

CASE REPORT

MYCETISMUS IN HAMADAN, OF WEST IRAN

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Abstract. Mycetismus or mushroom poisoning is defined in Anisworth and Brisby's Dictionary of the Fungi as distress resulting from the consumption of a fungal organism. This is in contrast to mycotoxicosis where the fungus, usually a hyphomycete, acts on some foodstuff of humans or animals and alters it. The paper describes three incidents of poisoning by the mushroom *Amanita virosa* in the Hamadan region of Iran. Two poisoning incidents occurred in adults and one in a child. All patients were associated with severe gastrointestinal symptoms including profuse diarrhea, vomiting and intestinal pain.

For identification of *A. virosa*, in addition to the case history and the symptoms, examination of kitchen waste was done and mushroom remains examined with 2% aqueous KOH, Melzer's reagent, using the identification keys of Bresinsky. Because this fungus is likely to be confused with edible mushrooms and mushroom hunting is a popular endeavor in some areas of the Hamadan region, it is important to educate people about the dangers involved.

Mycetismus is defined as distress resulting from the consumption of a fungal organism (Hawksworth, *et al*, 1983). Some of these toadstools have amatoxins which causing fatal human poisoning. They represent a family of nine cyclic octapeptides and produce cellular necrosis through the inhibition of messenger ribonucleic acid synthesis, by blocking the specific enzyme RNA-polymerase II. In this way they interrupt the transcription process and protein synthesis, causing human death (Faulstich, 1980; Piqueiras, 1989). Most of the known information about mycetisms is related to *Amanita phalloides* 'the green death agaric' (Weiland and Wieland, 1971; Lincoff and Mitchell, 1977). However there are some regions such as Japan (Benedict, 1971), Mexico (Perez-Moreno, 1994), Milwaukee (Piering and Bratanow, 1990) and Oslo (Madsen and Janssen, 1990), were some white species of *Amanita* produce most mycetisms. Also, mushroom hunting is a popular pastime in many countries (Rippon, 1992). Here, we report three cases of poisoning caused by *Amanita virosa* that occurred during the spring of 1993.

Eight days after consumption of mushrooms, the first patient died. At this time we were informed about this mycetismus. On that day the family of the patients were interviewed at the Mobashar Hospital in Hamadan city, where the first patient was hospitalized. Some mushroom photographs were shown to them. They thought the causal agent looked like a white species of *Amnita*. One day later, we were informed that some fungi of kitchen waste had been gathered and kept by a student of laboratory sciences. He gave the kitchen waste to our laboratory, where we examined it with 2% aqueous KOH, Melzer's reagent and used the identification keys of Bresinsky and Besl (1990). We recognized them as a materials of *Amanita virosa*. For further study, some fresh specimens were collected in the region, and sent to the Institute of Botany in Tehran city, which identified our fresh fungi as a *Amanita virosa*.

In the study, the family involved lived in a suburban area in west Iran. According to the provided information the eastern mushrooms were not a mixture of species but only *Amanita virosa*. These toadstools were growing in the region of that village and collected by a boy from the patient's home as edible mushrooms. Stew was cooked with tomatoes and the flavor was not unpleasant. After a latency period 5-9 hours the first symptoms ap-

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peared. All the patients (father 40 years, girl 19 years, boy 8 years) developed severe abdominal pain and colic, together with vomiting. They were taken to the local Health House, where they continued to have diarrhea and vomiting. They were given intravenous fluids for dehydration and then were admitted to the hospital for monitoring. In the hospital in the hepatorenal phase, frank symptoms were also observed in the boy: an enlarged and pressure-sensitive liver, anuria and disturbances of consciousness. He rapidly progressed to hepatic coma and died after 5 days hospitalization. The other 2 patients continued to improve until complete recovery, presumably due to smaller quantities of mushroom eaten. Elapsed time from ingestion to death was similar to the reported for some other patients in Guatemala (Longemann *et al*, 1987), Mexico (Perez-Moreno *et al*, 1994), Milwaukee (Piering and Bratanow, 1990), and Oslo (Medsen and Jenssen, 1990).

ACKNOWLEDGEMENTS

We are greatly indebted to Mr M Sabar (Institute of Botany) for his valuable laboratory help.

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