Plant poisoning in childhood: A snowberry intoxication

Empoisonnement par végétaux chez l’enfant : une intoxication à la symphorine

Plant exposures ranked tenth in the most commonly reported exposures in children under the age of five to poison control centers in the United States in 2015 [1]. We describe a case of severe snowberry poisoning in a child and then discuss the previously reported cases and toxicity mechanisms. A four-year-old girl was admitted in our hospital for drowsiness. She had no previous medical history. She presented with altered vigilance and vomiting in the afternoon after staying at her grandparents’ home in the morning. First clinical examination at home revealed a Glasgow Coma Scale (GCS) at 11. On arrival in the emergency room GCS was 15 but she had visual hallucinations and confusion. Neurological and general examination did not show other abnormalities. The patient said that she had eaten "some white candies". Interrogation of the parents revealed that her grandparents had many medications, including gliclazide, fluindione, perindopril, sotalol, ramipril, hydrochlorothiazide, and lercanidipine. During her stay in the emergency room she had moderate sinusal bradycardia around 60/min so she was first hospitalized in Intensive Care Unit for 24 hours because of the suspicion of antihypertensive drug intoxication. Complete blood count, blood electrolytes and glycemia, cardiac enzymes were within normal limits. Blood and urine toxicology screens were negative. Electroencephalography (EEG) on admission revealed diffuse moderate slowing of the brain activity. The parents then informed us of the presence of snowberry in the grandparents’ garden, which were later identified by the child as the “white candies” she had eaten. No drugs were missing from the grandparents’ medication stock. The regional Poison Control Center was contacted and after discussing the case, no further intervention was deemed necessary. The patient recovered completely within a few hours, and was discharged home after 48 hours. EEG control seven days later revealed the same alterations. Fifteen days later, EEG control only showed polyrhythmic background activity that was considered as a physiologic variant. Clinical evolution at fifteen days was favorable.

Discussion
Snowberry (Symphoricarpus albus or Symphoricarpus racemosus) is a low-growing deciduous shrub cultivated in Europe as an ornamental hedge. Flowers are pink and bell-shaped, growing in small clusters among the main stems. Its white berries mature in late summer and fall [2]. (Figure 1)

We did not find any previous report of cardiac toxicity due to snowberry intoxication, so this could be an incidental finding, as bradycardia in our patient was moderate and transitory. As shown in our case, it is worth noting that neurologic toxicity was still visible with moderate diffuse EEG slowing up to seven days after intoxication. To our knowledge, this is the first description of EEG alterations after snowberry intoxication, but these are not specific. Literature on plant poisoning in children in general and on snowberry in particular remains scarce. Snowberry toxicity seems to be mostly an anticholinergic toxidrome. Duration of symptoms seems to be around 24 hours, depending on the amount of berries ingested. Previous reports of snowberry toxicity seem to fit with our observation: it was first reported in a 19th-century description of four children presenting with “vomiting, purging, and delirium, after which they became semi-comatose” [3]. Lewis reported in 1979 on a 2-years-old who presented only with vomiting and recovered rapidly [4]. Lamminpaa reported in 1996 on a 4-years-old girl presenting with polydipsia, somnolence, mydriasis, and urinary retention who recovered within 24 hours [5]. Snowberry poisoning is also cited in a few epidemiologic studies on plant poisoning in Czech Republic [6] and France [7].

Compounds isolated from snowberries include chelidonine, but the role of this alkaloid in snowberry toxicity has not been proven [8]. Median lethal dose for snowberry was found to be extremely high at 435 g/kg in mice in a study by Chavant et al. [9]. None of the other compounds reported can clearly account for toxicity either [2].

Plant exposure in children is frequent but there are few severe cases of plant poisoning in children in general, and snowberry poisoning in particular. Vigilance alteration in children remains a diagnostic challenge in the absence of clear etiology. Our case illustrates that thorough interrogation of the parents is sometimes necessary to find the origin of the symptoms. More studies are needed to understand the pharmacological mechanism of snowberry toxicity.
Disclosure of interest: the authors declare that they have no competing interest.

References


Julien Neveu1, Chloé Ribet1, Marie-Amélie Dubois2, Julien-Pierre Reynoard2, Nicolas Simon2, Lisa Giovannini-Chami1
1Hôpitaux pédiatriques de Nice CHU-Lenval, 06200 Nice, France
2Hôpital Sainte-Marguerite (AP-HM), centre antipoison et de toxicovigilance, service de pharmacologie clinique, 13009 Marseille, France

Correspondence: Julien Neveu, Hôpitaux Pédiatriques de Nice CHU- Lenval, 06200 Nice, France neveu.julien@gmail.com

Received 9 February 2018
Accepted 14 June 2018
Available online:

https://doi.org/10.1016/j.lpm.2018.06.003
© 2018 Elsevier Masson SAS. All rights reserved.