

**NAME:** John Doe  
**ACC #:** BS7  
**DOB:** 12/24/1800  
**SEX:** Male

**SPECIMEN TYPE:** Buccal Swab  
**COLLECTION DATE:** 1/1/1900  
**RECEIVED DATE:** 1/1/1900  
**REPORT DATE:** 8/26/2019

**Dr. Bauer**  
 123456789

## Pharmacogenetic Gastroenterology Report

### Current Patient Medications

Zofran, Prevacid, Lexapro, Citalopram, Xanax



**Citalopram**  
*Celexa®*

**Insufficient Response to Citalopram (CYP2C19: Rapid Metabolizer)**

**ACTIONABLE**

At standard label-recommended dosage, citalopram plasma concentrations levels are expected to be low which may result in a loss of efficacy. Consider an alternative medication. If citalopram is warranted, consider increasing the dose to a maximum of 150% and titrate based on the clinical response and tolerability.



**Lexapro**  
*Escitalopram*

**Insufficient Response to Escitalopram (CYP2C19: Rapid Metabolizer)**

**ACTIONABLE**

At standard label-recommended dosage, escitalopram plasma concentrations levels are expected to be low which may result in a loss of efficacy. Consider an alternative medication. If escitalopram is warranted, consider increasing the dose to a maximum of 150% and titrate based on the clinical response and tolerability.



**Prevacid**  
*Lansoprazole*

**Insufficient Response to Lansoprazole (CYP2C19: Rapid Metabolizer)**

**INFORMATIVE**

- Helicobacter pylori eradication: increase dose by 200% and be alert to insufficient response.
- Other: be extra alert to insufficient response and consider dose increase of 200%.



**Xanax**  
*Alprazolam*

**Normal Response to Alprazolam**

**INFORMATIVE**

**Pharmacogenetic guidance:** Alprazolam is primarily eliminated by metabolism via CYP3A4 and CYP3A5. Genetic polymorphisms of these genes are not expected to affect the efficacy or safety profiles of this drug. **Polypharmacy guidance:** The concomitant use of alprazolam with CYP3A4 inhibitors may result in increased alprazolam levels and prolonged sedation. Impairment of motor skills are also observed with some combinations. Monitor patients for exaggerated sedative effects. If possible, alprazolam should be avoided in patients receiving strong inhibitors of CYP3A4 such as ketoconazole, itraconazole and ritonavir. Drugs that induce CYP3A enzymes may decrease alprazolam levels, which results in a loss of efficacy.



**Zofran**  
*Ondansetron*

**Normal Response to Ondansetron (CYP2D6: Normal Metabolizer)**

**ACTIONABLE**

Ondansetron can be prescribed at standard label-recommended dosage and administration.



**Zofran**  
*Ondansetron*

**Favorable Response to Standard Ondansetron Dosing (ABCB1: Homozygous Mutant - Variant Allele Present )**

**INFORMATIVE**

The genotype result predicts that the patient has low ABCB1 transporter expression. Ondansetron can be prescribed at standard label-recommended dosage and administration.



A medication has potentially reduced efficacy, increased toxicity or the patient has an increased risk for the indicated condition.

**ACTIONABLE**



Guidelines exist for adjusting dosage, increased vigilance or the patient has a moderate risk for the indicated condition.



The medication can be prescribed according to standard regimens or the patient's risk for the indicated condition is not increased.

**INFORMATIVE**

Recommendations based upon publications by international pharmacogenetic expert groups, consortia or regulatory bodies (CPIC, DPWG, FDA, EMA). Recommendations are suitable for implementation in a clinical setting. Guidelines may change as knowledge arises.

There are insufficient or contradictory findings documenting the impact of a given genetic polymorphism or drug interaction. Recommendations are informative and implementation in a clinical setting is optional.



