

# ADVANCES IN GERD

Current Developments in the Management of Acid-Related GI Disorders

Section Editor: Joel E. Richter, MD

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## Pill-Induced Esophagitis

J. Walter Kikendall, MD  
Division of Gastroenterology  
National Naval Medical Center  
Bethesda, MD

**G&H** Is there a particular group of patients who are at high risk for pill-induced esophagitis?

**JWK** Most patients who develop pill-induced esophagitis are receiving antibiotics for any number of common conditions, including urinary tract infections and strep throat. I believe that elderly patients are more likely, given the same medications, to develop pill-induced esophagitis than younger patients. Patients with cardiomegaly with left atrial enlargement seem predisposed to the condition because the left atrium can compress the esophagus. Those who have esophageal motility disorders of any sort seem to be predisposed, although this is not entirely clear in the case reports in the literature.

The quantity of pills taken has not been correlated with esophagitis. The likelihood of injury has more to do with the specific pills that are taken and the posture in which the patient habitually takes them, as well as whether or not they take a significant amount of water with them. The contents of certain pills are simply more caustic. A lot of the antibiotics are inherently injurious if they remain in contact with the mucosa. On the other hand, therapies with heavy pill burden, such as mesalamine formulations for inflammatory bowel disease, do not necessarily relate to pill-induced esophagitis because they do not have the same caustic properties.

Patients should be reminded that any pill, particularly the more caustic pills that have been frequently reported to cause this type of injury, should be taken upright, with a full glass of water, and not immediately prior to going to bed. This is in contrast to the way pills are often given to sick people, where the patient is in bed, props up on one elbow, takes the pill, and then goes right back to sleep.

This scenario is designed to cause problems, and patients who are already ill do not need any extra problems.

**G&H** Can you describe the typical symptoms and presentation of a patient with pill-induced esophagitis?

**JWK** The typical patient takes a pill, perhaps without a lot of water, just as they are going to bed. Two hours later, they develop a rapidly increasing severity of chest pain. This pain may be continuous and is often exacerbated by swallowing. It lasts a few days and gets better gradually. In more severe cases, patients may not be able to eat for a period of time. They may require parenteral fluid support or alimentation. Some cases are complicated by stenosis, hemorrhage, or even perforation. However, this scenario is fairly uncommon.

**G&H** Can patients with pill-induced esophagitis take other oral medications in order to relieve their symptoms?

**JWK** If patients can still swallow without too much pain, there is no reason why they cannot take oral medication, although they must be advised to swallow with a full glass of water and to remain in an upright position. How well nonsteroidal anti-inflammatory drugs (NSAIDs) or even narcotics actually relieve pill esophagitis-induced pain has never been defined. Topical pain relievers, such as viscous xylocaine administered in moderation, may bring some relief and have been used with success in some reported cases. Patients have also been treated with anti-secretory agents, antacids, Gaviscon, and sucralfate to reduce exposure of the injured mucosa to refluxed acids.

**G&H** What are the specific medications most likely to cause pill-induced esophagitis?

**JWK** Antibiotics account for about half of the reported cases. The list of specific antibiotics is very long and is headed by doxycycline. Doxycycline is formulated as a relatively large capsule, which may partially account for its tendency to cause injury. Fortunately, antibiotics rarely cause any complicated injury.

Conversely, NSAIDs have been reported to cause far fewer injuries, but more of those cases have complications. With antibiotics, a recent tally of reported cases was over 500, but only 7 of these cases were complicated by hemorrhage. In comparison, there have been fewer than 200 total reported cases of NSAID-induced injury, but 22 of those were complicated by hemorrhage.

Many other medications have been reported to cause injury, but the foremost in terms of severity are the bisphosphonates, particularly alendronate (Fosamax, Merck). This pill has caused more strictures than any other oral medication. A recent tally showed 127 cases of pill-induced esophagitis reported in association with this drug, and 26 of those cases were complicated by strictures. If a patient develops an alendronate-related injury, there is an approximate 20% chance of developing a stricture, as reported in the literature. Interestingly, there have not been nearly as many reports of alendronate-induced esophagitis in the last 5 or 6 years as there were during the second half of the 1990s. Reporting bias could explain some of the decline in reported cases, but it is still widely prescribed. There are several other factors that may be playing a role in its reduced frequency of injury. First, I think physicians are aware of the potential causticity of the agent, have emphasized the importance of taking it in the proper fashion, and are avoiding its use in patients with underlying esophageal problems. Further, the manufacturer may have reformulated or redesigned the tablet so that it is less likely to stick in the esophagus.

Some of the other drugs that caused the most severe injuries in the past seem to be of less concern currently as well. Literature from the 1970s and 1980s reported many strictures associated with potassium chloride tablets and with quinidine, but these agents are no longer so frequently administered.

### **G&H** Do patients with pill-induced esophagitis ever develop chronic or recurring symptoms?

**JWK** It is very unusual for patients to develop chronic symptoms unless they have strictures. Recurrence is also rare. The patients at risk for recurrence are those who cannot take pills with adequate water, cannot swallow a lot of water, cannot sit up to take the pills, or who have structural abnormalities in the esophagus or compressions of

the esophagus. Those patients are at high risk and require inventive approaches to avoiding recurrence. Crushing pills would spread them over a large area but would not necessarily avoid the problem of prolonged contact with the mucosa. Alternative, less caustic medications may be an option. Intravenous, sublingual, intrarectal, or subcutaneous formulations may be required to remedy the problem in some patients.

### **G&H** What are the future concerns with regard to treating this patient population?

**JWK** I think that trends are positive. I currently see this problem less than in the past, and I believe this is due to a number of factors. Physicians have learned to recognize pill-induced esophagitis, so they do not send patients forward to gastroenterologists as much as they once did. Further, injuries are not occurring as frequently because some of the most strongly-associated drugs have either been removed from the market or are used less often. Manufacturers have probably paid some attention to this problem and designed pills that are less likely to cause these complications. Finally, I think patients have been better educated to take their pills properly. For all of these reasons, pill-induced esophagitis is steadily decreasing in incidence.

*The views expressed in this article/lecture are those of the author and do not necessarily reflect the official policy or position of the Department of the Navy, Department of Defense, nor the US Government.*

### **Suggested Reading**

- Kikendall JW. Pill esophagitis. *J Clin Gastroenterol.* 1999;28:298-305.
- Abid S, Mumatz K, Jafri W, et al. Pill-induced esophageal injury: endoscopic features and clinical outcomes. *Endoscopy.* 2005;37:740-744.
- Kadayifci A, Gulsen MT, Koruk M, Savas MC. Doxycycline-induced pill esophagitis. *Dis Esophagus.* 2004;17:168-171.
- Jasperson D. Drug-induced oesophageal disorders: pathogenesis, incidence, prevention and management. *Drug Saf.* 2000;22:237-249.
- Abraham SC, Cruz-Correa M, Lee LA, et al. Alendronate-associated esophageal injury: pathologic and endoscopic features. *Mod Pathol.* 1999;12:1152-1157.