tipranavir (ti-pra-naveer)  

**Aptivus**  

**Classification**  
Therapeutic: antiretrovirals  
Pharmacologic: protease inhibitors  

**Pregnancy Category C**  

**Indications**  
Advanced HIV disease resistant to more than one protease inhibitor (must be used with ritonavir).  

**Action**  
Inhibits processing of viral polyproteins, preventing formation of mature virions.  

**Therapeutic Effects:**  
Decreased viral load and sequelae of HIV infection.  

**Pharmacokinetics**  
**Absorption:** Well absorbed following oral administration.  
**Distribution:** Unknown.  
**Protein Binding:** 99.9%.  
**Metabolism and Excretion:** Rapidly and extensively metabolized (primarily by CYP3A4), requiring co-administration with ritonavir as a metabolic inhibitor to achieve therapeutic blood levels; eliminated mostly in feces, minimal renal excretion.  
**Half-life:** 5.5–6 hr.  

**TIME/ACTION PROFILE (blood levels*)**  
**ROUTE** | **ONSET** | **PEAK** | **DURATION**  
---|---|---|---  
PO | rapid | 2 hr | 12 hr  
*With ritonavir  

**Contraindications/Precautions**  
**Contraindicated in:** Hypersensitivity; Moderate to severe hepatic impairment (Child-Pugh Class B or C); Concurrent use of some antiarrhythmics (amiodarone, flecainide, propafenone, quinidine), ergot derivatives (dihydroergotamine, ergonovine, ergotamine, methylergonovine), sildenafil (Revatio), alfuzosin, midazolam (oral) or triazolam.  

Use Cautiously in:  
Known sulfonamide allergy (contains sulfa moiety); Pre-existence of liver disease (may increase risk of hepatotoxicity); History of or risk factors for diabetes (may cause hyperglycemia); Hemorrhagic (may risk of bleeding).  

**Adverse Reactions/Side Effects**  
**CV:** INTRACRANIAL HEMORRHAGE, fatigue, headache.  
**GI:** HEPATOTOXICITY, abdominal pain, diarrhea, nausea, vomiting.  
**Derm:** Rash (rare in women and pubes).  
**Endo:** Hypoglycemia.  
**Metab:** Cholesterol, triglycerides.  
**Misc:** Allergic reactions, bleeding, fat redistribution, fever, immune reconstitution syndrome.  

**Interactions**  
**Drug-Drug:** Risk of toxicity from some antiarrhythmics (amiodarone, flecainide, propafenone, quinidine), ergot derivatives (dihydroergotamine, ergonovine, ergotamine, methylergonovine), sildenafil (Revatio), alfuzosin, midazolam (oral) or triazolam; Concurrent use contraindicated.  
Risk of myopathy with atorvastatin; avoid concurrent use.  
Risk of adverse effects with salmeterol; concurrent use is not recommended.  
Risk of adverse effects with salmeterol; concurrent use is not recommended.  
May lead to increased levels; initiate bosentan at 62.5 mg once daily or every other day; if patient already receiving bosentan, discontinue bosentan at least 36 hr before initiation of tipranavir and then restart bosentan at least 10 days later at 12.5 mg once daily or every other day.  
May lead to increased levels; initiate tadalafil (Adcirca) at 20 mg once daily; if patient already receiving tadalafil (Adcirca), discontinue tadalafil (Adcirca) at least 7 days later at 20 mg once daily.  
May lead to increased levels; dose of colchicine; do not administer colchicine if patients have renal or hepatic impairment.  
May lead to increased levels; initiate tadalafil (Adcirca) at 10 mg once daily or every other day.  
May lead to increased levels.  
**Route/Dosage**  
**PO (Adults):** 500 mg twice daily with ritonavir 200 mg twice daily.  
**PO (Children ≥2 yr):** 14 mg/kg (max: 500 mg/dose) twice daily with ritonavir 6 mg/kg (max: 200 mg/dose) twice daily; if intolerance develops, may dose to tipranavir 12 mg/kg twice daily with ritonavir 5 mg/kg twice daily.
NURSING IMPLICATIONS

Assessment
- Assess for change in severity of HIV symptoms and for symptoms of opportunistic infections during therapy.
- Monitor for hepatitis (fatigue, malaise, anorexia, nausea, jaundice, bileftakuria, adolic stools, liver tenderness, hepatomegaly).
- Assess for allergy. May be cross-sensitive.
- Lab Test Considerations: Monitor viral load and CD4 counts regularly during therapy.
- May cause AST and ALT; monitor prior to and frequently during therapy. Discontinue tipranavir if symptomatic AST and ALT of 10 times the upper limit of normal or symptomatic AST and ALT of 5–10 times the upper limit of normal and bilirubin ≥ 2.5 times the upper limit of normal occur.
- Monitor triglyceride and cholesterol levels prior to and periodically during therapy; may cause hyperlipidemia.
- May cause hyperglycemia. Monitor blood glucose carefully, especially in patients with diabetes.

Potential Nursing Diagnoses
- Risk for infection (Indications)
- Noncompliance (Patient/Family Teaching)

Implementation
- PO: Administer tipranavir with ritonavir tablets twice daily with meals. Administer tipranavir with ritonavir capsules with or without meals. Swallow capsules whole; do not open or chew. Bioavailability is increased with high-fat meal.
- Store capsules in refrigerator. Use within 60 days of opening bottle. Write opening date on label; do not use after expiration date written. If used away from home, bottle may be kept at room temperature in a cool place.

Patient/Family Teaching
- Emphasize the importance of taking tipranavir as directed, at evenly spaced times throughout day. Patients should read the Patient Package Insert before initiating therapy and with each prescription refill. Do not take more than prescribed amount and do not stop taking without consulting health care professional. Take missed doses as soon as remembered, do not double doses.
- Advise patients taking oral solution not to take supplemental vitamin E greater than 150 IU/day of vitamin E which is higher than the RDAs (adults 10 IU; pediatric 10 IU).
- Instruct patient that tipranavir should not be shared with others.
- Instruct patient to notify health care professional of all Rx or OTC medications, vitamins, or herbal products being taken and consult health care professional before taking any new medications.
- Instruct patient that tipranavir does not cure AIDS or prevent associated opportunistic infections. Patient should not reduce the risk of transmission of HIV to others through sexual contact or blood contamination. Caution patient to use a condom during sexual contact and to avoid sharing needles or donating blood to prevent spreading the AIDS virus to others.
- Advise patients to stop taking tipranavir and ritonavir and notify health care professional immediately if signs of hepatitis (fatigue, malaise, anorexia, nausea, jaundice) or unusual bleeding occur. May require discontinuation of therapy.
- Instruct patient that tipranavir may cause hyperlipidemia. Advise patient to notify health care professional if increased thirst or hunger; unexplained weight loss; increased urination; fatigue; or oily, itchy skin occur.
- Instruct patient that redistribution and accumulation of body fat may occur, causing central obesity, dorsocervical fat enlargement (buffalo hump), peripheral wasting, breast enlargement, and cushingoid appearance. The cause and long-term effects are not known.
- Advise women taking hormonal contraceptives to use a nonhormonal form of contraception during therapy and of increased risk of rash.
- Emphasize the importance of regular follow-up exams and blood counts to determine progress and monitor for side effects.

Evaluation/Desired Outcomes
- Delayed progression of AIDS and decreased opportunistic infections in patients with HIV.
- Decrease in viral load and improvement in CD4 cell counts.

Why was this drug prescribed for your patient?