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## Potentially Impacted Medications










CATEGORY	DRUG CLASS	STANDARD PRECAUTIONS	USE WITH CAUTION	CONSIDER ALTERNATIVES
Anticancer Agents	Antifolates		Methotrexate (Trexall®)	
Gastrointestinal	Antiemetics	Aprepitant (Emend-oral®) Dolasetron (Anzemet®) Fosaprepitant (Emend-i.v®) Fosnetupitant-Palonosetron (Akynzeo-i.v®) Metoclopramide (Reglan®) Netupitant-Palonosetron (Akynzeo-oral®) Ondansetron (Zofran®, Zuplenz®) Palonosetron (Aloxi®) Rolapitant (Varubi®)		
	Proton Pump Inhibitors	Rabeprazole (Aciphex®)	Dexlansoprazole (Dexilant®, Kapidex®) Esomeprazole (Nexium®) Lansoprazole (Prevacid®) Omeprazole (Prilosec®) Pantoprazole (Protonix®)	

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## Dosing Guidance

 <b>Aprepitant</b> <i>Emend-oral®</i>	<b>Normal Response to Aprepitant</b> <b>Pharmacogenetic guidance:</b> Aprepitant undergoes extensive metabolism via N- and O-dealkylations. These pathways are primarily catalyzed by CYP3A4 with minor involvement from CYP1A2 and CYP2C19. The drug is also glucuronidated by UGT1A4 and UGT1A3. No genetically guided drug selection or dosing recommendations are available. <b>Polypharmacy Guidance:</b> In presence of moderate and strong CYP3A4 inhibitors, a significantly increased exposure of aprepitant is expected which may lead to adverse reactions. These drugs should be avoided with aprepitant. Strong CYP3A4 inducers can significantly decrease aprepitant exposure resulting in a loss of efficacy. These drugs should also be avoided with aprepitant. Aprepitant is a moderate (dose-dependent) inhibitor, and an inducer of CYP3A4 and an inducer of CYP2C9. Some substrates of these enzymes are contraindicated with aprepitant while others should be closely monitored and their doing adjusted when coadministered with this antiemetic medication.	<b>ACTIONABLE</b>
 <b>Dexlansoprazole</b> <i>Dexilant®, Kapidex®</i>	<b>Insufficient Response to Dexlansoprazole (CYP2C19: Rapid Metabolizer)</b> Dexlansoprazole is the R-enantiomer of lansoprazole. <ul style="list-style-type: none"> <li>• Helicobacter pylori eradication: increase dose by 200% and be alert to insufficient response.</li> <li>• Other: be extra alert to insufficient response and consider dose increase of 200%.</li> </ul>	<b>INFORMATIVE</b>
 <b>Dolasetron</b> <i>Anzemet®</i>	<b>Normal Response to Dolasetron (CYP2D6: Normal Metabolizer)</b> Dolasetron can be prescribed at standard label-recommended dosage and administration.	<b>INFORMATIVE</b>
 <b>Esomeprazole</b> <i>Nexium®</i>	<b>Insufficient Response to Esomeprazole (CYP2C19: Rapid Metabolizer)</b> <ul style="list-style-type: none"> <li>• Helicobacter pylori eradication: increase dose by 50-100% and be alert to insufficient response.</li> <li>• Other: be extra alert to insufficient response and consider dose increase of 50-100%.</li> </ul>	<b>INFORMATIVE</b>
 <b>Fosaprepitant</b> <i>Emend-i.v®</i>	<b>Normal Response to Fosaprepitant</b> <b>Pharmacogenetic guidance:</b> Fosaprepitant is a prodrug of aprepitant which is rapidly converted to aprepitant following intravenous administration. Its antiemetic effects are attributable to aprepitant. Aprepitant undergoes extensive metabolism via N- and O-dealkylations. These pathways are primarily catalyzed by CYP3A4 with minor involvement from CYP1A2 and CYP2C19. The drug is also glucuronidated by UGT1A4 and UGT1A3. No genetically guided drug selection or dosing recommendations are available. <b>Polypharmacy Guidance:</b> In presence of moderate and strong CYP3A4 inhibitors, a significantly increased exposure of aprepitant is expected which may lead to adverse reactions. These drugs should be avoided with fosaprepitant. Strong CYP3A4 inducers can significantly decrease aprepitant exposure resulting in a loss of efficacy. These drugs should also be avoided with fosaprepitant. Aprepitant is a moderate (dose-dependent) inhibitor, and an inducer of CYP3A4 and an inducer of CYP2C9. Some substrates of these enzymes are contraindicated with fosaprepitant while others should be closely monitored and their doing adjusted when coadministered with this antiemetic medication.	<b>ACTIONABLE</b>
 <b>Fosnetupitant-Palonosetron</b> <i>Akynzeo-i.v®</i>	<b>Normal Response to Fosnetupitant-Palonosetron (CYP2D6: Normal Metabolizer)</b> <u>Fosnetupitant:</u> Fosnetupitant is converted to netupitant via metabolic hydrolysis. Netupitant is extensively metabolized to three major metabolites (desmethyl, N-oxide and a hydroxy-methyl derivatives). Metabolism is mediated primarily by CYP3A4 and to a lesser extent by CYP2C9 and CYP2D6. No genetically guided drug selection or dosing recommendations are available for this drug. Fosnetupitant can be prescribed at standard label-recommended dosage and administration. <u>Palonosetron:</u> Palonosetron can be prescribed at standard label-recommended dosage and administration.	<b>INFORMATIVE</b>
 <b>Lansoprazole</b> <i>Prevacid®</i>	<b>Insufficient Response to Lansoprazole (CYP2C19: Rapid Metabolizer)</b> <ul style="list-style-type: none"> <li>• Helicobacter pylori eradication: increase dose by 200% and be alert to insufficient response.</li> <li>• Other: be extra alert to insufficient response and consider dose increase of 200%.</li> </ul>	<b>INFORMATIVE</b>

