Clinically Significant Drug-Drug Interactions With OTC and Herbal Products

AMERICAN COLLEGE of CARDIOLOGY

PROBLEM

Patients are increasingly using over-the-counter (OTC) supplements and herbal products for both preventative and therapeutic purposes.

Many OTC products can have serious consequences to the cardiovascular (CV) system via drug-drug interactions.

SOLUTION

Avoid combining potentially interacting OTC supplements or herbal products with CV medications as outlined in Table 1.

TABLE 1: Products That Interact with CV Medications[1-6]

CV Medication	Supplement or Herbal Product	Interaction	Monitoring Parameter/ Recommendation
Angiotensin-Converting Enzyme Inhibitors (ACEIs)	Night-blooming cereus	Increases effects of ACEIs, leading to hypotension	Blood pressure
	Green tea, Yohimbine	Decreases effectiveness of ACEIs, leading to hypertension	Blood pressure
Alpha-Blockers	Butcher's Broom, Yohimbine	Decreases effects of alpha-blockers, leading to hypertension	Blood pressure
Antiplatelets	Danshen, Garlic, Ginkgo biloba, Saw palmetto	Increases bleeding risk	Electrocardiogram; avoid if possible
	St. John's wort	Increases activity of clopidogrel, leading to increased bleed risk	Signs and symptoms of bleeding
Beta-Blockers	Fumitory, Lily of the valley, Night-blooming cereus	Increases effects of beta-blockers, leading to hypotension and bradycardia	Blood pressure and heart rate
	Green tea, Ma-huang (ephedra), Yohimbine	Decreases effects of beta-blockers, leading to hypertension and tachycardia	Blood pressure and heart rate
Calcium Channel Blockers (CCBs)	Fumitory, Grapefruit juice, Hawthorn, Khella, Lily of the valley, Night-blooming cereus	Increases effects of CCBs, leading to vasodilation, hypotension, and bradycardia	Blood pressure and heart rate
	St. John's wort	Decreases the effects of CCBs, leading to hypertension and tachycardia	Blood pressure and heart rate
Digoxin	Aloe vera, Licorice	Causes hypokalemia, increasing risk of digoxin toxicity	Digoxin serum concentration, serum potassium, electrocardiogram
	Danshen, Fumitory, Hawthorn, Lily of the valley, Night-blooming cereus, Strophanthus	Potentiates action of digoxin, increasing risk for toxicity	Digoxin serum concentration, electrocardiogram
	St. John's wort	Decreases digoxin concentration	Digoxin serum concentration, electrocardiogram
	Chan Su, Danshen, Ginseng, Uzara root	Interacts with digoxin assay	Digoxin serum concentration
Nitrates	Hawthorn	Potentiates action of nitrates, leading to vasodilation and hypotension	Blood pressure
Monoamine Oxidase Inhibitors	Capsicum, Ma-huang (ephedra), St. John's wort	Increases blood pressure	Blood pressure
Spironolactone	Licorice	Increases effects of spironolactone	Liver fu Serum potassium nction test; avoid use if possible
Warfarin	Alfalfa, Bilberry, Danshen, Dong quai, Fenugreek, Garlic, Ginger, Ginkgo biloba, Grapefruit juice, Khella, Saw palmetto	Increases bleeding risk	International normalized ratio, signs and symptoms of bleeding
	Ginseng, Green tea, Soy milk, St. John's wort	Decreases effects of warfarin	International normalized ratio due to need for potential dose increase
Amiodarone	Echinacea, St. John's wort	Increases QT interval	Electrocardiogram **Avoid use in patients with a prolonged QTc and/or congenital QT syndrome**
	Grapefruit juice, St. John's wort	Decreases effects of amiodarone, leading to potential arrhythmias	Electrocardiogram **Avoid if possible**
Class I Antiarrhythmic Drugs	Echinacea, Ma-huang (ephedra), St. John's wort	Increases QT interval	Electrocardiogram **Avoid use in patients with a prolonged QTc and/or congenital QT syndrome**
	Lily of the valley	Increases effects of quinidine	**Avoid**
	St. John's wort	Decreases effectiveness, leading to arrhythmias	Electrocardiogram **Avoid use if possible**
Statins	Grapefruit juice	Increases effects of statins and risk of myalgias	Symptoms of myalgias
	Echinacea	Increases risk of hepatotoxic effects	Liver function test **Avoid use if possible**

PREVENT POTENTIAL ERRORS

Educate patients and providers about the potential adverse effects of OTC products and drug-drug interactions with CV medications.

Closely monitor patients with CV disease for harmful effects or toxicities from OTC products.

Perform accurate patient medication histories to ensure all OTC products are known; encourage patients to report all OTC and herbal products.

Create OTC/herbal products drug-drug interactions alert database in the electronic medical record.

To download the infographic and see citations visit
ACC.org/Infographics