MISSISSIPPI STATE DEPARTMENT OF HEALTH

This is an official
MS Health Alert Network (HAN) Advisory

MESSAGE ID: **MSHAN-20180525-00410-ADV (Health Advisory)**

RECIPIENTS: **All Physicians, Hospitals, ERs, ICPs, NPs, and Healthcare Providers - Statewide**

DATE: **Friday, May 25, 2018**

SUBJECT: **Outbreak of Life-threatening Coagulopathy Associated with Synthetic Cannabinoids Use**

Dear Colleagues,

Today the Centers for Disease Control and Prevention CDC) issued a Health Alert Network Message (HAN) which provides information and recommendations around the ongoing outbreak of coagulopathy associated with synthetic cannabinoid use.

In March 2018, the Illinois Department of Public Health first reported cases of unexplained bleeding among patients with reported use of synthetic cannabinoids. Drug and biological samples from cases identified brodifacoum, a long-acting vitamin K-dependent antagonist used as a rodenticide. Since that time 202 cases and 5 deaths have been reported in nine states, primarily in Illinois (N=164). More than 95% of case-patient biological samples have tested positive for brodifacoum. **No cases of coagulopathy associated with synthetic cannabinoids have been reported in Mississippi to date.**

The Mississippi State Department of Health (MSDH) requests that clinicians:

- Maintain a high index of suspicion for vitamin K-dependent antagonist coagulopathy in patients with a history or suspicion of using synthetic cannabinoids. Patients may present with clinical signs of coagulopathy, bleeding unrelated to an injury, or bleeding without another explanation.
- Ask all patients about history of illicit drug use. All high-risk patients (e.g., those reporting synthetic cannabinoids use or those who are suspected of synthetic cannabinoids use within the last three months), regardless of their presentation, should be screened for vitamin K-dependent antagonist coagulopathy by checking their coagulation profile (e.g., INR).
- MSDH requests that healthcare providers call the Mississippi Poison Control Center (1-800-222-1222) to report suspected cases and for questions on diagnostic testing and management of these patients.

Please see below for the full CDC HAN.

Regards,

Paul Byers, MD
State Epidemiologist

MISSISSIPPI STATE DEPARTMENT OF HEALTH

This is an official

CDC HEALTH ADVISORY

Distributed via the CDC Health Alert Network
May 25, 2018, 1130 ET (11:30 AM ET)
CDC HAN-00410

Outbreak of Life-threatening Coagulopathy Associated with Synthetic Cannabinoids Use

Summary
The Centers for Disease Control and Prevention (CDC) is providing information on: 1) the current status of a multistate outbreak of coagulopathy from exposure to synthetic cannabinoid products containing a vitamin K-dependent antagonist agent, such as brodifacoum; 2) signs and symptoms of presenting patients from this outbreak and which patients are at risk; 3) laboratory testing options that are available to help identify and classify cases; 4) available resources that may help clinicians make decisions; and 5) to whom to report possible cases.

Background

General Background

Synthetic cannabinoids are not one drug. Hundreds of different synthetic cannabinoid chemicals are manufactured and sold (1). New ones with unknown health risks become available each year. These chemicals are called *cannabinoids* because they act on the same brain cell receptors as tetrahydrocannabinol (THC), the main active ingredient in marijuana; however, synthetic cannabinoids may affect the brain in different and unpredictable ways compared to THC (2). Synthetic cannabinoids are used in a variety of ways including: 1) sprayed onto plant material and then smoked; 2) used in electronic nicotine delivery devices (such as e-cigarettes); or 3) ingested when added to herbal tea or food.

Synthetic cannabinoids are widely available. Consumers can buy synthetic cannabinoids in convenience stores, from individual drug dealers, friends, or online as incense or natural herbal products. They are sold under many different brand names, but are commonly referred to as synthetic marijuana, fake weed, legal weed, K2, and Spice. Adverse effects from synthetic cannabinoids use vary and can include neurological (e.g., agitation, confusion), psychiatric (e.g., hallucinations, delusions), and other physical (e.g., tachypnea, tachycardia, gastrointestinal distress) signs and symptoms (1-3).

Outbreak Background

In March 2018, the Illinois Department of Public Health reported cases of unexplained bleeding among patients who reported using synthetic cannabinoids. Subsequent testing of drug and biological samples from case-patients detected the presence of brodifacoum, a long-acting vitamin K-dependent antagonist that is used as a rodenticide (4).

