

**Table 15c. Antiretroviral Therapy-Associated Adverse Effects and Management Recommendations—Gastrointestinal Effects** (Last updated April 16, 2019; **last reviewed April 7, 2021**) (page 1 of 2)

Adverse Effects	Associated ARVs	Onset/Clinical Manifestations	Estimated Frequency	Risk Factors	Prevention/Monitoring	Management
<b>Nausea/Vomiting</b>	All ARV drugs, but most notably RTV-boosted PIs	<p><b>Onset:</b></p> <ul style="list-style-type: none"> <li>• Early</li> </ul> <p><b>Presentation:</b></p> <ul style="list-style-type: none"> <li>• Nausea and emesis, both of which may be associated with anorexia and/or abdominal pain.</li> </ul>	Varies by ARV agent; generally <15%	Unknown	<p>Instruct patient to take PIs with food.</p> <p>Monitor for weight loss and ARV adherence.</p>	<p>Reassure patient that these adverse effects generally improve over time (usually in 6–8 weeks).</p> <p>Consider switching to ARV drugs with smaller tablet sizes (see <a href="#">Appendix A, Table 2</a>).</p> <p>Provide supportive care.</p> <p>In extreme or persistent cases, use antiemetics or switch to another ARV regimen.</p>
<b>Diarrhea</b>	All ARV drugs, but most notably RTV-boosted PIs	<p><b>Onset:</b></p> <ul style="list-style-type: none"> <li>• Early</li> </ul> <p><b>Presentation:</b></p> <ul style="list-style-type: none"> <li>• More frequent bowel movements and stools that are generally soft.</li> </ul>	Varies by ARV agent; generally <15%	Unknown	Monitor for weight loss and dehydration.	<p>In prolonged or severe cases, exclude infectious or noninfectious (e.g., lactose intolerance) causes of diarrhea.</p> <p>Reassure patient that this adverse effect generally improves over time (usually in 6–8 weeks). Consider switching to another ARV regimen in persistent and severe cases.</p> <p>Treatment data in children are lacking; however, the following strategies may be useful when the ARV regimen cannot be changed:</p> <ul style="list-style-type: none"> <li>• Modifying the diet</li> <li>• Using bulk-forming agents (e.g., psyllium)</li> <li>• Using antimotility agents (e.g., loperamide)</li> <li>• Using crofelemer, which is approved by the FDA to treat ART-associated diarrhea in adults aged ≥18 years; no pediatric data are available.</li> </ul>

**Table 15c. Antiretroviral Therapy-Associated Adverse Effects and Management Recommendations—Gastrointestinal Effects** (Last updated April 16, 2019; **last reviewed April 7, 2021**) (page 2 of 2)

Adverse Effects	Associated ARVs	Onset/Clinical Manifestations	Estimated Frequency	Risk Factors	Prevention/Monitoring	Management
<b>Pancreatitis</b>	Rare, but may occur with NRTIs or RTV-boosted PIs	<p><b>Onset:</b></p> <ul style="list-style-type: none"> <li>Any time, usually after months of therapy</li> </ul> <p><b>Presentation:</b></p> <ul style="list-style-type: none"> <li>Emesis, abdominal pain, elevated amylase and lipase levels (asymptomatic hyperamylasemia or elevated lipase do not in and of themselves indicate pancreatitis)</li> </ul>	<2%	<p>Use of concomitant medications that are associated with pancreatitis (e.g., TMP-SMX, pentamidine, ribavirin)</p> <p>Hypertriglyceridemia</p> <p>Advanced HIV infection</p> <p>Previous episode of pancreatitis</p> <p>Alcohol use</p>	Measure serum amylase and lipase concentrations if persistent abdominal pain develops.	<p>Discontinue offending agent and <b>avoid reintroduction.</b></p> <p>Manage symptoms of acute episodes.</p> <p>If pancreatitis is associated with hypertriglyceridemia, consider using interventions to lower TG levels.</p>

**Key:** ART = antiretroviral therapy; ARV = antiretroviral; FDA = Food and Drug Administration; NRTI = nucleoside reverse transcriptase inhibitor; PI = protease inhibitor; RTV = ritonavir; TG = triglyceride; TMP-SMX = trimethoprim sulfamethoxazole

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