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 <b>Methotrexate</b> <i>Trexall®</i>	<b>Increased Risk for Methotrexate Toxicity (MTHFR: Reduced MTHFR Activity)</b> <p>The patient carries one copy of the MTHFR c.665C&gt;T variant resulting in a reduced MTHFR activity. <b>Malignancy:</b> Leukemia or lymphoma patients who are treated with methotrexate standard regimens might have an increased likelihood of treatment interruptions due to methotrexate toxicity. Monitor the patient closely for increased side effects and adjust the dose accordingly. Other genetic and clinical factors may also influence the patient's risk for toxicity and response to methotrexate treatment. <b>Nonmalignant conditions:</b> a limited number of studies found an association between individuals carrying the MTHFR c.665C&gt;T variant and methotrexate-induced toxicity in rheumatoid arthritis patients. However, there is insufficient data to calculate dose adjustment. Monitor patient closely for increased side effects and adjust the dose accordingly. Other genetic and clinical factors may also influence the patient's risk for toxicity and response to methotrexate treatment.</p>	<b>INFORMATIVE</b>
 <b>Metoclopramide</b> <i>Reglan®</i>	<b>Normal Response to Metoclopramide (CYP2D6: Normal Metabolizer)</b> <p>Metoclopramide can be prescribed at standard label-recommended dosage and administration.</p>	<b>ACTIONABLE</b>
 <b>Netupitant-Palonosetron</b> <i>Akynzeo-oral®</i>	<b>Normal Response to Netupitant-Palonosetron (CYP2D6: Normal Metabolizer)</b> <p><u>Netupitant:</u> Netupitant is extensively metabolized to three major metabolites (desmethyl, N-oxide and a hydroxy-methyl derivatives). Metabolism is mediated primarily by CYP3A4 and to a lesser extent by CYP2C9 and CYP2D6. No genetically guided drug selection or dosing recommendations are available for this drug. Netupitant can be prescribed at standard label-recommended dosage and administration.</p> <p><u>Palonosetron:</u> Palonosetron can be prescribed at standard label-recommended dosage and administration.</p>	<b>INFORMATIVE</b>
 <b>Omeprazole</b> <i>Prilosec®</i>	<b>Insufficient Response to Omeprazole (CYP2C19: Rapid Metabolizer)</b> <ul style="list-style-type: none"> <li>Helicobacter pylori eradication: increase dose by 100-200% and be alert to insufficient response.</li> <li>Other: be extra alert to insufficient response and consider dose increase of 100-200%.</li> </ul>	<b>ACTIONABLE</b>
 <b>Ondansetron</b> <i>Zofran®, Zuplenz®</i>	<b>Normal Response to Ondansetron (CYP2D6: Normal Metabolizer)</b> <p>Ondansetron can be prescribed at standard label-recommended dosage and administration.</p>	<b>ACTIONABLE</b>
 <b>Palonosetron</b> <i>Aloxi®</i>	<b>Normal response to Palonosetron (CYP2D6: Normal Metabolizer)</b> <p>Palonosetron can be prescribed at standard label-recommended dosage and administration.</p>	<b>INFORMATIVE</b>
 <b>Pantoprazole</b> <i>Protonix®</i>	<b>Insufficient Response to Pantoprazole (CYP2C19: Rapid Metabolizer)</b> <ul style="list-style-type: none"> <li>Helicobacter pylori eradication: increase dose by 400% and be alert to insufficient response.</li> <li>Other: be extra alert to insufficient response and consider dose increase of 400%.</li> </ul>	<b>ACTIONABLE</b>
 <b>Rabeprazole</b> <i>Aciphex®</i>	<b>Normal Response to Rabeprazole (CYP2C19: Rapid Metabolizer)</b> <p>Rabeprazole can be prescribed at standard dosage and administration.</p>	<b>INFORMATIVE</b>
 <b>Rolapitant</b> <i>Varubi®</i>	<b>Normal Response to Rolapitant</b>	<b>ACTIONABLE</b>

