ABSTRACTS IN URGENT CARE

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Each month the College of Urgent Care Medicine (CUCM) provides a handful of abstracts from or related to urgent care practices or practitioners. Glenn Harnett, MD leads this effort.

CDC Attributes 200+ Cases of Coagulopathy to Synthetic Cannabinoids

Key point: "Marijuana alternatives" are widely available—and being blamed for multiple deaths.

Citation: Moritz E, Austin C, Wahl M, et al. Notes from the field: outbreak of severe illness linked to the vitamin K antagonist brodifacoum and use of synthetic cannabinoids—Illinois, March–April 2018. *MMWR Morb Mortal Wkly Rep*. 2018;67:607–608.

The Centers for Disease Control and Prevention revealed that they have received more than 200 reported cases of coagulopathy linked to use of synthetic cannabinoids since the first case was reported in March 2018. Synthetic cannabinoids are known by a number of brand names including K2, Spice, Black Mamba, Bombay Blue, Genie, Krypton, Lava Red, and many more. They are often called *synthetic marijuana*, *natural herbs*, *herbal incense*, or *herbal smoking blends*. In 2017, 26 synthetic cannabinoids were listed as Schedule I substances under the Controlled Substances Act. However, they are often marketed as alternatives to marijuana or labeled as *not for human consumption*. They remain available for purchase, are relatively inexpensive, and are sometimes favored over marijuana because they are not detected in routine drug testing. The synthetic cannabinoid supply chain is unregulated, resulting in variable product compositions and new analogs are continually synthesized that get around regulatory restrictions. According to the CDC, 95 biological samples from the reported cases have tested positive for brodifacoum, which is a vitamin-K antagonist anticoagulant commonly used in rat poison. The CDC believes that brodifacoum was mixed with the synthetic cannabinoids, which puts users at high risk for coagulopathies. The majority of cases thus far have been reported in Illinois, with the remaining cases distributed across Florida, Indiana, Kentucky, Maryland, Missouri, Pennsylvania, Virginia, and Wisconsin. To date, there have been five deaths reported. The CDC recommends that clinicians be on high alert for vitamin K-dependent coagulopathy in any patients who report a history of synthetic cannabinoid use and reiterate that all patients should be routinely queried about recreational drug use. Bruising, nosebleeds, bleeding gums, bleeding disproportionate to injury, vomiting blood, coughing up blood, blood in urine or stool, or excessively heavy menstrual bleeding should lead to clinical suspicion of a coagulopathy. The CDC alert suggests that any patients who have used synthetic cannabinoids within the previous 3 months should undergo INR measurement, even in the absence of symptoms. An INR >2 can help identify potential cases. They also recommend that clinicians ask synthetic cannaboid users about any recent blood or plasma donations and report these donations to their state health department. ■

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New Study Reveals the Need for Better Follow-Up in mTBI

Key point: Postconcussion discharge instructions and follow-up care found lacking.

Citation: Seabury SA, Gaudette E, Goldman DP, et al. Assessment of follow-up care after emergency department presentation for mild traumatic brain injury and concussion:

results from the TRACK-TBI study. *JAMA Network Open*. 2018;1(1):e180210.

According to a study published in *JAMA Network Open*, most patients presenting to the emergency department with mild traumatic brain injury (mTBI) receive no follow-up care in the early weeks and months postinjury. This cohort study evaluated 830 patients age 17 and older who were diagnosed with mTBI after presenting to one of 11 Level I trauma centers in the U.S. between 2014 and 2016. Study data included patients with head trauma who underwent a computed tomography (CT) scan within 24 hours of injury, had a Glasgow Coma Scale score of 13 to 15, were aged 17 years or older, and completed follow-up care surveys at 2 weeks and 3 months after injury. Data revealed that only 42% of patients reported receiving educational material at discharge. The provision of educational material varied from 19% to 72% across sites. Additionally, only 44% reported seeing a physician or other medical practitioner within 3 months after injury, and follow-up calls from the hospital were extremely rare. Even when patients complained of three or more moderate to severe postconcussive symptoms, the follow-up rate was only 52%. Even in those patients with a positive finding on a CT scan, 39% had not seen a clinician for follow-up 3 months after the injury. Somewhat surprisingly, patient income and insurance status were not associated with receipt of follow-up care. Researchers also found that patients admitted to the hospital ward or ICU were no more likely to have received follow-up care than those discharged directly from the ED. A commentator to the publication called the findings "stunning" and noted that, "early education and symptom-based interventions may mitigate costly secondary comorbid issues, and they deserve further clinical and economic evaluation." These results clearly highlight the need for more rigorous and systematic follow-up for patients who experience TBI or concussion, including systems of care specifically designed to offer follow-up treatment to these patients. ■

An ACIP Reminder Regarding Proper Use of Zoster Vaccine

Key point: Zoster vaccine administration errors prompt CDC to remind clinicians of proper use.

