WORKSHEET for Evidence-Based Review of Science for Emergency Cardiac Care

Worksheet author(s)
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Date Submitted for review:
May 18, 2009

Clinical question.
In a patient who ingests a potentially poisonous substance (P), does the administration of activated charcoal (I), when compared to no administration (C), improve that patient’s outcome (O)?

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

Conflicts 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).
41 articles
AHA EndNote Database: charcoal (any field)
55 articles
Cochrane: charcoal (title, abstracts, keywords)
13 articles
Scopus:
Google Scholar: "charcoal" AND "first aid"
3,180 citations
Also reviewed the references of the above pertinent publications to obtain further articles

State inclusion and exclusion criteria
Included only articles in peer reviewed literature
Included all population age ranges
Excluded studies not addressing the use of activated charcoal in first aid by the lay public
Excluded review articles
Excluded abstracts

Number of articles/sources meeting criteria for further review:
3 studies met criteria for further review. Of these, 0 were LOE 1, 0 were LOE 2, 0 were LOE 3, 2 were LOE 4, 1 was LOE 5
### Summary of evidence

#### Evidence Supporting Clinical Question

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<td>Lamminpaa, 1993 (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

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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 Opposing Clinical Question

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### Level of evidence

- A = Return of spontaneous circulation
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- D = Intact neurological survival

*Italics = Animal studies*
### REVIEWER'S FINAL COMMENTS AND ASSESSMENT OF BENEFIT / RISK:

Based on the position statement by the American Academy of Clinical Toxicology and the European Association of Poisons Centers and Clinical Toxicologists, the administration of activated charcoal (AC) may be considered if a patient has ingested a potentially toxic amount of a poison (which is known to be adsorbed to charcoal). Single-dose Activated Charcoal should not be administered routinely in the management of poisoned patients. Based on volunteer studies, the effectiveness of Activated Charcoal decreases with time; the greatest benefit is within 1 hour of ingestion. There is no evidence that the administration of Activated Charcoal improves clinical outcome.

The published experience pertaining to AC in first aid is limited. Little evidence is currently available to suggest that AC is efficacious as a component of first aid for the general public. The current studies suggest that it may be safe to administer AC in first aid, but these studies are small and the evidence is not compelling (Spiller, 2003; Lamminpaa, 1993). There is a potential for harm if it is not administered in the appropriate circumstances. The potential for failure of AC administration in first aid needs to be considered (Scharman, 2001). Additional assessment of consumer acceptance of AC use, including the likelihood and permanent effects of AC laden emesis on interiors, is also required. However, adverse events following AC administration may occur and numerous poisons exist where administration of AC can actually cause harm.

After reviewing the evidence, it is premature to recommend the administration of Activated Charcoal in first aid. **(Class Indeterminate)**

### Acknowledgements:

None

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**Citation List**