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**Pharmacogenetic guidance:** Rolapitant is metabolized primarily by CYP3A4 to a major active metabolite, (C4pyrrolidine-hydroxylated rolapitant). Rolapitant is eliminated primarily through the hepatic/biliary route. No genetically guided drug selection or dosing recommendations are available. **Polypharmacy Guidance:** Strong CYP3A4 inducers can significantly decrease rolapitant exposure resulting in a loss of efficacy. These drugs should be avoided with rolapitant. Rolapitant is a moderate CYP2D6 inhibitor and some CYP2D6 substrates (e.g. thioridazine, pimozone) are contraindicated with rolapitant while others should be closely monitored and their dosing adjusted when coadministered with this antiemetic medication. Rolapitant is an inhibitor two major drug efflux transporters: breast-cancer-resistance protein (BCRP) and P-glycoprotein (P-gp). Increased plasma concentrations of BCRP or P-gp substrates may result in potential adverse reactions when coadministered with rolapitant.

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## Test Details

Gene	Genotype	Phenotype	Clinical Consequences
CYP2C19	*1/*17	Rapid Metabolizer	Consistent with a significant increase in CYP2C19 activity. Potential risk for side effects or loss of efficacy with drug substrates.
CYP2D6	*1/*5	Normal Metabolizer	Consistent with a typical CYP2D6 activity. This test did not identify risks for side effects or loss of efficacy with drug substrates.
CYP3A4	*1/*1	Normal Metabolizer	Consistent with a typical CYP3A4 activity. Caution is advised when prescribing narrow therapeutic index drugs. Alternative drugs or dose adjustment may be required if CYP3A inhibitors or inducers are co-prescribed.

