



The Internet Journal of Allied Health Sciences and Practice

<http://ijahsp.nova.edu>

A Peer Reviewed Publication of the College of Allied Health & Nursing at Nova Southeastern University

Dedicated to allied health professional practice and education

<http://ijahsp.nova.edu> Vol. 8 No. 2 ISSN 1540-580X

Ipecac: A Lesson in Clinical Guidelines

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CITATION: Pfister, RL. Ipecac: A Lesson in Clinical Guidelines. *The Internet Journal of Allied Health Sciences and Practice*. April 2010. Volume 8 Number 2.

ABSTRACT

Purpose: In 1965, the Food and Drug Administration (FDA) approved the use of ipecac for over-the-counter sale. For years, ipecac remained on the list of “must have” items for households with small children. Typically, ipecac was used to administer an emetic quickly before reaching the emergency room or to prevent the patient from having to be referred to a medical facility. In 2004, new ipecac guidelines were published stating that the routine stocking and use of Ipecac would no longer be recommended. The new guidelines would change what had been accepted for decades. Though Ipecac is no longer suggested for home use, the possibility may still exist that for particular populations, it may still be necessary. The decision is left to the individuals’ healthcare provider or poison control center, as the recommendation states that the experts would be able to make the best decision in determining a need to administer ipecac. The recommendation reinforces the need for healthcare providers to use current clinical guidelines and their own clinical judgment in providing advice to patients. The access to care problems we face will make it imperative that all healthcare providers keep up-to-date on public health issues. In this way, we can help our patients to become better health advocates.

INTRODUCTION

In 2007, approximately 2.4 million people (more than half under the age of five) swallowed or had contact with a poisonous substance. The American Association of Poison Control Centers’ (AAPCC) website identifies a poison exposure as any incident that occurs when a person swallows, breathes, touches, or has eye contact with something that can cause sickness or death. Using data gathered from the Toxic Exposure Surveillance System (TESS), it was noted that most of the poison exposures happen at home and involve children between eight months and six years of age.¹

In a poisoning episode, the outcome depends on the amount of “poison” absorbed by the body. A poisoning exposure is considered dose related, as in theory too much of anything can be dangerous. Since absorption determines outcome, the time from a poison exposure to delivery of an emetic and then the actual emesis is important. Unfortunately, determination of the absorption rate can depend on a number of factors such as the amount of poison consumed, foods that were previously ingested, or hyperperistalsis.² Garrison et al stated that a *timely* administered emetic would be 30 minutes or less from the poison exposure time, and a *timely* emesis would be 60 minutes or less post exposure.³

According to the Institute of Medicine (1990), “Clinical practice guidelines are systematically developed statements to assist practitioner and patient decisions about appropriate health care for specific clinical circumstances.”⁴ The term *assist* ensures that clinical judgment is never abandoned in these guidelines. All healthcare providers must to be able to use anticipatory guidance and current guidelines in advising patients. The challenges accessing health care today will require all healthcare providers to assist patients in becoming their own personal health advocates. The current viewpoint regarding ipecac for its use in suspected poisonings, including past and present recommendations, will be the focus of this article.

BACKGROUND

In 1965, the Food and Drug Administration (FDA) approved ipecac syrup for over-the-counter (OTC) sale.⁵ However, though ipecac was moved to OTC status, it was not until a clinical trial was published in 1969 that its general acceptance began. The trial compared ipecac to gastric lavage (pumping the stomach), noting that ipecac was a more effective overall method for removal of poisons. It was also noted that neither method removed more than small amounts of poisons or was consistent in removing poisons. Regardless, the trial set in motion the recommended use of ipecac by Poison Centers and pediatrician offices.⁶ Throughout the next two decades, ipecac syrup was placed in first aid kits and remained on the “must have list” of items for households with new babies or small children. This recommendation asked parents to keep a bottle of ipecac at home and in the diaper bag to cover any accidental poisoning incidents while away. If a mishap occurred, one was to call the local Poison Control Center to be advised when or if ipecac should be used.⁷ The original intent for ipecac was to use it only after safety practices to prevent injury had been compromised.

