

Oatmeal: Good for Your Heart, or Maybe Not?

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We recently received an e-mail from a pharmacist asking about the interaction between oatmeal and digoxin. A hospital nurse was concerned that oatmeal given at breakfast would reduce the plasma levels of digoxin. The nurse claimed that product information provided to patients when they filled prescriptions at community pharmacies warned of the interaction between digoxin and oatmeal or other high-fiber foods.

Many patients taking digoxin also may have elevated levels of cholesterol, so they may be trying to eat more fiber to help lower their cholesterol. Thus,

advice to avoid foods high in fiber may be confusing to some patients. The pharmacist wanted to know if we thought this interaction was likely to be clinically important.

This type of question always requires a review of the data regarding the interaction to establish the clinical relevance of the potential interaction. The label for the Lanoxin brand of digoxin states that when taken with meals high in bran fiber, the amount of digoxin absorbed from an oral dose may be reduced.¹ No information is provided about how much fiber is necessary to cause a reduction in absorption, nor what foods might present a risk. Checking the Internet for information on this potential interaction will yield numerous results warning of the interaction between digoxin and fiber.

A search of the medical literature revealed several studies of the effect of

fiber on digoxin absorption (Table). In each of the studies, digoxin was administered with and without meals containing supplemental fiber. A single study demonstrated a statistically significant effect (6%-7% reduction in digoxin area under the concentration time curve and mean concentration), but the authors noted that this magnitude of change was probably clinically unimportant. We would agree.

It appears that the largest reported change in plasma digoxin caused by the addition of dietary fiber, at doses of 10 to 22 g daily, is <15%. This does not constitute a clinically significant interaction. As noted above, patients are warned about "large amounts" of fiber producing this interaction. Because oatmeal contains 4 g of fiber per cup, it would appear safe to consume 3 to 5 cups of oatmeal with each dose of digoxin before any measurable effect on the therapeutic action of digoxin might be expected. The consumption of 3 to 5 cups of oatmeal daily may produce other, unpredictable effects.

Based on the data available, it would appear that eating oatmeal concomitantly with digoxin would have a minimal affect on digoxin concentrations. Thus, the warnings found in patient drug information appear to be overly cautious. Although some amount of oatmeal or fiber could produce a clinically significant reduction in digoxin concentration, a typical breakfast does not present a risk to patients. It is unclear how this interaction came to be so well accepted based on the data available. If one is still concerned despite the evidence, separating the ingestion of fiber from the digoxin dose would eliminate any potential for interaction. It would seem that oatmeal is okay to eat, after all. ■

Table

Summary of Studies on the Effect of Fiber on Digoxin Plasma Concentrations

Author	Digoxin Formulation	Dose Fiber	Change
Johnson	Capsule	11 g daily x 10 days	6% decrease in steady-state AUC
Woods	Tablet	11 g twice a day x 10 days	No change in steady-state digoxin concentration
Kasper	Tablet	10-g single dose	No change in 0-6 hr digoxin concentrations
Nordstrom	Tablet	7.5 g twice a day x 4 wk	10% decrease plasma concentration at 2 wks, 7% decrease at 4 wks
Reissell	Tablet	10-g single dose	15% decrease urinary excretion of digoxin with simultaneous administration; no effect with 30-min separation of digoxin and fiber

AUC = area under the concentration time curve. Adapted from references 2-6.