**Alleles Tested:** CYP2C19 \*2, \*3, \*4, \*4B, \*5, \*6, \*7, \*8, \*9, \*10, \*13, \*17; CYP2D6 \*2, \*3, \*4, \*4M, \*6, \*7, \*8, \*9, \*10, \*11, \*12, \*15, \*17, \*29, \*35, \*41, \*5 (gene deletion), XN (gene duplication); CYP3A4 \*1B, \*3, \*6, \*8, \*11, \*12, \*13, \*15, \*16A, \*16B, \*17, \*18A, \*18B, \*22; MTHFR c.665C>T, c.1286A>C

*Limitation: This test will not detect all the known alleles that result in altered or inactive tested genes. This test does not account for all individual variations in the individual tested. Absence of a detectable gene mutation does not rule out the possibility that a patient has different phenotypes due to the presence of an undetected polymorphism or due to other factors such as drug-drug interactions, comorbidities and lifestyle habits. Technical limitations include the possibility of laboratory error and inaccuracy of the test due to unknown rare variants.*

*Methodology: Bead array and e-sensor based assays detect listed alleles and most rare variants with known clinical significance and analytical sensitivity and specificity >99%.*

*Lab Disclaimer: Genesys Diagnostics Inc. has validated the Genotype Test. The performance characteristics of this test were determined by Genesys Diagnostics Inc. This test is an FDA modified and Lab Developed Test.*

*Translational Software Disclaimer: The information presented on this report is provided as general educational health information. The content is not intended to be a substitute for professional medical advice, diagnosis, or treatment. Only a physician, pharmacist or other healthcare professional should advise a patient on the use of the medications prescribed.*

*The pharmacogenetic assay involves use of reporting software and genotype-phenotype associations performed by Translational Software (www.translationalsoftware.com). The software has not been evaluated by the Food and Drug Administration. The software, and the report generated by the software, is not intended to diagnose, treat, cure, or prevent any disease. A qualified designee within the lab uses Translational Software to generate and subsequently review the report. The pharmacogenetic report is one of multiple pieces of information that clinicians should consider in guiding their therapeutic choice for each patient. It remains the responsibility of the health-care provider to determine the best course of treatment for a patient. Adherence to dose guidelines does not necessarily assure a successful medical outcome.*

*Report was signed out electronically by on //.*

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





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# Comprehensive Pharmacogenetic Report with DDI

## Current Patient Medications

Zofran, Prevacid, Lexapro, Citalopram, Xanax

 <b>Citalopram</b> <i>Celexa®</i>	<b>Insufficient Response to Citalopram (CYP2C19: Rapid Metabolizer)</b> <span style="float: right;">ACTIONABLE</span> At standard label-recommended dosage, citalopram plasma concentrations levels are expected to be low which may result in a loss of efficacy. Consider an alternative medication. If citalopram is warranted, consider increasing the dose to a maximum of 150% and titrate based on the clinical response and tolerability.
 <b>Lexapro</b> <i>Escitalopram</i>	<b>Insufficient Response to Escitalopram (CYP2C19: Rapid Metabolizer)</b> <span style="float: right;">ACTIONABLE</span> At standard label-recommended dosage, escitalopram plasma concentrations levels are expected to be low which may result in a loss of efficacy. Consider an alternative medication. If escitalopram is warranted, consider increasing the dose to a maximum of 150% and titrate based on the clinical response and tolerability.
 <b>Prevacid</b> <i>Lansoprazole</i>	<b>Insufficient Response to Lansoprazole (CYP2C19: Rapid Metabolizer)</b> <span style="float: right;">INFORMATIVE</span> <ul style="list-style-type: none"> <li>Helicobacter pylori eradication: increase dose by 200% and be alert to insufficient response.</li> <li>Other: be extra alert to insufficient response and consider dose increase of 200%.</li> </ul>
 <b>Xanax</b> <i>Alprazolam</i>	<b>Normal Response to Alprazolam</b> <span style="float: right;">INFORMATIVE</span> <b>Pharmacogenetic guidance:</b> Alprazolam is primarily eliminated by metabolism via CYP3A4 and CYP3A5. Genetic polymorphisms of these genes are not expected to affect the efficacy or safety profiles of this drug. <b>Polypharmacy guidance:</b> The concomitant use of alprazolam with CYP3A4 inhibitors may result in increased alprazolam levels and prolonged sedation. Impairment of motor skills are also observed with some combinations. Monitor patients for exaggerated sedative effects. If possible, alprazolam should be avoided in patients receiving strong inhibitors of CYP3A4 such as ketoconazole, itraconazole and ritonavir. Drugs that induce CYP3A enzymes may decrease alprazolam levels, which results in a loss of efficacy.
 <b>Zofran</b> <i>Ondansetron</i>	<b>Normal Response to Ondansetron (CYP2D6: Normal Metabolizer)</b> <span style="float: right;">ACTIONABLE</span> Ondansetron can be prescribed at standard label-recommended dosage and administration.
 <b>Zofran</b> <i>Ondansetron</i>	<b>Favorable Response to Standard Ondansetron Dosing (ABCB1: Homozygous Mutant - Variant Allele Present)</b> <span style="float: right;">INFORMATIVE</span> The genotype result predicts that the patient has low ABCB1 transporter expression. Ondansetron can be prescribed at standard label-recommended dosage and administration.
 <b>Zofran &amp; Lexapro</b>	<span style="float: right;">SERIOUS</span> The risk for QT prolongation due to ondansetron is dose and route related. Intravenous (IV) doses lead to higher peak concentrations and systemic exposure and so have a greater risk for QT prolongation compared with the same dose given orally. Faster rates of IV infusion are also associated with a greater risk for QT prolongation. If concomitant therapy is needed, correct electrolyte abnormalities prior to starting therapy. Monitor closely, particularly in patients with predisposing risk factors for QT prolongation (e.g. cardiac disease, female, elderly). Electrocardiogram (ECG) monitoring should be performed in patients receiving concurrent therapy. The Canadian manufacturer of Zofran injection has specific recommendations for use of IV ondansetron in oncology patients greater than or equal to 75 years of age :- all IV doses must be diluted in 50 - 100 mL of compatible fluid and infused over at least 15 minutes- initial and repeat IV doses must not exceed 8 mg. Instruct patients to report any irregular heartbeat, dizziness, or fainting.
 <b>Zofran &amp; Citalopram</b>	<span style="float: right;">SERIOUS</span>



