### Table 13c. Antiretroviral Therapy-Associated Adverse Effects and Management Recommendations—Gastrointestinal Effects  
(Last updated April 27, 2017; last reviewed April 27, 2017)

<table>
<thead>
<tr>
<th>Adverse Effects</th>
<th>Associated ARVs</th>
<th>Onset/Clinical Manifestations</th>
<th>Estimated Frequency</th>
<th>Risk Factors</th>
<th>Prevention/ Monitoring</th>
<th>Management</th>
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</table>
| Nausea/ Vomiting | Principally ZDV and PIs, but can occur with all ARVs and COBI | Onset:  
• Early  
Presentation:  
• Nausea, emesis—may be associated with anorexia and/or abdominal pain. | Varies with ARV agent; 10% to 30% in some series | Unknown | Instruct patient to take PIs with food.  
Monitor for weight loss, ARV adherence. | Reassurance—generally improves over time (usually 6–8 weeks)  
Supportive care.  
Antiemetics may be useful in extreme or persistent cases. |
| Diarrhea | PIs (particularly NFV, LPV/r, FPV/r), buffered ddl, INSTIs (mild) | Onset:  
• Early  
Presentation:  
• Generally soft, more frequent stools | Varies with ARV agent; 10% to 30% in some series | Unknown | Monitor for weight loss, dehydration. | Exclude infectious causes of diarrhea if prolonged or severe.  
Reassurance—generally improves over time (usually 6–8 weeks)  
Although treatment data in children are lacking, potentially useful modalities include:  
• Dietary modification  
• Calcium carbonate (should not be used with DTG)  
• Bulk-forming agents (psyllium)  
• Antimotility agents (loperamide)  
• Crofelemer is FDA-approved for treatment of ART-associated diarrhea in adults, but not in children. |
| Pancreatitis | ddl, d4T (especially concurrently), boosted PIs | Onset:  
• Any time, usually after months of therapy  
Presentation:  
• Emesis, abdominal pain, elevated amylase and lipase (asymptomatic hyperamylasemia or elevated lipase do not in and of themselves indicate pancreatitis). | <2% in recent series | Use of concomitant medications associated with pancreatitis (e.g., TMP-SMX, pentamidine, ribavirin)  
Hypertriglyceridemia  
Advanced disease  
Previous episode of pancreatitis  
Alcohol use | Avoid use of ddl in patients with a history of pancreatitis.  
Discontinue offending agent—avoid reintroduction.  
Manage symptoms of acute episode.  
If associated with hypertriglyceridemia, consider interventions to lower TG levels. |

**Key to Acronyms:**  
ART = antiretroviral therapy; ARV = antiretroviral; COBI = cobicistat; d4T = stavudine; ddl = didanosine; DTG = dolutegravir; FDA = Food and Drug Administration; FPV/r = fosamprenavir/ritonavir; INSTI = integrase strand transfer inhibitor; LPV/r = lopinavir/ritonavir; NFV = nelfinavir; PI = protease inhibitor; RTV = ritonavir; TDF = tenofovir disoproxil fumarate; TG = triglyceride; TMP-SMX = trimethoprim sulfamethoxazole; ZDV = zidovudine

**Guidelines for the Use of Antiretroviral Agents in Pediatric HIV Infection**
References


