



# AMANITA MUSCARIA: A RISKY DELICACY

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## Introduction

There are over 10 000 known species of mushrooms worldwide, in which only about 100 species are classified as poisonous. Mushroom poisoning usually occurs because of misidentification of poisonous mushroom from similarly appearing edible species. This article is to highlight a rare occurrence of mushroom poisoning with neurological symptoms in Malaysia.

## Case Report

A middle-aged couple of rubber tappers from a rural village in Tanah Merah, Malaysia, self-picked some wild mushrooms found at their estate thinking they could be the well-known delicacy called "kulat busut". The mushrooms were consumed after being cooked. Two hours post ingestion, they started to have giddiness and persistent vomiting. Subsequently, their conscious level deteriorated and the wife developed generalised tonic clonic seizure. However there were no loose stool, no abdominal pain, no skin rash, no shortness of breath, no limb weakness, no salivation, no diaphoresis, or lacrimation. Upon arrival at the emergency department, the GCS of the husband and the wife were E1V1M3 and E1V2M5 respectively. Both of them were intubated for airway protection and activated charcoal were administered. CT brain were done for both with no significant findings. Blood investigation results were normal. After consultation with a toxicologist, we suspected they had ingested *Amanita muscaria* mushroom species that contains ibotenic acid and muscimol mycotoxin. Supportive treatment were continued and we were able to extubate them the next day without complications.

The cooked mushrooms



## Discussion

Ibotenic acid and muscimol have similar chemical structures but act in opposite ways. Muscimol acts as an agonist at NMDA receptor which has the effect of CNS stimulant. Ibotenic acid on the other hand has CNS depressant effects acting at GABA receptors. *Amanita muscaria* does have certain amount of muscarine but relatively low to cause cholinergic effects. Drying and cooking convert most of the ibotenic acid in these amanitas to muscimol. Only blanching and throwing out the cooking water significantly lower the toxicity. Clinical findings typically occur within 30 minutes to 3 hours of ingestion. They produce rapid onset of symptoms like gastrointestinal upset, delirium, confusion, excitation or coma either alone or in combination. Convulsion is uncommon but it occurred in our patient. As the onset is acute, good prognosis is expected with supportive treatment. There were few cases reported to have delayed onset resulting in prolonged recovery time. A few deaths as well have been reported with ingestion of this potentially deadly mushroom.



The variants of *Amanita muscaria*.

## Conclusion

The same species of mushroom may present with a range of symptoms depending on the quantity consumed and the state of ingestion either cooked or uncooked. Early recognition of mushroom poisoning and determination the species type are of paramount importance in determining subsequent appropriate management strategies.

## References

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2. Timothy J Wiegand. (2019) Clinical manifestations and evaluation of mushroom poisoning



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