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The risk for QT prolongation due to ondansetron is dose and route related. Intravenous (IV) doses lead to higher peak concentrations and systemic exposure and so have a greater risk for QT prolongation compared with the same dose given orally. Faster rates of IV infusion are also associated with a greater risk for QT prolongation. If concomitant therapy is needed, correct electrolyte abnormalities prior to starting therapy. Monitor closely, particularly in patients with predisposing risk factors for QT prolongation (e.g. cardiac disease, female, elderly). Electrocardiogram (ECG) monitoring should be performed in patients receiving concurrent therapy. The Canadian manufacturer of Zofran injection has specific recommendations for use of IV ondansetron in oncology patients greater than or equal to 75 years of age :- all IV doses must be diluted in 50 - 100 mL of compatible fluid and infused over at least 15 minutes- initial and repeat IV doses must not exceed 8 mg. Instruct patients to report any irregular heartbeat, dizziness, or fainting.


## Citalopram & Lexapro


Concurrent use with agents known to prolong the QT interval is not recommended. The manufacturer recommends ECG monitoring in patients for whom citalopram is not recommended, including those receiving concurrent therapy with agents known to prolong the QT interval. Citalopram should be discontinued in patients with persistent QTc measurements greater than 500 ms. Consider obtaining serum calcium, magnesium, and potassium levels at regular intervals. Correct any electrolyte abnormalities. Instruct patients to report any irregular heartbeat, dizziness, or fainting.

SERIOUS

## Unrecognized Medications: None

-  Highly elevated risk for indicated condition or adverse drug reaction. Medication can be prescribed with monitoring; alternative therapy may be needed.
-  Moderately elevated risk for indicated condition or adverse drug reaction. Medication can be prescribed with monitoring; therapy adjustment may be needed.
-  Typical risk for indicated condition or adverse drug reaction. Medication can be prescribed according to standard dosing guidelines.

