Clinical question.
In victims with oral poisoning does the administration of syrup of ipecac by lay public improve outcome?

Is this question addressing an intervention/therapy, prognosis or diagnosis? Intervention

State if this is a proposed new topic or revision of existing worksheet: Revision

Conflict of interest specific to this question
Do any of the authors listed above have conflict of interest disclosures relevant to this worksheet? No

Search strategy (including electronic databases searched).

Medline OVID
  Ipecac (any field), Years 2003-2009
  57 References

Cochrane Library
  Ipecac (any field), Years 2003-2009
  8 References

AHA EndNote Database:
  Ipecac (any field), no year restriction
  33 References

Embase search
  Ipecac (any field), 2005-2008
  101 References

Hand search of references cited in the Guideline on the Use of Ipecac Syrup in the Out-of-Hospital Management of Ingested Poisons (Guidelines for the Management of Poisonings Consensus Panel, American Association of Poison Control Centers), no year restriction.
  89 References

• State inclusion and exclusion criteria
  Excluded studies with n < 30
  Excluded review articles
  Excluded case studies
  Excluded animal studies
  Excluded abstracts

• Number of articles/sources meeting criteria for further review:
  14 articles met criteria for further review after all searches above were completed
Summary of evidence

**Evidence Supporting Clinical Question**

In victims with oral poisoning does the administration of syrup of ipecac by lay public improve outcome?

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<td>Fair</td>
<td>Litovitz, 1985E,</td>
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<td>Veltri, 1976 E</td>
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<td>Poor</td>
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<td>Mowry, 1981 E</td>
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**Level of evidence**

A = Return of spontaneous circulation  
B = Survival of event  
C = Survival to hospital discharge  
D = Intact neurological survival  
E = Other endpoint

*Italics = Animal studies*
### Evidence Neutral to Clinical question

In victims with oral poisoning does the administration of syrup of ipecac by lay public improve outcome?

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**Level of evidence**

- A = Return of spontaneous circulation
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*Italicics = Animal studies*

### Evidence Opposing Clinical Question

In victims with oral poisoning does the administration of syrup of ipecac by lay public improve outcome?

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**Level of evidence**

- A = Return of spontaneous circulation
- B = Survival of event
- C = Survival to hospital discharge
- D = Intact neurological survival
- E = Other endpoint

*Italicics = Animal studies*
From the 1960’s until the 1990’s, syrup of ipecac was endorsed by many health care professionals as a first-aid decontamination measure for ingested poisons. The two main reasons for lay persons to administer ipecac at home were 1. speed to emesis, and 2. reducing unnecessary hospital visits—both related to ipecac’s reported ability to decrease the amount of toxin in the stomach.

Studies since 1985, included in the C2005 and in this C2010 evidence evaluation worksheet, suggest that ipecac does not alter medical outcomes (Kulig, Bar-Or et al. 1985; Pond, Lewis-Driver et al. 1995; Caravati 2000), may cause harmful or side effects to patients (Kornberg and Dolgin 1991; Czajka and Russell 1985), and is often misused (Wrenn and Rodewald et al. 1993; Chafee-Bahammon, Lacouture et al. 1985). Use of ipecac by poison specialists (Chyka and Winbery 2006) and availability of ipecac in drugstores (Kelly and Sanchez 2007) has decreased in recent years. There are no published studies showing that patient outcomes are improved when the lay public administers ipecac for poisoning.

Three position statements have been published recommending that syrup of ipecac not be used routinely in the management of poisoned patients (AAP 2003; AACT EAPCCT 2004; Manoguerra and Cobaugh 2005). The most recent is a guideline from the American Association of Poison Control Centers (Manoguerra and Cobaugh 2005).

Given the level of evidence available, ipecac syrup should no longer be recommended for poisoned patients.

Acknowledgements:
None

Citation List


**Citation List with LOE**


Level of Evidence: 4 (Fair)
Opposing
In Brief: Cohort study that concluded ipecac use did not result in reduced health care utilization.


Level of Evidence: 4 (Fair)
Neutral

In brief:
This is a prospective, non-randomized study on acetaminophen hepatotoxicity in children under 6 years (n=1015). Study subjects were identified through calls to a regional poison center. Of the 223 patients who did not receive any form of GI contamination, none developed toxic APAP levels. Conclusion was made that potentially toxic levels by history not related to 4 hour level or whether or not the patient received any form of GI decontamination.


Level of Evidence: 4 (Fair)
Opposing

In brief:
This is a prospective, non-randomized study to determine the frequency of ipecac administration and complications when given without medical consultation (n=106) in children under 6 years. Study subjects were identified through calls to a regional poison center. Of the 106 patients given ipecac without consultation, 61% received it unnecessarily, of which 5% were contraindicated situations. Authors state that the rate of giving ipecac without medical consultation may be as high as 10%.


Level of Evidence: 4 (Fair)
Neutral

In brief:
This is a retrospective study using poison center call data one year before and after the implementation of a new guideline on gastric emptying. The purpose of the study was to determine the frequency of adherence to new guidelines on gastric emptying and the effect on medical outcomes. All forms of gastric emptying decreased 3-fold or greater, with ipecac recommended only 4 times compared to 257 times the previous year. Change in outcome was determined to be unchanged based on the proportions of patients managed outside of the health care facility.


