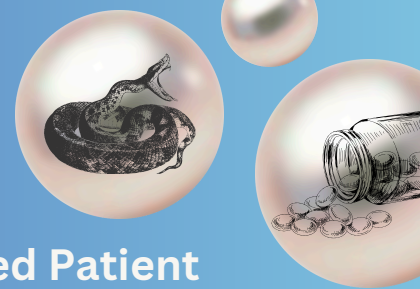


# POISON PEARLS

Toxicology Topics for the Healthcare Team of a Poisoned Patient

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## Cannabinoid Hyperemesis Syndrome

February 2025

### Background

Cannabis is the fourth most commonly used psychoactive substance worldwide ([World Drug Report 2024](#)). Cannabis products are used in the pharmaceutical, medicinal, and recreational setting. Cannabinoid hyperemesis syndrome (CHS) is a gastrointestinal condition caused by frequent and long-term use of cannabis. CHS is characterized by frequent episodes of nausea, vomiting, and intense abdominal pain.

### Pathophysiology

Tetrahydrocannabinol (THC) is the psychoactive cannabinoid thought to activate endocannabinoid receptors, which regulate the vomiting center in the brain, secretions in the gut, and the perception of visceral pain. Proposed mechanisms of CHS include activation of TRPV-1 receptors, delayed gastrointestinal emptying, cannabinoid lipid accumulation, and CYP450 genetic variations ([Perisetti & Gajendran 2020; \(33\)6:571-578](#)).

### Complications

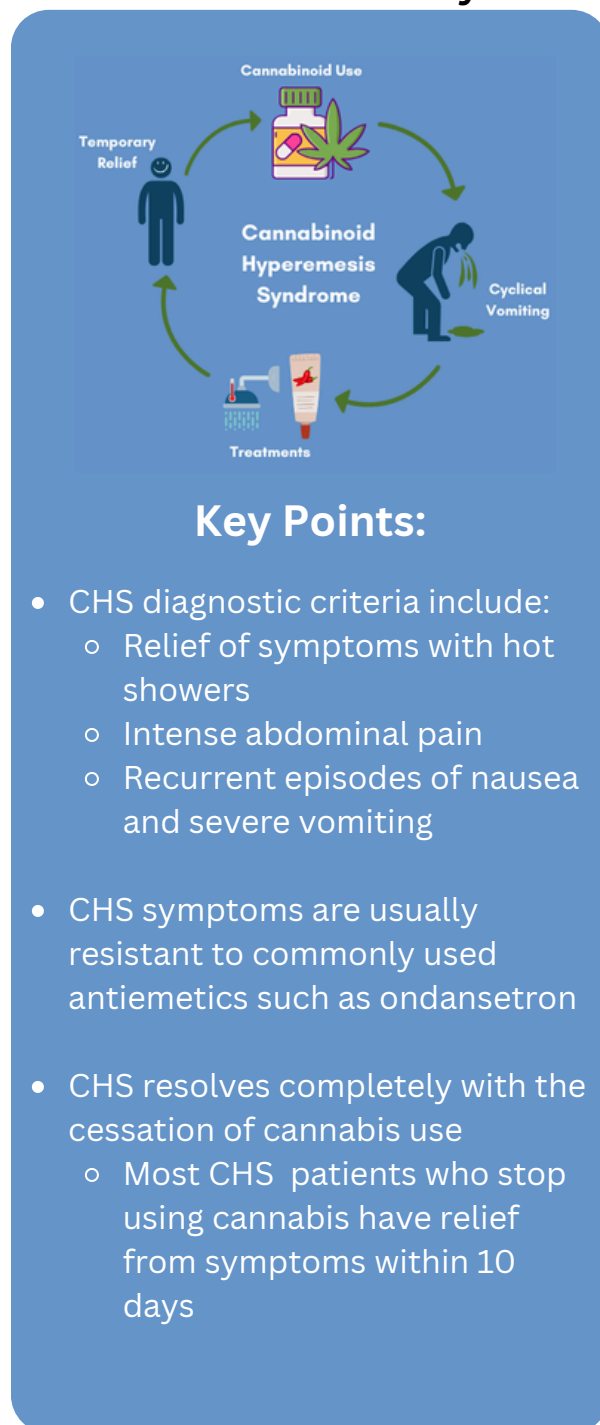
Medical Complications of CHS align with complications of frequent vomiting, including:

- tooth erosion and enamel damage
- dehydration
- acute kidney injury
- electrolyte imbalances

The recurring nature of CHS often results in repeated emergency department visits sometimes leading to hospitalization. Prompt recognition and treatment are crucial to prevent long-term morbidity. ([JAMA 2024;332\(17\):1496](#))

### Treatment

CHS is usually resistant to typical antiemetics, such as ondansetron. Cannabinoid cessation is the best long term treatment plan. The primary interventions include hot water showers (hydrotherapy) and topical capsaicin applied as a 1 mm layer of cream to the abdomen. Other therapies with some efficacy include antihistamines (promethazine and cyproheptadine), aprepitant and IV haloperidol. ([Senderovich H, et al. Med Princ Pract. 2022;31\(1\):29-38](#))



### Key Points:

- CHS diagnostic criteria include:
  - Relief of symptoms with hot showers
  - Intense abdominal pain
  - Recurrent episodes of nausea and severe vomiting
- CHS symptoms are usually resistant to commonly used antiemetics such as ondansetron
- CHS resolves completely with the cessation of cannabis use
  - Most CHS patients who stop using cannabis have relief from symptoms within 10 days

Written by: Kylie King and Lindsay Dixon PharmD Candidates  
Reviewed by: Dr. Goertemoeller, Dr. Hays, Dr. Pancioli, Dr. Yin

For non-urgent questions or to submit topic ideas please contact:

✉ : [OhioPoisonCenters@cchmc.org](mailto:OhioPoisonCenters@cchmc.org)

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