 PHARMACOGENETIC RESULTS

 DRUG-DRUG INTERACTIONS

- ACTIONABLE** Recommendations are suitable for implementation in a clinical setting. Recommendations extracted from evidence based guidelines issued by international pharmacogenetic consortia, professional societies or regulatory bodies (CPIC, DPWG, FDA, EMA, CPNDA, ACMG).
- INFORMATIVE** Recommendations are informative and implementation in a clinical setting is optional. The evidence documenting these drug-gene associations may be limited or insufficient and may require further investigation. There are no established evidence based guidelines issued by international pharmacogenetic consortia, professional societies or regulatory bodies.
- MODERATE** Drug interactions of moderate severity. The clinician should assess the patient's characteristics and take action as needed.
- SERIOUS** Severe drug interaction or contraindicated drug combination which may produces serious consequences in most patients. This drug combination generally should not be dispensed or administered to the same patient. Action is required to reduce risk of severe adverse interaction.



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CLASS	DRUG*	PHARMACOGENETIC RESULTS			INTERACTING DRUGS
		✓	⚠	✗	
Other Neurological Agents	Deutetrabenazine (Austedo®)	●			⚠ Citalopram ⚠ Lexapro ⚠ Zofran
	Dextromethorphan / Quinidine (Nuedexta®)	●			✗ Citalopram ✗ Lexapro ✗ Zofran
	Flibanserin (Addyi®)	●			
	Tetrabenazine (Xenazine®)		●		✗ Citalopram ✗ Lexapro ⚠ Zofran
	Valbenazine (Ingrezza®)	●			
Phosphodiesterase Inhibitors for Erectile Dysfunction	Avanafil (Stendra®)	●			
	Sildenafil (Viagra®)	●			
	Tadalafil (Cialis®)	●			
	Vardenafil (Levitra®)	●			⚠ Citalopram ⚠ Lexapro ⚠ Zofran
Proton Pump Inhibitors	Dexlansoprazole (Dexilant®, Kapidex®)		●		
	Esomeprazole (Nexium®)		●		✗ Citalopram ⚠ Lexapro
	Lansoprazole (Prevacid®)		●		
	Omeprazole (Prilosec®)		●		✗ Citalopram ⚠ Lexapro
	Pantoprazole (Protonix®)		●		
	Rabeprazole (Aciphex®)	●			
Statins	Atorvastatin (Lipitor®)	●			
	Fluvastatin (Lescol®)		●		
	Lovastatin (Mevacor®, Altoprev®, Advicor®)	●			
	Pitavastatin (Livalo®)	●			
	Pravastatin (Pravachol®)	●			
	Rosuvastatin (Crestor®)	●			
	Simvastatin (Zocor®)	●			

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### **Zofran & Alfuzosin**

**MODERATE**

The risk for QT prolongation due to ondansetron is dose and route related. Intravenous (IV) doses lead to higher peak concentrations and systemic exposure and so have a greater risk for QT prolongation compared with the same dose given orally. Faster rates of IV infusion are also associated with a greater risk for QT prolongation. If concomitant therapy is needed, correct electrolyte abnormalities prior to starting therapy. Monitor closely, particularly in patients with predisposing risk factors for QT prolongation (e.g. cardiac disease, female, elderly). Electrocardiogram (ECG) monitoring should be performed in patients receiving concurrent therapy. The Canadian manufacturer of Zofran injection has specific recommendations for use of IV ondansetron in oncology patients greater than or equal to 75 years of age :- all IV doses must be diluted in 50 - 100 mL of compatible fluid and infused over at least 15 minutes- initial and repeat IV doses must not exceed 8 mg. Instruct patients to report any irregular heartbeat, dizziness, or fainting.

### **Zofran & Asenapine**

**MODERATE**

The US manufacturer of asenapine states that the concurrent administration of other drugs that are known to prolong the QTc interval should be avoided. If concurrent therapy is warranted, consider obtaining serum calcium, magnesium, and potassium levels and monitoring ECG at baseline and at regular intervals. Correct any electrolyte abnormalities. Instruct patients to report any irregular heartbeat, dizziness, or fainting.

