



## ***Hospital Pharmacy Journal Club***

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### ***Hospital Pharmacy volume 50, number 4, April 2015***

#### ***Glacial Acetic Acid Adverse Events: Case Reports and Review of the Literature***

William Doles, PharmD; Garrett Wilkerson, PharmD; Samantha Morrison, BS, CPhT;  
and Rodney G. Richmond, MS, CGP, FASCP

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#### **Suggested Journal Club Members:**

Pharmacy Directors, Purchasing Personnel, Medication Safety Coordinators,  
Pharmacy Practice Residents, Pharmacy Students

#### **Summary:**

This article describes significant medication errors and subsequent adverse events associated with the use of acetic acid irrigation in 2 patients. In addition, a comprehensive review of similar published reports is summarized. Safe practices involving the use and preparation of this product are explored. This journal club offers an excellent discussion for developing strategic planning regarding risk management in the medication process, specifically in relation to purchasing, compounding protocols, medication use and labeling, and disposal. Evaluating the current institutional policies regarding acetic acid preparation and use may be the first step in building both electronic and process safeguards to prevent similar errors.

### **GENERAL**

1. What is glacial acetic acid? How is glacial acetic acid available commercially?
2. What are the current therapeutic uses for glacial acetic acid (in your institution)? From a risk-benefit perspective, is the use of glacial acetic acid as a hazardous non-drug chemical justified?

### **PURCHASING**

3. In cases where acetic acid 0.25% was prescribed, the commercially available 0.25% strength should have been used instead of glacial acetic acid. Since glacial acetic acid is classified as a chemical and not a drug, what procurement policies and procedures could be developed to restrict ordering from chemical suppliers or using a chemical to make a drug be subject to additional verification?

### **STORAGE**

4. Since there is not an emergent use for which another agent could be substituted, is it reasonable to have a policy prohibiting glacial acetic acid in regular inventory?

### **COMPOUNDING**

5. Are there alternatives to glacial acetic acid that could be used? Are there other implications (purity, contamination) that should be considered with these alternatives (e.g. food grade vinegar)?

### **RISK MANAGEMENT**

6. What information systems “red flag” checks exist in pharmacy software for acetic acid?
7. There are recognized protocols for the use and disposal of agents such as warfarin and chemotherapy drugs. Acetic acid is considered a hazardous product, what should an institution-based protocol entail in terms of the handling, use, and disposal of this agent?
8. Should all non-drug hazardous chemical grade products be designated as “high alert” products within the organization?
9. What quality improvement process could you conceive that would serve to prevent a series of failures in the medication use process resulting in medication errors and patient injury with glacial acetic acid?

### **EDUCATION**

10. What would be the apparent reasons for the pharmacists’ lack knowledge in proper handling, compounding, and dispensing of glacial acetic acid? Does current pharmacy school curriculum provide adequate training on the compounding of hazardous chemicals for medicinal purposes?

11. Based on the identified indications for use, from an interdisciplinary perspective, how could educational efforts be directed to ensure staff competency and education?

### **REGULATION**

12. In spite of several reported cases of accidents involving glacial acetic acid, is there sufficient evidence to justify formal regulation of glacial acetic acid or other non-USP products or chemicals related to their medicinal use? Should glacial acetic acid be brought under FDA oversight? What regulatory mechanism would you propose to accomplish this?

13. Products and substances not regulated by the FDA are generally recognized as safe until they are proven unsafe. Should the FDA be informed of such events?

**Answers** will be posted at [www.thomasland.com/HPJ\\_journalclub.html](http://www.thomasland.com/HPJ_journalclub.html) after 6 months. Prior to this time, answers are available to only Preceptors, Faculty, and Residency Directors by addressing such requests to: [jgeneral@thomasland.com](mailto:jgeneral@thomasland.com)