Supplementary material

Supplementary Table 1. In-depth investigation of ICU admission cases.

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| Case number | Age | Sex | Season | Symptom | Time to symptom onset | Arrival type | Presentation of illness | Initial vial sign  (SBP/DBP-HR-RR-BT) | Initial  mental status | Mushroom  name | Toxin | Admission  Results | Length of stay (days) |
| 1 | 50 | Male | Summer | Vomiting | Unknown | Others | Unknown | 90/60-78-20-36.0 | Awake | Unknown | Unknown | Discharge | 2.1 days |
| 2 | 56 | Male | Summer | Fever, tachycardia | 6 to 24 hours | EMS (119) | One day before ED visit, he ate *Podostroma cornu-damae*, and presented symptoms of fever and aggravating tachycardia. He visited primary clinics, but the symptoms grew worse and which resulted in referral to ED. | 87/61-137-22-39.4 | Verbal | *Podostroma cornu-damae* | Trichothecene | Death | 0 days |
| 3 | 61 | Male | Summer | Vomiting | >24 hours | Other ambulance | One day before ED visit, he felt hungry and ingested wild white mushroom (suspected *Amanita virosa*) in Mindoong mountains. | 142/95-80-20-37.1 | Awake | *Amanita virosa*  (suspected) | Amatoxin | Discharge | 4.0 days |
| 4 | 67 | Male | Autumn | Vomiting, nausea | 6 to 24 hours | Others | He ate unidentified wild mushrooms from the mountains for dinner. He presented with vomiting and nausea at 4 a.m. | 115/61-97-24-36.7 | Awake | Unknown | Unknown | Discharge | 4.2 days |
| 5 | 62 | Female | Winter | Unknown | >24 hours | Others | She cooked (boiled) and ate black mushrooms given to her by her neighbors | Unknown | Unknown | Unknown | Unknown | Discharge | 71.1 days |
| 6 | 53 | Male | Summer | Vomiting, diarrhea | >24 hours | Other ambulance | He collected wild mushroom from the mountains of Ulsan region, (based on photos provided by patient, mushrooms resembled *A.virosa* or *A.verna*). He boiled and ate a handful of mushrooms with alcohol. The next day he presented vomiting and diarrhea and visited primary care center. He was recommended to be admitted and referred to ED of tertiary hospital. | Unknown | Unknown | Unknown | Unknown | Discharge | 16 days |
| 7 | 53 | Female | Autumn | Unknown | >24 hours | Hospital ambulance | Unknown | 138/44-82-23-36.4 | Awake | Ramaria species  (suspected) | Others | Death | 4.9 days |
| 8 | 67 | Male | Spring | Altered mentality, bradycardia | <6 hours | Hospital ambulance | He ate poisonous mushrooms, and three hours later, presented with confused mental state and visited ED. | 98/61-53-20-36.1 | Verbal | Unknown | Unknown | Discharge | 1.3 days |
| 9 | 46 | Male | Summer | Altered mentality | 6 to 24 hours | Other  ambulance | He misidentified poisonous mushroom and ate them. | 130/90-77-18-36.4 | Verbal | Unknown | muscarine | Discharge | 1.3 days |
| 10 | 80 | Male | Summer | Dizziness, general weakness | <6 hours | Others | He frequently climbed the mountains to gather and consume mushrooms. He reported that nothing was wrong up until this point.  Around 17:00 on the day of the visit, he consumed unknown mushrooms at home, and one hour later, he presented with symptoms of vertigo and went to the ED | Unknown-80-20-36.5 | Awake | *Macrolepiota neomastoidea* | Others | Discharge | 4.3 days |
| 11 | 74 | Female | Summer | Altered mentality | >24 hours | EMS (119) | Unknown | Unknown-80-20-36.8 | Verbal | *Macrolepiota neomastoidea* | Others | Discharge | 2.4 days |
| 12 | 62 | Female | Autumn | Vomiting | 6 to 24 hours | Others | After ingestion an unknown mushroom, she presented with vomiting | 120/90--88-18-36.7 | Awake | Unknown | Unknown | Discharge | 5.7 days |
| 13 | 69 | Male | Summer | Altered mentality, aggressive behavior, hallucination | 6 to 24 hours | Other  ambulance | He previously treated healthy patients. He reported consuming white *A. philloides* mushrooms with two glasses of soju at 21:00. on the same day, and presented with altered mental state and aggressive behavior at 23:00. He was admitted to the ED, treated with charcoal and N-acetylcysteine, and then transferred to a tertiary hospital for intensive care. | 170/100-98-20-36.0 | Pain | *Amanita phalloides* | Amatoxin | Discharge | 3.0 days |