Traditionally, ipecac was used in two ways: 1) to begin the gastric emptying process before arrival at the emergency department, or 2) to prevent patients from requiring referral to a medical facility at all. The poison center staff would perform follow-up telephone calls in instances where ipecac was given at home to document the progress of patient or the outcome of the incident.⁷⁻⁸

Though various studies contribute information to the benefits and risks of ipecac as a quick emetic, many were quick to note the lack of research to support the 1965 recommendation. Some studies showed ipecac to be ineffective and often unpredictable for removal of stomach contents, while other studies touted it as effective.^{2,3, 6-13} Though the acknowledgement of ipecac's deficiencies were noted, it was maintained that ipecac was still the best home choice being used.^{2,3, 6-13} Corby et al. gave possible reasons why there was discrepancy among researchers. They suggested that studies on emetics contained many complicated variables, and there was an overall lack of controlled research. Any or all of these differences could bring about a variety of conclusions.² As studies were being examined, the consensus was that there was insufficient research available on ipecac use.

WHAT IS IPECAC?

Ipecac comes from the *Cephaelis Ipecacuanha* plant, and having no brand name, is known only by *ipecac syrup* (ipecac), its generic name. Ipecac is classified as an antidote or emetic. An emetic is a substance used to induce vomiting, working by irritating the lining of the stomach and stimulating the vomiting center of the brain. Ipecac is usually dispensed in one-ounce brown plastic bottles, and when recommended for use, the general dose for a child 1 to 12 years old is 15 ml. followed by 120-240 ml of water. The vomitus is to be saved to determine ipecac's effectiveness in removing the stomach contents.^{6,14-15} A bottle labeled as being *ipecac fluid extract* or *ipecac tinctures* should never be used, as these dosage forms are too potent for use. Only *ipecac syrup* can be considered an emetic for poison episodes.¹⁵

Labeled as an emetic, ipecac is used to cause vomiting, which it usually accomplishes; however, there can also be undesired effects. Vomiting can be dangerous if a caustic material is swallowed. The ipecac along with the caustic material is forced back into the esophagus causing further damage to esophageal tissues. Symptoms from ipecac use can include drowsiness, diarrhea, or stomachache. The expected effects from ipecac make it more complicated to determine whether the side effects are from the actual poison or the ipecac. Some of the more severe reactions can be shock, dehydration, or cardiac arrest.^{8,9,12-15} However, some studies noted a total absence of even minimal cardiac changes or the presence of any other severe side effects occurring when ipecac was given in therapeutic amounts.^{16,17} While the literature does document certain severe complications and even death, such complications have been linked to continued misuse, as in Bulimia Nervosa patients or other eating disorders, and Munchausen by Proxy Syndrome.^{12,16-18} The documented misuse by certain populations has used to advocate for the removal of ipecac from an over-the-counter drug status.^{6,9,12,14}

OTHER EMETICS

Besides ipecac, other agents have been used for the treatment of poisoning episodes. Two of the choices were activated charcoal and gastric lavage. The activated charcoal was used to absorb the potential poison thus preventing it from being absorbed by the body. A notice in 1998 announced that activated charcoal was the item to be kept in the home to replace ipecac.¹⁹ Many did not realize that ipecac had been replaced until their prenatal physician advised them. Currently, the American Poison Control Center (APCC) site lists activated charcoal for hospital/professional use only.²⁰

Studies have acknowledged that other methods have demonstrated better results than ipecac. However, the possibility of these methods being used for *immediate* treatment is not feasible without appropriate training.^{2,10} The use of gastric lavage (stomach

pumping) when compared to ipecac is generally considered more effective, but must also be done by trained personnel in an emergency setting.²⁰

Though ingestion of poisons for child under the age of six is a common event, the death from poisoning for this age is uncommon. In 1940, the number of deaths was noted at 500 and by 1997; the numbers had dropped to only 25 deaths²¹. One reason for the drop in deaths related to poisoning was the 1970's introduction of childproof caps and smaller dosage packaging of products, which are seen as main reasons for this reduction. Many newer products are formulated so that in some cases, everyday kitchen items may be used as antidotes. Products continuously change, and with the development of less toxic formulas, along with quick access to antidote/s and information from poison control sites, the reversal of a possible tragic event may only be a call away.²²

PRESENT STATUS

The National Capital Poison Centers website contains a chronological listing of historical information concerning ipecac. In 2003, the U.S. Food and Drug Administration (FDA) Nonprescription Drug Advisory Council held hearings to discuss the OTC status of ipecac. The panel advised the FDA to overturn the non-prescription drug status that ipecac has held since 1965. However, the drug status still has not been changed as of April 20, 2009.

