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Acute Psychoactive Mushroom Poisoning in Iran: Clinical and Mycological Context

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Dear Editor,

Acute poisoning with psychoactive mushrooms ("magic mushrooms") is an important consideration in emergency toxicology. Over the past several years, I have encountered patients with acute toxicity after ingesting mushrooms described as psychoactive in my clinical practice at a toxicology referral hospital. Patients reported either purchasing raw or dried mushrooms or obtaining substrate and spawn from distributors for home cultivation. They described the mushrooms as small and brown. The mushrooms were consumed raw or dried, or incorporated into foods such as pizza or sandwiches. These observations reflect clinical experience rather than population-level epidemiological data and should not be interpreted as a formal case report or case series.

To the best of my knowledge, the Iranian mycological literature has reported the occurrence of several taxa with psychoactive or neurotoxic associations documented in the international literature, including *Psilocybe cyanescens*, *Psilocybe serbica*, *Panaeolus fimicola*, *P. olivaceus*, *P. subbalteatus*, *Pluteus salicinus*, *Gymnopilus junonius* (formerly *G. spectabilis*), *Amanita pantherina*, *A. gemmata*, and *A. strobiliformis* (1-3). However, Iranian occurrence records and international toxicologic evidence must be interpreted separately. Detection or reporting of a taxon in Iran does not establish the presence or concentration of psychoactive compounds in Iranian specimens, nor does it establish human poisoning attributable to that taxon in Iran (Figure 1). It is also unknown whether any of these taxa correspond to mushrooms currently purchased or cultivated or whether such mushrooms originate outside Iran.

Psilocybe species and some *Panaeolus* species are associated with psilocybin and psilocin and may produce serotonergic psychedelic effects and associated perceptual and neurobehavioral disturbances (3-5). Psilocybin and psilocin have also been detected in *Pluteus salicinus* (6), but their concentrations are highly variable, and not all specimens are psychoactive. *Amanita pantherina* and *A. gemmata* are associated primarily with ibotenic acid and muscimol, whereas the toxicologic significance of *A. strobiliformis* is less certain; it is included here only as a reported record (4). Interpretation of *G. junonius* should likewise be cautious because historical reports under *G. spectabilis* cannot necessarily be extrapolated to all currently identified *G. junonius* specimens (1, 4).

Clinical manifestations vary according to the mushroom and its constituents. Psilocybin/psilocin-containing mushrooms may cause hallucinations, perceptual disturbances, anxiety, agitation, ataxia, tachycardia, tremor, and mydriasis, whereas ibotenic acid/muscimol-containing *Amanita* species may cause confusion, visual disturbances, ataxia, alternating central nervous system excitation and depression, and, in severe cases, seizures or coma (4, 5, 7). Severe neurobehavioral disturbances may result in accidental injury and other secondary complications (7, 8).

Management is primarily supportive and includes a low-stimulus environment and appropriate clinical, cardiopulmonary, and neurological monitoring (7, 8). Benzodiazepines may be used for severe anxiety, agitation, psychomotor disturbance, or seizures (7, 8). Patients should be observed until their mental status, neurological findings, and vital signs have improved sufficiently to permit safe disposition. Persistent or severe neurotoxicity,

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Figure 1. Representative mushroom taxa reported from Iran with documented psychoactive or neurotoxic associations in the international literature. A-B, *Psilocybe cyanescens* and *P. serbica*; C-E, *Panaeolus fimicola*, *P. olivaceus*, and *P. subbalteatus*; F, *Pluteus salicinus*; G, *Gymnopilus junonius* (formerly *G. spectabilis*); H-J, *Amanita pantherina*, *A. gemmata*, and *A. strobiliformis*. The occurrence of these taxa in Iranian mycological records does not establish the presence or concentration of psychoactive compounds in Iranian specimens or confirm human poisoning attributable to these taxa in Iran. None of the photographs was taken in Iran.

seizures, prolonged central nervous system depression, significant co-ingestion, diagnostic uncertainty, or secondary injury warrant continued monitoring and supportive care. Consultation with a medical toxicologist is appropriate when the diagnosis or management is uncertain.

In conclusion, Iranian mycological records include multiple taxa with potential psychoactive or neurotoxic relevance, but their documented occurrence does not establish psychoactive chemistry or confirmed human poisoning in Iran. The mushrooms encountered in clinical practice may differ from these taxa. Species-level identification, toxicologic confirmation when feasible, epidemiological surveillance, and public health communication are needed to better characterize psychoactive mushroom exposures.

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Footnotes

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