### **Zofran & Atomoxetine**

**MODERATE**

The risk for QT prolongation due to ondansetron is dose and route related. Intravenous (IV) doses lead to higher peak concentrations and systemic exposure and so have a greater risk for QT prolongation compared with the same dose given orally. Faster rates of IV infusion are also associated with a greater risk for QT prolongation. If concomitant therapy is needed, correct electrolyte abnormalities prior to starting therapy. Monitor closely, particularly in patients with predisposing risk factors for QT prolongation (e.g. cardiac disease, female, elderly). Electrocardiogram (ECG) monitoring should be performed in patients receiving concurrent therapy. The Canadian manufacturer of Zofran injection has specific recommendations for use of IV ondansetron in oncology patients greater than or equal to 75 years of age :- all IV doses must be diluted in 50 - 100 mL of compatible fluid and infused over at least 15 minutes- initial and repeat IV doses must not exceed 8 mg. Instruct patients to report any irregular heartbeat, dizziness, or fainting.

### **Zofran & Chlorpromazine**

**SERIOUS**

The risk for QT prolongation due to ondansetron is dose and route related. Intravenous (IV) doses lead to higher peak concentrations and systemic exposure and so have a greater risk for QT prolongation compared with the same dose given orally. Faster rates of IV infusion are also associated with a greater risk for QT prolongation. If concomitant therapy is needed, correct electrolyte abnormalities prior to starting therapy. Monitor closely, particularly in patients with predisposing risk factors for QT prolongation (e.g. cardiac disease, female, elderly). Electrocardiogram (ECG) monitoring should be performed in patients receiving concurrent therapy. The Canadian manufacturer of Zofran injection has specific recommendations for use of IV ondansetron in oncology patients greater than or equal to 75 years of age :- all IV doses must be diluted in 50 - 100 mL of compatible fluid and infused over at least 15 minutes- initial and repeat IV doses must not exceed 8 mg. Instruct patients to report any irregular heartbeat, dizziness, or fainting.

### **Zofran & Citalopram**

**SERIOUS**

The risk for QT prolongation due to ondansetron is dose and route related. Intravenous (IV) doses lead to higher peak concentrations and systemic exposure and so have a greater risk for QT prolongation compared with the same dose given orally. Faster rates of IV infusion are also associated with a greater risk for QT prolongation. If concomitant therapy is needed, correct electrolyte abnormalities prior to starting therapy. Monitor closely, particularly in patients with predisposing risk factors for QT prolongation (e.g. cardiac disease, female, elderly). Electrocardiogram (ECG) monitoring should be performed in patients receiving concurrent therapy. The Canadian manufacturer of Zofran injection has specific recommendations for use of IV ondansetron in oncology patients greater than or equal to 75 years of age :- all IV doses must be diluted in 50 - 100 mL of compatible fluid and infused over at least 15 minutes- initial and repeat IV doses must not exceed 8 mg. Instruct patients to report any irregular heartbeat, dizziness, or fainting.

### **Zofran & Clomipramine**

**MODERATE**

The risk for QT prolongation due to ondansetron is dose and route related. Intravenous (IV) doses lead to higher peak concentrations and systemic exposure and so have a greater risk for QT prolongation compared with the same dose given orally. Faster rates of IV infusion are also associated with a greater risk for QT prolongation. If concomitant therapy is needed, correct electrolyte abnormalities prior to starting therapy. Monitor closely, particularly in patients with predisposing risk factors for QT prolongation (e.g. cardiac disease, female, elderly). Electrocardiogram (ECG) monitoring should be performed in patients receiving concurrent therapy. The Canadian manufacturer of Zofran injection has specific recommendations for use of IV ondansetron in oncology patients greater than or equal to 75 years of age :- all IV doses must be diluted in 50 - 100 mL of compatible fluid and infused over at least 15 minutes- initial and repeat IV doses must not exceed 8 mg. Instruct patients to report any irregular heartbeat, dizziness, or fainting.