Four acute mushroom poisonings in two weeks

20 May 2012

On September 12, 2011, a Springfield, Virginia man arrived at MedStar Georgetown University Hospital (MGUH) in the early stages of liver failure. The man had mistakenly eaten poisonous mushrooms, handpicked from his yard. He would be the first of four patients in the course of two weeks to seek treatment at MGUH for mushroom (amanitin) poisoning. Their clinical course, management, and outcomes were presented today at Digestive Disease Week (DDW) in San Diego, the largest international gathering of physicians and researchers in the field of gastroenterology, hepatology, endoscopy and gastrointestinal surgery.

"When the Virginia man arrived at his local emergency department, a clinical diagnosis of mushroom poisoning was made," recalls Jacqueline Laurin, M.D., a transplant hepatologist at the Georgetown Transplant Institute, a part of MGUH and Georgetown University Medical Center.

"He had eaten the mushrooms, gotten very ill and his liver enzymes were very elevated with signs of severe liver dysfunction," Laurin recalls. The man was transferred to MGUH because in some cases, a liver transplant is necessary following amanitin poisoning.

Laurin's team called the local Poison Control Center who in turn, put them in contact with a California physician who is the principal investigator for a study using the IV preparation of milk thistle seeds (silibinin) in the United States for amanitin poisoning. Arrangements were made to have the drug flown and then couriered to the hospital where it arrived within hours. The patient received silibinin that evening.

Because silibinin is not yet approved by the U.S. Food and Drug Administration (FDA), physicians would only be able to offer it to one patient under the FDA's "emergency use" one-time exemption. Any future treatment with silibinin would require administration as part of a clinical study with approval of Georgetown University Medical Center's Institutional Review Board, a committee charged with the protection of humans in research studies.

"We knew it wasn't out of the realm of possibility that another person could show up with mushroom poisoning and without a study in place, we wouldn't have the option of offering the silibinin," Laurin explains.

At that time, mushrooms were cropping up in yards and parks in the Washington, DC area in greater numbers than usual because of increased rainfall for the season.

One week later, and before the protocol could be completed, a second patient with mushroom poisoning arrived at Georgetown.

The patient's status prompted an emergency meeting of the Institutional Review Board comprised of clinical and non-clinical members from the Medical Center and MGUH, who approved the protocol, thus allowing the second patient to be treated with the same IV preparation of milk thistle, silibinin, as the first patient received.

A few days later, two more patients arrived - friends who had mistaken the poisonous mushrooms as innocuous. They too received silibinin.

Laurin says the initial clinical presentation of amanitin poisoning mimics gastroenteritis in the form of nausea, vomiting, abdominal pain, and diarrhea followed by a period of apparent recovery then the development of acute hepatitis and jaundice.

"Early recognition of mushroom ingestion as a cause of acute hepatitis is paramount to initiate treatment and hopefully preventing progression to acute liver failure, liver transplant, or death," she

says.

There is no standard guideline for treating people with acute hepatitis from mushroom toxicity. "Without a standard treatment, aggressive hydration to remove the amanitin toxin is one of few ways to reduce damage to the liver," Laurin explains. "For our recent amanitin patients, all received intravenous silibinin. We also placed a nasobiliary drain in two of the patients in an attempt to disrupt the enterohepatic pathway of amanitin and remove amanitin toxins from the body."

"Because our hospital is affiliated with Georgetown University Medical Center, our treatment options include agents in clinical studies," explained Maiyen Tran Hawkins, D.O., a gastroenterology fellow in the transplant hepatology inpatient service and lead author of the DDW abstract. "That access and our team approach allowed us to quickly and successfully deliver a multi-modality treatment with IV silibinin and ERCP for nasobiliary drainage placement. We were able to prevent liver failure and all patients fully recovered without significant consequence."

Hawkins presented the clinical course, management, and outcomes of the four cases during a poster session at DDW.

"While these results appear promising, we need to know much more about silibinin, such as the timing for delivering it, what dose is most effective and whether or not a nasobiliary drainage is even necessary in combination with silibinin," explains Laurin. "I think we can point to this case series as a treatment success, but clearly more work and education needs to be done to reduce morbidity and death from amanitin poisoning."

More information: Use of intravenous silibinin and nasobiliary drainage as treatment for mushroom toxicity , Abstract #1301636

Provided by Georgetown University Medical Center