



PATIENT CARE ASSESSMENT DIVISION

ADVISORY MAY 2008

GLACIAL ACETIC ACID – SAFETY CONCERNS

The Massachusetts Board of Registration in Medicine (BORIM) Patient Care Assessment Division (PCA) has received two reports, one in 2006 and one in January 2008, of burns from 100% glacial acetic acid, which was mistakenly used in place of 5% acetic acid. The 5% solution may be used by Gynecologists during a LEEP cone biopsy. In each case reported to PCA, the OR stock of 5% acetic acid had been depleted, and additional solution was sought from the Pharmacy, in one case, and from a storage closet in another case. Glacial acetic acid is a dangerous poison, is corrosive, and both the liquid and the mist will cause severe tissue burns. It has a strong odor and often causes eye irritation. It should be stored in a glass bottle with clear bold labeling that includes concentration in % and mg/ml and distinguishes it as a topical poison, with skull and crossbones. It is required, per USP, that glacial acetic acid be compounded in the pharmacy department to the appropriate topical concentration prior to dispensing to patient areas. Pharmacy staff should be trained to follow a compounding record for dilution. The safest procedure is to have the pharmacy dispense by physician order specific for a patient. If your facility requires floor stock of diluted acetic acid, pharmacy staff should be reminded with a note or caution statement on the restock machine log and a label on the bulk bottle “must dilute prior to dispensing to floor/patient.”

In May 2005, the ISMP issued an alert about glacial acetic acid and recommended that facilities evaluate the need for stocking the 100% solution, that the label be neon-colored and prominently note that it’s a poison, and that an order be required for its use which includes the concentration of any dilutions made. One of the ISMP’s strongest recommendations to hospitals “has been to remove and discard unnecessary chemicals from the compounding area within the pharmacy, particularly those that have not been used within the last 6 months to a year. This is often the case with glacial acetic acid.”¹ In some cases, you may be able to use standard table vinegar (5% acetic acid). If bulk chemicals must remain in stock, store them in a locked, sequestered section of the pharmacy or dilute the product in the concentrations needed immediately upon delivery of the chemical. Thus, there would be no undiluted product in stock. A Pennsylvania Patient Safety Advisory contains additional helpful recommendations.²

In the cases reported to BORIM PCA, the patients suffered burns on contact with the solution and required transfer to a burn center. Staff should be aware of the need for immediate and thorough irrigation and additional care per protocols. The patient may need transfer to a tertiary care facility for additional burn treatment, or consultation with plastic surgery, urology, or ID.

Please evaluate the need to keep glacial acetic acid in inventory at your facility. If you require this concentration at your facility, please ensure that OR and Pharmacy staff are educated as to the difference in solution concentrations, that it is stored in a controlled area in the pharmacy, and that the pharmacy has in place appropriate safeguards (diluting, labeling and storage procedures) to protect patients from inadvertent use of the wrong concentration.

¹ End the Ice Age – Is Glacial Acetic Acid Really Necessary? ISMP Medication Safety Alert: 2005 Jun 30; 10 (13): 3. <http://www.ismp.org/Newsletters/acutecare/articles/20050505.asp>

² Glacial Acetic Acid: Doing More Harm Than Good? PSRS Patient Safety Advisory: 2006 Mar; Vol 3, No 1. http://www.psa.state.pa.us/psa/lib/psa/advisories/v3n1march2006/vol_3-1-march-06-article_e-glacial_acetic_acid.pdf