HOLIDAY PLANT TOXICITY

From mistletoe to poinsettia, plants are a prominent feature of the holidays. Although festive, these plants can also pose a temptation to young children and pets. While they are generally of low toxicity, this article discusses the clinical effects and potential treatments for ingestion of three popular holiday plants.

MISTLETOE
American Mistletoe (*Phoradendron leucarpum*) is a parasitic plant with smooth, green oval shaped leaves and clusters of waxy white berries. The plant contains the toxins phoratoxin and ligatoxin. Generally, symptoms from eating only a few of the berries or leaves are relatively mild, leading to only nausea, vomiting and diarrhea. However, consumption of a larger amount of leaves or berries can result in more severe gastrointestinal symptoms distress (nausea, vomiting and diarrhea) and ingestion of concentrated teas or extracts has rarely led to symptoms of seizure, ataxia and hepatotoxicity.

In retrospective review of poison center data, Krenzelok et. al. examined 1754 cases of mistletoe exposure over a 7 year period. Ninety-two percent of the cases were pediatric. Of confirmed ingestions (n = 1090), 90.3% were asymptomatic and 8.6% only had minor symptoms. In a separate review, Spiller et. al. reviewed 92 cases of mistletoe exposure. Only 11 of these patients developed symptoms, however of two pediatric patients one developed ataxia and 1 was reported to have a seizure. Based upon this

News and Notes:

CONGRATULATIONS to Dr. Nathan Charlton who is a recipient of the 2019 Dean’s Clinical Excellence Award at the University of Virginia. Dr. Charlton is the Associate Director of the Blue Ridge Poison Center and an Associate Professor of Emergency Medicine at UVA Health. He leads the semi-annual Wilderness Medicine course at the University of Virginia School of Medicine, and is highly regarded as an educator. We are proud of you, Nate!
data, the authors concluded that significant toxicity is rare (even at doses of 5-20 berries or 1-5 leaves) and that the majority of cases require no intervention, but the possibility of more severe toxicity including seizures exists in large ingestions.

Treatment is generally supportive. Antiemetics can be given for gastrointestinal symptoms. If patients are asymptomatic for 6 hours they can typically be medically cleared.

**HOLLY**

Holly (*Ilex aquifolium*) is an ornamental shrub with dark green leaves with serrated protrusions and red berries. The *Ilex* genus contains many different species and depending on the species, some variation in the appearance of the plant can be expected.

The berries contain saponin, which is the toxic component. The leaves are not known to be toxic. Gastrointestinal toxicity, including nausea vomiting and abdominal cramping can occur following large ingestion of holly berries. A dose of 20-30 berries in an adult is considered toxic, although nausea has been known to occur in children with as few as 5. Overall, data is limited regarding the toxicity of holly berries, but serious toxicity appears to be very rare and most cases can be managed with simple observation. Gastrointestinal symptoms can be treated with antiemetics. As with other berry exposures in the pediatric population, aspiration is a risk and patients should be evaluated for symptoms.

**POINSETTIA**

Poinsettia (*Euphorbia pulcherrima*) is a decorative plant also known as the “Christmas flower” and “Christmas star.” The poinsettia has dark green leaves with the topmost leaves taking on a red, white or pink coloration.

The plant produces a milky white sap which can produce local irritation and dermatitis on contact with skin, similar to poison ivy. The poinsettia developed a reputation for more serious toxicology due to an isolated case report in 1919 of a fatality in a 2 year old Hawaiian child. However, the legitimacy of this case report is highly contested and a retrospective case review of poison center data by Krenzelok et al demonstrated almost no toxicity. In this study, of 22,793 poinsettia exposures there were no fatalities, the majority of patients (92.4%) did not develop any toxicity and only 3.4% developed mild toxicity. Symptoms can include nausea, vomiting and abdominal cramping in
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large ingestions.

As with the other holiday plants, gastrointestinal symptoms can be treated with antiemetics as needed. The majority will be able to be medically cleared after monitoring period of a few hour.

SUMMARY

While mistletoe, holly, and poinsettia are seasonal decorations that pose a risk of exposure to children, in the vast majority of cases they are only associated with mild toxicity, including nausea and vomiting. Treatment is generally symptomatic and can include antiemetics as needed for the symptoms. If symptoms do not occur or resolve within 4-6 hours of ingestion the patient can generally be medically cleared.

For guidance in treating a plant exposure, or any other poisoning, please call the Blue Ridge Poison Center at 1-800-222-1222. Healthcare providers may also use the dedicated HCP line: 1-800-451-1428. Medical toxicologists are standing by 24 hours every day, even holidays and weekends, to provide assistance to health care providers and to the general public. Free and confidential.

Sources:


