted protease inhibitors and elvitegravir | Dabigatran and edoxaban monograph advises caution with P-gp inhibitors. Preliminary pharmacokinetic data suggest that a clinically significant interaction may occur more so with cobicistat due to intestinal PgP inhibition. | Anticoagulant toxicity |
| Warfarin | Induction of CYP2C9 | Ritonavir boosted regimens, nevirapine, elvitegravir/cobicistat | Increase warfarin dose as needed to maintain therapeutic INR. | Anticoagulant efficacy |
| | Inhibition of CYP2C9 | Efavirenz, etravirine | Decrease warfarin dose as needed to maintain therapeutic INR. | Warfarin toxicity: bleeding, dizziness, headache, shortness of breath, hypotension |

Legend:



Use combination with caution. Adjustment in drug dose or frequency or additional/more frequent monitoring may be required. May wish to consult with a pharmacist knowledgeable in HIV drug interactions.

Contraindicated/avoid combination.



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