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TOX ALERT

POISON
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LI REGIONAL POISON & DRUG INFORMATION CENTER

2009: #1

Toxic Mushrooms

Spring is the time when flowers and mushrooms are in bloom. It is also the season in which the Poison Center receives the most calls about mushroom ingestions. Classically, mushrooms are divided into eight toxic groups:

(a) some of the *Amanita* species can cause a fulminant hepatic failure, such as the *Amanita verosa*.

(b) the *Gyromitra*, is metabolized to a hydrazine metabolite called monomethylhydrazine. This is like isoniazid, which is a pyridoxine antagonist that can cause seizures, hemolysis and methemoglobinemia.

(c) the *Psilocybin* has LSD-like properties that can produce hallucinations, sensory distortion and mydriasis.

(d) the *Amanita* species which contain ibotenic acid or muscimol have been associated with producing vomiting, followed by drowsiness, muscular jerking, delirium and psychosis.

(e) the *Coprinus*, or "Inky Cap," causes a disulfiram – like reaction when ingested with ethanol. Effects can include GI upset, flushing, tachycardia and hypotension.

(f) The *Inocybe* and *Clitocybe* mushrooms can cause a cholinergic syndrome due to the muscarine toxins.

(g) the *Cortinarius* genus, contains the toxin orellanine which can produce a delayed renal failure.

(h) *Chlorophyllum molybdites* and *Omphalotus illudens* are examples of the many mushrooms which cause an

early onset of a nonspecific gastroenteritis.

Clinicians may encounter several other less common mushroom poisoning syndromes. The paxillus syndrome is caused by the "brown rim-roll mushroom" (*Paxillus involutus*) which causes an allergy-mediated hemolytic anemia. The toxic response seems to worsen with subsequent exposures. Rhabdomyolysis, occasionally severe enough to cause death, has been reported with ingestions of *Tricholomas equestre*, the "Man on Horseback" mushroom. These ingestions have occurred mainly in France, but the mushroom is also found in the United States. Another rare type of mushroom poisoning is caused by *Amanita smithiana* which contains toxins that can lead to a sub-acute renal failure. The onset of symptoms occurs at about five hours after ingestion, but is quite variable. Renal failure can be delayed 3-5 days later. These mushrooms are commonly mistaken for the popular and delicious Matsutake mushrooms.

The next time you see a patient with acute renal or liver failure, hemolytic anemia, or rhabdomyolysis without obvious etiology, you may want to ask them if they had ingested some wild mushrooms. Since there are several different antidotes and treatments available for certain poisonous mushrooms, it is important to contact the Poison Center to get the latest recommendations on management.

Poisoning & Drug Overdose 5th Ed. KR Olson 2007 p 274