In 2003, the American Academy of Pediatrics (AAP) issued a policy statement regarding consumer use of ipecac. It stated it would no longer recommend ipecac syrup for routine use to induce vomiting in accidental poisoning. The recommendation also noted that keeping ipecac in the home was unnecessary, and recommend disposal of any stocked ipecac syrup. The AAP went on to state that if there is a suspected poisoning; the first course of action is to always contact the poison control center for information.²²

In 2004, panel members from the American Association of Poison Control Centers, the American Academy of Clinical Toxicology, and the American College of Medical Toxicology issued the "Guideline on the Use of Ipecac Syrup in the Out-of-Hospital Management of Ingested Poisons." The panel concluded that ipecac is rarely useful in treating childhood poisoning. The guidelines also backed the American Academy of Pediatrics' (AAP) recommendation that ipecac syrup should no longer be *routinely* used to induce vomiting in an incidence of poisoning and to dispose of any stock on hand. The panel noted there was a small group that could benefit from stocking ipecac (see Figure 1), but recommended the individuals' healthcare providers and poison control centers assist in determining need.⁷ The AAPCC followed the panel's guidelines concerning ipecac use, and also agreed with its position that activated charcoal should not be recommended for use in home poison episodes either. The panel did not address the removal of ipecac from the OTC status. The AAPCC has noted that most pharmacies no longer stock ipecac syrup.²⁰

AMERICAN ASSOCIATION OF POISON CONTROL CENTERS (AAPCC)

In 1958, the AAPCC was founded to promote cooperation between all poison centers in different cities and to standardize their operations. A National Poison Prevention Week (NPPW) was established in 1961. The third week in March is now designated as NPPW week and is used to educate and promote poison prevention. As of 2001, anyone can dial 1-800-222-1222 and connect with the nearest poison control center anywhere in the United States. Experts on hand will answer all calls from the 64 poison control sites throughout the country. The staff will help with your questions or provide information in a suspected case of poisoning, 365 days a year, seven days a week, 24 hours a day, free of charge.²²

The American Academy of Pediatrics (AAP) 2003 published the following statement:

... if a child is unconscious, not breathing, or having convulsions or seizures due to poison contact or ingestion, call 911 or your local emergency number immediately. If your child has been exposed to poison, and has mild or no symptoms, call your poison control center at 1-800-222-1222. For swallowed poison, remove the item from the child, and have the child spit out any remaining substance. The website also states to not have the child vomit and not to use syrup of ipecac.

Figure 1. Possible group where ipecac may be of use.

The possible group where ipecac may be of use would include:

- no contraindication of use or possibility of severe toxicity
- no alternative therapy available to decrease absorption,
- if a delay of more than 1 hour before patient could arrive at an emergency facility
- ipecac could be administered within 30-90 minutes of ingestion.

The panel did not address removal of ipecac from OTC status

The panel did not support routine stocking of ipecac for households of young children.

The panel gave no consensus on which homes could benefit from stocking ipecac: an individual's practitioners and poison control centers should determine.

Manoguerra AS, Cobaugh DJ, et al., The Members of the Guidelines for the Management of Poisonings Consensus. Guideline on the use of ipecac syrup in the out-of-hospital management of ingested poisons. *Clinical Toxicology*. 2005; 43(1): 1-10.

CONCLUSIONS

The 2004 guidelines suggesting the suspension of ipecac use for home poison episodes does not mean that there is no support for home use of ipecac. Conclusions from many studies stated that although ipecac may not be the *best* option, until a better home emetic is found, it might still be the *best* choice available. Ipecac is an emetic that when kept in homes, is accessed quickly and can be utilized without training.

Healthcare professionals should always use anticipatory guidance when teaching prevention; it is the number one step in reducing poison episodes. It is also important to keep in mind the potential toxicity and abuse of ipecac for certain risk groups. Specific poison-related information for prevention and education can be found at the American Association of Poison Control Centers website.

Healthcare providers must understand the possibility exists that for particular populations, ipecac may need to be present in the home. The decision will only be resolved by using current clinical guidelines and clinical judgment to help patients become their own health advocates. A person's health maybe linked to many healthcare providers; the need to work together and stay informed of current clinical guidelines will help to build a healthier community.

FUTURE RESEARCH

A poisoning episode is a common childhood occurrence. When a child encounters a poisonous substance and the need for emesis is determined, the possibility still exists that the presence of ipecac may be of benefit when weighing the reliability of arriving for treatment at a hospital within thirty minutes. Studies have shown that without storing ipecac at home, ipecac could not be reliably administered in a timely manner. What role does ipecac play for populations in rural areas with limited access to emergency treatment, reliable communication, or travel problems? Perhaps the role of ipecac still needs consideration until a more reliable emetic can be kept in homes.

