Case Report: Poisoning of Amanita Phalloides

Introduction

A family of five enjoyed a meal made of Amanita phalloides. The mushrooms were mistaken for other edible species (Macrolepiota procera). Amanita phalloides contains 15–20 cyclopeptides, including the amatoxins, phallostoxins and virotoxins. The amatoxins appear to be the most toxic of the cyclopeptides, leading to hepatic, renal, and central nervous system damage. The amatoxins are taken up by hepatocytes and interfere with messenger RNA synthesis, suppressing protein synthesis and resulting in severe acute hepatitis and possible liver failure.

Unfortunately, early differentiation of cyclopeptide poisonings from other types of mushroom poisoning is very difficult. These patients may present to an ED with a seemingly innocuous picture of nausea, vomiting, abdominal pain, and diarrhea, which is often attributed to other causes. Such patients may be sent home, only to return moribund on subsequent day (Goldfrank’s Toxicologic Emergencies, 7th Ed.).

Because of the hepatotoxicity of Amanita phalloides, the treatment must focus on the protection and on the supportive treatment of liver functions. Liver assistance method for the selective removal of albumin-bound substances by Molecular Adsorbent Recirculation System (MARS) is currently the most widespread extracorporeal liver support system, and using MARS seems beneficial in management of Amanita phalloides poisonings. Forced diuresis, hemodialysis, plasmapheresis, hemofiltration and hemoperfusion may be effective, but most studies offer no clinical evidence of benefit nor supportive pharmacokinetic data for any of these therapies (Goldfrank’s Toxicologic Emergencies, 7th Ed.). In a comparative research was found that liver regeneration rate was higher in patients who received alongside MARS compared with patients who had only penicillin, hydrocortisone, N-acetylcysteine and silibinin as standard-therapy (Wanieki, M. 2009, EAPCCT Congress, Case report).

Because of the absence of prospective controlled studies of exposure to amatoxin in addition to the extreme variability of success with many regimens, multiple-dose activated charcoal and supportive care with fluid and electrolyte replacement, high-dose penicillin G, and dexamethasone remain the standard therapy. (Goldfrank’s Toxicologic Emergencies, 8th Ed.).

Aim

To describe retrospectively the clinical findings, treatment and outcome of an accidental ingestion of Amanita phalloides mushroom by a family of five.

Methods

Symptoms (nausea, vomiting, diarrhea, chills) began 11–12 hours later. They were admitted to a local area hospital where all initial laboratory results were unremarkable. At first Amanita phalloides poisoning was not suspected and the patients received intravenous infusion, one patient (F33) got activated charcoal already 11–12 hours later. They were admitted to a local area hospital where all initial laboratory results were unremarkable. At first Amanita phalloides poisoning was not suspected and the patients received intravenous infusion, one patient (F33) got activated charcoal already 11–12 hours later. At first Amanita phalloides poisoning was not suspected and the patients received intravenous infusion, one patient (F33) got activated charcoal already 11–12 hours later. At first Amanita phalloides poisoning was not suspected and the patients received intravenous infusion, one patient (F33) got activated charcoal already 11–12 hours later.

Values of Lactate Dehydrogenase Values of Aspartate Aminotransferase Values of Alanine Aminotransferase Values of INR

Conclusion

When intravenous silibinin is not available, a combination therapy of high-dose intravenous penicillin, plasmapheresis and multiple dose activated charcoal is effective in the treatment of Amanita phalloides poisoning. The role of HBO remains questionable.

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Acknowledgements

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References:
Goldfrank’s Toxicologic Emergencies, 7th Ed. (Ed.). In a comparative research was found that liver regeneration rate was higher in patients who received alongside MARS compared with patients who had only penicillin, hydrocortisone, N-acetylcysteine and silibinin as standard-therapy (Wanieki, M. 2009, EAPCCT Congress, Case report).

Timeline: process of acute poisoning with Amanita phalloides on family of five 19.–31.08.2009.

An 57 year old woman (co morbidities; diabetes, hypertension) developed profound hepatotoxicity and renal failure. Renal failure improved after 4 procedures of conventional haemodialysis. Patient was discharged after 20 days of treatment with moderate renal failure. Four other patients (without co morbidities) were discharged after 10 days of treatment with moderately elevated hepatic markers, but without clinical symptoms.

Acknowledgements

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Amanita phalloides. Photo: Veiko Kastanje