| 14 | 78 | Male | Summer | Altered mentality, abdominal pain, fever | <6 hours | Other  ambulance | The patient consumed two types of mushrooms on the mountains with his wife. After that, he complained of abdominal pain and vomiting. He called 119 and visited the Pyeongtaek St. Mary's Hospital around 5 pm. From then on, he gradually grew more drowsy. He was transferred to a tertiary hospital on the recommendation of the medical team. | 169/74-52-16-36.0 | Pain | Unknown | Unknown | AMA discharge | 3.2 days |
| 15 | 76 | Female | Summer | Unknown | <6 hours | Other  ambulance | Unknown | 183/108-67-22-35.8 | Verbal | Unknown | Unknown | AMA discharge | 3.2 days |
| 16 | 70 | Male | Summer | Vomiting, altered mentality | <6 hours | EMS (119) | This patient dug up mushrooms in the mountains and ate them three days ago. The mushrooms were consumed at around 13:30 on the day of admission. He showed symptoms of uttering meaningless words beginning around 18:00, resulting in a hospital visit. He also presented with nausea, vomiting 3 times per minute. Mushrooms assumed to be cause of confusion: *Amanita pantherina, Megacollybia platyphylla* | 140/100-67-22-35.8 | Verbal | *Amanita pantherina* (Susepcted, *Megacollybia platyphylla* (suspected) | Unknown | Discharge | 1.3 days |
| 17 | 63 | Male | Autumn | Altered mentality | <6 hours | EMS (119) | He slept after eating mushrooms that he dug up in the mountains around 15:00. At around 16:40, his wife attempted to wake him, but he did not wake up. The wife reported his condition to 119 and he was transferred to the emergency room. He has a history of high blood pressure, diabetes, and hyperlipidemia. | 197/107-62-20-36.7 | Pain | Unknown | Unknown | Discharge | 1.5 days |
| 18 | 79 | Male | Autumn | Nausea, vomiting, diarrhea hypotension | >24 hours | Others | This patient ate mushrooms that he dug up in the mountains a day ago. He arrived at the hospital complaining of nausea, vomiting, diarrhea. | 91/36-101-22-36.8 | Awake | *Macrolepiota neomastoidea* | Unknown | Discharge | 11.2 days |
| 19 | 67 | Male | Autumn | Facial swelling, dyspnea, itching sensation, hypotension | >24 hours | Others | According to the patient's guardian (wife), two days before the visit, he confused the Reishi mushroom with the *Podostroma cornu-damae*, which his wife dug up from the mountains. He boiled the *Podostroma cornu-damae* and consumed 5 mugs of the preparation. After ingestion, he complained of facial swelling, dyspnea, itching sensation, and poisoning. He was admitted to the hospital.  Mental: A LOC(-) GCS 15 | 82/46-104-15-36.8 | Awake | *Podostroma cornu-damae* | Trichothecene | Discharge | 5.7 days |
| 20 | 70 | Male | Autumn | Vomiting | <6 hours | EMS (119) | At around 17:00, he ate mushrooms picked from the wild with his party. Beginning around 19:30, he felt discomfort, which resulted in visit to the ED. | 115/72-96-20-36.0 | Awake | Unknown | Unknown | Discharge | 2.1 days |
| 21 | 73 | Male | Autumn | Vomiting | <6 hours | EMS (119) | Around 17:30, he grilled and ate 7 to 8 unidentified mushrooms picked from the field. After, he complained of stomachache and visited the ED. | 155/79-78-22-36.9 | Awake | Unknown | Unknown | Discharge | 2.2 days |
| 22 | 60 | Male | Autumn | Vomiting | <6 hours | EMS (119) | Around 17:30, he grilled and ate 7 to 8 unidentified mushrooms placed on the field. After, he complained of stomachache and visited the ED. | 161/89-108-20-36.6 | Awake | Unknown | Unknown | Discharge | 2.2 days |
| 23 | 77 | Male | Autumn | Vomiting, abdominal pain, hypotension | 6 to 24 hours | Other  ambulance | He ate red colored mushrooms dug up from the mountains. He complained of abdominal pain and vomiting. | 91/49-69-20-36.0 | Awake | *Podostroma cornu-damae*  (suspected) | Trichothecene | Death | 21.3 days |
| 24 | 80 | Female | Autumn | Altered mentality, vomiting | <6 hours | Hospital  ambulance | After she boiled and ate 3 to 4 white mushrooms grown under a pine tree. She complained of vomiting, and drowsiness following which she visited the hospital. | 150/100-85-20-36.0 | Verbal | Unknown | Unknown | Discharge | 5.1 days |
| 25 | 78 | Male | Autumn | Altered mentality, vomiting | <6 hours | Others | After he boiled and ate 3 to 4 white mushrooms grown under a pine tree. He complained of vomiting, and drowsiness, following which he visited the hospital. | 100/70-80-20-36.4 | Verbal | Unknown | Unknown | Discharge | 5.1 days |

Abbreviations: AMA, Against Medical Advice; ED, Emergency Department; EMS, Emergency Medical Services.