

## **Activated Charcoal/Carbon**

### Complications of Multiple Doses of Activated Charcoal

Treatment with multiple doses of activated charcoal increases the excretion of a number of drugs. Although this treatment is presumed to be useful in patients with drug poisoning, benefit has not been documented. In addition, serious complications, such as pulmonary aspiration and gastrointestinal obstruction, have been reported in patients treated with multiple doses of activated charcoal. Because of unproved efficacy and potential adverse effects, toxicology associations recommend that multiple-dose activated charcoal treatment be considered only in patients with potentially life-threatening exposures to specific drugs. Dorrington and associates conducted a retrospective cohort study to determine the frequency of serious complications for this treatment.

The authors reviewed the medical records of patients discharged from eight hospitals with a diagnosis of poisoning who had received multiple-dose activated charcoal therapy (two or more doses within a 12-hour period). Of the 6,258 patients whose medical records were reviewed, 878 received multiple doses of activated charcoal. At least minimal evidence of pulmonary aspiration was identified in 26 of these patients. Five of the 26 patients met all criteria for pulmonary aspiration. Four patients aspirated after the first dose of activated charcoal, and one aspirated after the second dose. None of the patients had evidence of gastrointestinal obstruction. None died as a result of pulmonary complications.

Hypernatremia was noted in 53 patients, and hypermagnesemia was noted in 27 patients. These electrolyte disturbances were not believed to have caused the symptoms of respiratory depression or the decreased levels of consciousness noted in several of the patients with these abnormalities. One patient was noted to have had a corneal abrasion that resolved without complication over time.

Complications associated with multiple-dose activated charcoal treatment were uncommon and rarely responsible for serious morbidity. The authors conclude that although there is numerous case reports of serious complications associated with multiple-dose activated charcoal therapy, the actual rate of clinically significant complications is quite low.