CDC is currently coordinating national surveillance activities for possible cases of vitamin K-dependent antagonist coagulopathy associated with synthetic cannabinoids use. Since the index case was identified in Illinois on March 3, 2018, state health departments have reported 202 cases, including five deaths, to CDC. Case patients have been identified in nine states with the majority being reported from Illinois (n=164). Maryland has reported 20 cases. Florida, Indiana, Kentucky, Missouri, Pennsylvania, Virginia, and Wisconsin have reported six or fewer cases per state. More than 95 of case-patient biological

samples have tested positive for brodifacoum. The current working hypothesis is that brodifacoum was mixed with synthetic cannabinoids products.

Case-patients from this outbreak have presented with a variety of signs and symptoms of coagulopathy (e.g., bruising, nosebleeds, excessively heavy menstrual bleeding, hematemesis, hemoptysis, hematuria, flank pain, abdominal pain, and bleeding gums or mouth). In addition, some patients have been asymptomatic or presented with complaints unrelated to bleeding but have had numerical coagulopathy that may put them at risk for bleeding complications resulting from injuries and invasive or surgical procedures. Patients should be considered high-risk for coagulopathy if they have reported use of or are suspected of using synthetic cannabinoids.

The most helpful and commonly available laboratory test to help identify cases is the International Normalized Ratio (INR) that is part of a routine coagulation profile. An abnormal INR is defined as being outside the reference laboratory value. For case reporting purposes, an INR>2 is being used as a criteria to help identify and classify possible cases. Case confirmation requires detection of brodifacoum in blood, serum, plasma, or urine, as determined by reference laboratory testing. Clinicians and healthcare providers should work with their healthcare facility's laboratory to determine what options are available to them for brodifacoum testing.

Recommendations

Recommendations for Clinicians

1. Maintain a high index of suspicion for vitamin K-dependent antagonist coagulopathy in patients with a history or suspicion of using synthetic cannabinoids. Patients may present with clinical signs of coagulopathy, bleeding unrelated to an injury, or bleeding without another explanation. Some patients may be asymptomatic or present with complaints unrelated to bleeding but have numerical coagulopathy. NOTE: Some patients may not divulge synthetic cannabinoids use.
2. Ask all patients about history of illicit drug use. All high-risk patients (e.g., those reporting synthetic cannabinoids use or those who are suspected of synthetic cannabinoids use within the last three months), regardless of their presentation, should be screened for vitamin K-dependent antagonist coagulopathy by checking their coagulation profile (e.g., INR).
3. Possible cases should be asked if they have recently donated plasma or blood (e.g., in the last three months). Clinicians treating possible cases who have recently donated plasma or blood should notify their state health department, who can then notify the FDA.
4. Proceduralists (e.g., trauma/general/orthopedic/oral/OB-GYN/cosmetic surgeons, dentists, interventional cardiologists/radiologists, and nephrologists) should be aware that patients with a history of using synthetic cannabinoids may be anti-coagulated without clinical signs of coagulopathy. These patients should be screened for vitamin K-dependent antagonist coagulopathy **prior** to their procedure.
5. Patients sent home from surgeries or other procedures that could result in bleeding should be told not to use synthetic cannabinoids because of the risk that the product may be contaminated with an anticoagulant.
6. Contact your local poison control center (1-800-222-1222) for questions on diagnostic testing and management of these patients.

Recommendations for the Public

1. CDC recommends that people do not use synthetic cannabinoids. Synthetic cannabinoids are always dangerous because it is impossible for people to know what chemicals are in the product, how much they are being exposed to, and how their body will react to the chemicals. The synthetic cannabinoid products associated with this outbreak are especially dangerous because they contain brodifacoum, a chemical used as rat poison that can cause uncontrolled bleeding.

2. People who have used synthetic cannabinoids in the past three months and are concerned about their health should contact their healthcare provider. Synthetic cannabinoids users who develop any unusual bruising or bleeding should seek medical attention immediately.