REFERENCES

1. Bronstein AC, Spyker DA, Cantilena JR, Louis R, Green JL, Rumack BH, Heard S. 2007 Annual report of the American Association of Poison Control Centers' National Poison Data System. *Clin Toxicol [serial online]*. 2008; 46(10): 927-1057. Available at: <http://dx.doi.org/10.1080/15563650802559632>. Accessed July 22, 2009.

2. Corby DC, Decker WJ, Moran MJ, Payne CE. Clinical comparison of pharmacologic emetics in children. *Pediatrics*. 1968 Aug; 42: 361-4.
3. Garrison J, Shepherd G, Huddleston WL, Watson WA. Evaluation of the time frame for home ipecac syrup use when not kept in the home. *J Toxicol Clin Toxicol*. 2003; 41(3): 217-21.
4. Field MJ, Lohr KN, editors. Institute of Medicine Committee to Advise the Public Health Service on Clinical Practice Guidelines. Clinical practice guidelines: Directions for a new program. Washington, DC: National Academy Press; 1990.
5. U.S. Food and Drug Administration (FDA). Regulatory history for ipecac syrup. 1965. Available at: http://www.fda.gov/ohrms/dockets/ac/03/briefing/3962B1_02_Regulatory%20History.htm. Accessed October 30, 2009.
6. Gossel TA, Wuest JR. Current guideline for home use of ipecac syrup in treatment of ingested poison. *IL Pharm* 2007; 69(5): 21-5.
7. Manoguerra AS, Cobaugh DJ, et al. Guideline on the Use of Ipecac Syrup in the Out-of-Hospital Management of Ingested Poisons. *Clin Toxicol*. 2005; 43(1):1-10.
8. Dershewitz, RA, Niederman LG. Ipecac at home-a health hazard? *Clin Toxicol [serial online]*. 1981; 18: 8. Available at: <http://www.informaworld.com/10.3109/15563658108990326>. Accessed September 2008.
9. Mofenson HC, Caraccio TR. Benefits/risks of syrup of ipecac. *Pediatrics*. 1986; 77: 551-2.
10. Tandberg D, Diven BG, McLeod JW. Ipecac-induced emesis versus gastric lavage: a controlled study in normal adults. *Am J Emerg Med*. 1986 May; 4(3): 205-9.
11. Czajka PA, Russell SL. Nonemetic effects of ipecac syrup. *Pediatrics*. 1985 Jun; 75(6): 1101-4.
12. Silber, T.J. Ipecac syrup abuse, morbidity, and mortality: Isn't it time to appeal its over-the-counter status? *J Adolesc Health*. 2005 Sep; 37(3): 256-60.
13. Garrettson LK. Ipecac home use: we need hope replaced with data. *J Toxicol Clin Toxicol*. 1991; 29(4): 515-9.
14. Ipecac-oral side effects, medical uses, and drug interactions. MedicineNet.com Web site. 1995. Available at: <http://www.medicinenet.com/ipecac-oral/article>. Accessed October 30, 2009.
15. Ipecac (oral) advanced consumer information. Drug information on line Drugs.com Website. 1994. Available at: <http://www.drugs.com/cons/ipecac.html>. Accessed October 30, 2009.
16. Meester WD, Eisenga BH, Fuller RE. Evaluation of stress electrocardiogram after ipecac-induced emesis. *Vet Hum Toxicol*. 1978;20:166.
17. Litovitz T. In defense of retaining ipecac syrup as an over-the-counter drug. *Pediatrics*. 1988;82:514-6.
18. Schiff RJ, Wurzel CL, Brunson SC, Kasloff I, Nussbaum MP, Frank SD. Death due to chronic syrup of ipecac use in a patient with bulimia. *Pediatrics*. 1986;78(3):412-6.
19. Illinois Poison Center recommends new treatment for poisoning. Poison prevention. 1998. Available at: <http://www.stitch.luc.edu/depts/injprev/Poisons/children.htm>. Accessed October 14, 2008.
20. What is Ipecac syrup? American Academy of Poison Control Centers (AAPCC) National Capital Poison Center Web site. Available at: <http://www.poison.org/prepared/ipecac.asp>. Accessed October 30, 2009.
21. Liebelt EL, DeAngelis CD. Evolving trends and treatment advances in pediatric poisoning. *JAMA*. 1999;282(12):1197-1198.
22. American Academy of Pediatrics (AAP). *Pediatrics*. 2003; 112(5):1182-85.
23. Poison prevention treatment tips. American Academy of Pediatrics (AAP) Web site. 2009. Available at: <http://www.aap.org/advocacy/releases/poisonpreventiontips.cfm>. Accessed October 30, 2009.