

CORRECTIONS

Liperoti R, Vetrano DL, Bernabei R, Onder G

Herbal Medications in Cardiovascular Medicine

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On page 1195, the 15th line of the second paragraph reads: Cranberries, which are used to prevent urinary tract infections in women, and Asian ginseng might inhibit the activity of CYP2C9, the primary isoenzyme involved in the metabolism of warfarin, causing elevation of the international normalized ratio and increased risk of bleeding (18,122). In contrast, St. John's wort, which has been shown in clinical studies to be effective in the treatment of depression, can induce CYP3A4 and CYP2C9 activity, reducing the efficacy of medications metabolized by these enzymes.

It should have read: Cranberries, which are used to prevent urinary tract infections in women, might inhibit the activity of CYP2C9, the primary isoenzyme involved in the metabolism of warfarin, causing elevation of the international normalized ratio and increased risk of bleeding (18,122). In contrast, St. John's wort, which has been shown in clinical studies to be effective in the treatment of depression and Asian Ginseng can induce CYP activity, reducing the efficacy of medications metabolized by these enzymes, including warfarin.

Also, the first line of Table 2 was incorrect. The first column read:

Herbal Medication (Ref. #)	Interacting Cardiovascular Medication(s)	Mechanism of Action	Potential Side Effect
Asian ginseng (18)	Warfarin	Inhibition of CYP2C9	↑ Risk of bleeding

It should have read:

Herbal Medication (Ref. #)	Interacting Cardiovascular Medication(s)	Mechanism of Action	Potential Side Effect
Asian ginseng (14,123)	Warfarin	Induction of CYP2C9	↓ Effect

The full corrected table is below.

TABLE 2 Most Relevant Interactions Between Herbal Medications (Used Both for the Treatment of Cardiovascular Diseases and for Other Conditions) and Cardiovascular Medications			
Herbal Medication (Ref. #)	Interacting Cardiovascular Medication(s)	Mechanism of Action	Potential Side Effect
Asian ginseng (14,123)	Warfarin	Induction of CYP2C9	↓ Effect
Cranberry (18,122)	Warfarin	Inhibition of CYP2C9	↑ Risk of bleeding
European elder (125)	Diuretics	Additive diuretic effect	↑ Diuresis
Garlic (55,124)	Aspirin and anticoagulant agents	Reduction of platelet function	↑ Risk of bleeding
Ginkgo (63,64,124)	Aspirin and anticoagulant agents	Reduction of platelet function	↑ Risk of bleeding
Goldenseal (121)	Medications metabolized by CYP2D6 and CYP3A4	Inhibition of CYP2D6 and CYP3A4	↑ Effect
Green tea (76,77)	Warfarin	Contains vitamin K	↓ Effect
Hawthorn (102)	Digoxin	Increased blood concentration of digoxin	Arrhythmias
Licorice root (126)	Loop and thiazide diuretic agents	Mineralocorticoid-like effect	Hypokalemia
Salvia miltiorrhiza (120)	Warfarin	Reduction in binding to albumin	↑ Risk of bleeding
St. John's wort (123)	Medications metabolized by CYP3A4 and CYP2C9	Induction of CYP3A4 and CYP2C9	↓ Effect
CYP = cytochrome.			

The authors apologize for this error.

The online version of the article has been corrected to reflect these changes.

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