Emtricitabine (*Emtriva*)

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**Drug Summary**

Emtricitabine is a component of the nucleoside reverse transcriptase inhibitor (NRTI) backbone of many initial and salvage antiretroviral regimens. Advantages of emtricitabine are high tolerability, few drug interactions, and coformulation as part of a number of combination tablets and single-tablet regimens. Emtricitabine is highly similar to lamivudine and the two are generally considered to be equivalent; they are used interchangeably but never together (since these two drugs have no significant additive potency and have equivalent resistance profiles). Emtricitabine has a relatively low barrier to resistance and if a patient develops virologic failure while taking a regimen that includes emtricitabine, the first NRTI resistance mutation to occur is generally an emtricitabine resistance mutation (M184V). Emtricitabine is also a component of the only FDA approved medication for HIV preexposure prophylaxis, tenofovir DF-emtricitabine. Although emtricitabine does not have an FDA approval to treat hepatitis B virus (HBV) infection, it has significant activity against HBV and it has been widely used in combination with tenofovir DF (and tenofovir alafenamide) to treat HBV in persons coinfected with HIV. When concomitantly treating HIV and HBV, emtricitabine should be used in combination with another antiretroviral agent effective against HBV, since emtricitabine monotherapy leads to high rates of HBV resistance and failure.

**Key Clinical Trials**

An early, randomized, double-blind, double-dummy trial compared emtricitabine to stavudine (each given with didanosine and efavirenz); the emtricitabine arm demonstrated higher virologic efficacy and tolerability [FTC-301A]. Another trial of individuals with stable virologic suppression on lamivudine-containing regimens randomized participants to continue lamivudine or switch from lamivudine to emtricitabine; rates of virologic suppression were equivalent in the two arms [FTC-303/FTC-350]. Since that time, emtricitabine has been shown to be effective in initial therapy in combination with tenofovir DF or tenofovir alafenamide plus a number of different anchor drugs, including efavirenz [GS-934], rilpivirine [ECHO and THRIVE], darunavir [FLAMINGO], raltegravir [STARTMRK], dolutegravir [SPRING-2], elvitegravir [Study 103 and Study 104/111], and bictegravir [GS-380-1489 and GS-380-1490] In addition, emtricitabine has been studied in combination with tenofovir DF for HIV preexposure prophylaxis [iPrEx and Partners PrEP].
**Adverse Effects**

Overall, emtricitabine is well tolerated. It may rarely cause side effects such as headache, diarrhea, nausea, or rash. It may be difficult to distinguish the cause of these side effects, since they are more commonly caused by other antiretrovirals in a regimen.

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**Resistance**

For a listing of the most common clinically significant mutations associated with emtricitabine (FTC) resistance, see the [NRTI Resistance Notes on the Stanford University HIV Drug Resistance Database](https://www.hiv.uw.edu/page/treatment/drugs/emtricitabine).

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**Key Drug Interactions**

For complete information on emtricitabine-related drug interactions, see the [Drug Interactions section in the Emtricitabine (Emtriva) Prescribing Information](https://www.hiv.uw.edu/page/treatment/drugs/emtricitabine).