For More Information

- Synthetic cannabinoids: What are they? What are their effects? https://www.cdc.gov/nceh/hsb/chemicals/sc/default.html
- Synthetic cannabinoids: An Overview for Healthcare Providers https://www.cdc.gov/nceh/hsb/chemicals/sc/healthcare.html
- CDC Clinical Outreach and Communication Activity: Outbreak Alert Update: Potential Life-Threatening Vitamin K-Dependent Antagonist Coagulopathy Associated With Synthetic Cannabinoids Use. https://emergency.cdc.gov/coca/clinicalaction/2018/index.asp

References

1. Castaneto MS, Gorelick DA, Desrosiers NA, Hartman RL, Pirard S, Huestis MA. Synthetic cannabinoids: epidemiology, pharmacodynamics, and clinical implications. Drug Alcohol Depend 2014;144:12-41.
2. Gurney SM, Scott KS, Kacinko SL, Presley BC, and Logan BK. Pharmacology, toxicology, and adverse effects of synthetic cannabinoid drugs. Forensic Sci Rev 2014;26:53-78.
3. Tai S, Fantegrossi WE. Pharmacological and toxicological effects of synthetic cannabinoids and their metabolites. Curr Top Behav Neurosci 2017;32:249-262.
4. King N, Tran MH. Long acting anticoagulant rodenticide (superwarfarin) poisoning: A review of its historical development, epidemiology, and clinical management. Transfus Med Rev 2015;29:250-258.

The Centers for Disease Control and Prevention (CDC) protects people's health and safety by preventing and controlling diseases and injuries; enhances health decisions by providing credible information on critical health issues; and promotes healthy living through strong partnerships with local, national, and international organizations.

MISSISSIPPI STATE DEPARTMENT OF HEALTH

Alerting Message Specification Settings

Originating Agency:	Mississippi State Department of Health
Alerting Program:	MS Health Alert Network (MS HAN)
Message Identifier:	MSHAN-20180525-00410-ADV
Program (HAN) Type:	Health Advisory
Status (Type):	Actual ()
Message Type:	Alert
Reference:	MSHAN-00410
Severity:	Unknown
Acknowledgement:	No
Sensitive:	Not Sensitive
Message Expiration:	Undetermined
Urgency:	Undetermined
Delivery Time:	600 minutes

Definition of Alerting Vocabulary and Message Specification Settings

Originating Agency: A unique identifier for the agency originating the alert.

Alerting Program: The program sending the alert or engaging in alerts and communications using PHIN Communication and Alerting (PCA) as a vehicle for their delivery.

Message Identifier: A unique alert identifier that is generated upon alert activation (MSHAN-yyymmdd-hhmm-TTT (**ALT=Health Alert, ADV=Health Advisory, UPD=Health Update, MSG/INFO=Message/Info Service**).

Program (HAN) Type: Categories of Health Alert Messages**.**

Health Alert: Conveys the highest level of importance; warrants immediate action or attention.

Health Advisory: Provides important information for a specific incident or situation; may not require immediate action.

Health Update: Provides updated information regarding an incident or situation; unlikely to require immediate action.

Health Info Service: Provides Message / Notification of general public health information; unlikely to require immediate action.

Status (Type):

Actual:	Communication or alert refers to a live event
Exercise:	Designated recipients must respond to the communication or alert
Test:	Communication or alert is related to a technical, system test and should be disregarded

MISSISSIPPI STATE DEPARTMENT OF HEALTH

Message Type:

Alert:	Indicates an original Alert
Update:	Indicates prior alert has been Updated and/or superseded
Cancel:	Indicates prior alert has been cancelled
Error:	Indicates prior alert has been retracted

Reference: For a communication or alert with a Message Type of "Update" or "Cancel", this attribute contains the unique Message Identifier of the original communication or alert being updated or cancelled. "n/a" = Not Applicable.

Severity:

Extreme:	Extraordinary threat to life or property
Severe:	Significant threat to life or property
Moderate:	Possible threat to life or property
Minor:	Minimal threat to life or property
Unknown:	Unknown threat to life or property

Acknowledgement: Indicates whether an acknowledgement on the part of the recipient is required to confirm that the alert was received, and the timeframe in which a response is required (Yes or No).

Sensitive:

Sensitive:	Indicates the alert contains sensitive content
Not Sensitive:	Indicates non-sensitive content

Message Expiration: Undetermined.

Urgency: Undetermined. Responsive action should be taken immediately.

Delivery Time: Indicates the timeframe for delivery of the alert (15, 60, 1440, 4320 minutes (.25, 1, 24, 72 hours)).