Level of Evidence: 2 (Fair)
Opposing
In this prospective, non-randomized study with a control group, 146 callers who had induced vomiting upon recommendation by the poison center at home during a 12 week period were questioned at certain time intervals concerning patient symptoms. The comparison group of 99 callers who did not require ipecac were also followed for symptoms. The purpose of the study was to determine the frequency of nonemetic effects of syrup of ipecac. Diarrhea and atypical lethargy were higher in the group who received ipecac.


Level of Evidence: 3 (Fair)
Neutral

In brief:
In this randomized study, a survey of ipecac availability in pharmacies in a large urban area was performed during 2 time periods (2003 and 2005) separated by one year. There were 126 pharmacies in the first survey and 128 in the second. Fifty percent of pharmacies still had ipecac for sale in the second survey.


Level of Evidence: 2 (Fair)
Opposing

In Brief: Prospective, randomized, controlled. 70 children (mild-moderate ingestion) randomized to Ipecac/Charcoal or Charcoal only. No difference in clinical outcome (admission, deterioration, improvement) in those who received ipecac. However, ipecac group experienced increased time to administration of activated charcoal (2.6 h vs 0.9h), increased incidence of emesis of charcoal (56% vs. 16%), and increased length of stay (4.1h vs 3.4h).


Level of Evidence: 2 (Good)
Opposing

In Brief: Prospective, randomized, controlled. 592 patients randomized to Ipecac/Charcoal or Charcoal. Ipecac did not alter clinical outcome (admissions or clinical deterioration) in those patients who present awake and alert even if given <60 min. post-ingestion. Ipecac did delay administration of charcoal by a mean of 2.2 hours. Conclusion: no benefit conferred by ipecac.


Level of Evidence: 2 (Fair)
Supporting

In brief:
In this study, the administration of ipecac outside the health care facility was studied in children from 6 months to one year of age as compared to a prospective control group of older children. The study group of infants was given ipecac and was compared to 302 control subjects between 12 and 35 months of age also receiving ipecac. There were no significant differences in symptoms observed. Symptoms observed possibly due to ipecac including, diarrhea, drowsiness, irritable/hyperactive, coughing/choking/diaphoresis/flushing, and fever, were not considered serious. Ipecac stored at home had a faster time to emesis than when ipecac needed to be obtained elsewhere.


Level of Evidence: 5 (Good)
Opposing
In Brief: Position statement by the American Association of Poison Control Centers concluding that ipecac should not be administered routinely.


Level of Evidence: 4 (Poor)
Supporting

In Brief:
Fifty-five callers who administered ipecac were surveyed concerning availability, length of storage, recommendation compliance, and emetic response. Findings supported use of ipecac at home.


Level of Evidence: 2 (Good)

Opposing

In Brief: Prospective, randomized, controlled. 876 patients randomized to gastric emptying (ipecac/water or lavage) and charcoal or charcoal alone. No statistical difference in clinical outcome (improvement/deterioration/admission) between ipecac (n=220) and charcoal alone group (n=274).


Author's Summary:
Seven hundred and seventy-six cases were studied during a six-month period to see if induction of emesis could be successfully managed at home by telephone. Emesis was successful in 98.8% of cases. In 6.7% of all cases, symptoms were found at 4-hour follow-up that were referable to the ingestion, but all were considered to be of minor consequence. No complications of vomiting occurred. Twenty-four hour follow-up investigation indicated no significant complications of induction of emesis or complications from managing the patient by telephone. It is our conclusion that, with appropriate telephone supervision, home-induced emesis of ingestions expected to produce mild to moderate symptoms is as effective as emergency room or physician office management of cases. Furthermore, the absence of adverse affects of complications arising from the induction of emesis at home in our cases confirms that this form of management is quite safe.

Level of Evidence: 4 (Fair)
Supporting

In Brief: Calls to a poison center during a six month period, where ipecac was recommended, were included in this prospective study to examine the efficacy of home induction of emesis. Results were calculated using 776 cases. Ninety percent of patients vomited when given ipecac within 30 minutes. The symptoms found in 6.7% of all cases at 4-hour follow-up were linked to the ingestion and all were considered to be of minor consequence. 9.4% of all cases had vomiting beyond one hour.


Level of Evidence: 4 (Fair)

Opposing

In Brief: During a one year period, calls to a poison center where ipecac was used were identified and described. In the study group, ipecac was given in 797 cases upon the recommendation of the poison center or another health care provider. Cases were grouped according to appropriate or inappropriate use. Ipecac was given inappropriately in 156 patients, or 20% of cases. Ipecac was given to 52 patients with altered mental status, to 67 patients an hour or more after the ingestion, to 14 patients after they had already vomited spontaneously, to 3 patients where the drug ingested was known to cause bradycardia, and in 2 patients aspiration occurred. The poison center inappropriately recommended ipecac in 69 patients, and by another health care provider in 87 patients.