Citation: Shimabukuro TT, Miller ER, Strikas RA, et al. Notes from the field: vaccine administration errors involving recombinant zoster vaccine—United States, 2017–2018. *MMWR Morb Mortal Wkly Rep*. 2018;67:585–586.

Recombinant zoster vaccine (RZV; Shingrix), licensed in October 2017, is preferentially recommended by the Advisory Committee on Immunization Practices (ACIP) over zoster vaccine live (ZVL; Zostavax), licensed in 2006. Also, ACIP recommends that persons previously vaccinated only with ZVL receive the full two-dose RZV intramuscular series, with the second dose given anytime from 2 to 6 months after the first. During the first 4 months of RZV monitoring following its approval, the Vaccine Adverse Event Reporting System received 155 reports involving RZV, 8% of which documented an administration error, including some reports documenting more than one error. Among these reports, nine involved RZV given by the subcutaneous (SQ) route rather than the IM route. RZV administered through the appropriate IM route is already associated with high rates of local and systemic reactions, and erroneous SQ injection can increase the likelihood of these episodes. Other errors included giving it to a person not eligible to receive the vaccine, administration of RZV after incorrect frozen storage, and failing to instruct patients to return for a second dose. Early monitoring also indicates that vaccine providers might be confusing storage requirements of the older ZVL and the newer RZV (which requires reconstitution). The authors conclude that, "To prevent RZV administration errors, vaccine providers should be aware of prescribing information, storage requirements, preparation guidelines, and ACIP recommendations for herpes zoster vaccines." ■

AI May Help Providers in Assessing Wrist Fracture

Key point: Artificial intelligence-based software for detection of wrist fractures approved by FDA.

Citation: FDA permits marketing of artificial intelligence algorithm for aiding providers in detecting wrist fractures. FDA News Release. May 24, 2018. Available at:www.fda.gov/NewsEvents/Newsroom/PressAnnouncements/ucm608833.htm. Accessed: June 11, 2018.

The FDA has approved a computer-aided detection and diagnostic software called OsteoDetect to speed the diagnosis of wrist fractures in adults. The software uses an artificial-intelligence algorithm to detect fractures in the distal radius by analyzing standard x-ray images and then marks the image for further review by a clinician. The FDA gave its approval after the company submitted the results of a retrospective study including 1,000 radiograph images. The study independently verified the artificial intelligence algorithm's ability to identify wrist fractures with similar accuracy against the performance of three board-certified orthopedic hand surgeons. In combination with a second retrospective study reviewing the performance of over 200 images and 24 providers who used the algorithm, the FDA determined that the software tool increased performance in regard to sensitivity, specificity, and positive and negative predictive values by a measurable degree as compared to the clinicians unaided performance. However, the FDA explicitly says the product "is an adjunct tool and is not intended to replace a clinician's review of the radiograph or his or her clinical judgment." The software simply marks the location of the fracture on the image and allows the radiologist or treating provider to decide on the

next steps. This marks the second FDA approval for artificial intelligence-based software following approval of a device to aid in the diagnosis of diabetic retinopathy in 2017. ■

New Preventive Migraine Treatment Approved by FDA

Key point: New option may help reduce monthly migraine days.

Citation: FDA approves novel preventive treatment for migraine. FDA News Release. May 17, 2018. Available at:www.fda.gov/NewsEvents/Newsroom/PressAnnouncements/ucm608120.htm. Accessed June 11, 2018.

The FDA has approved Aimovig, a once-monthly self-injection, for the preventive treatment of migraine in adults. Aimovig works by blocking the activity of calcitonin gene-related peptide, a molecule involved in migraine attacks. In its press release, Eric Bastings, MD, the deputy director of the Division of Neurology Products in the FDA's Center for Drug Evaluation and Research, stated, "Aimovig provides patients with a novel option for reducing the number of days with migraine. We need new treatments for this painful and often debilitating condition."

The effectiveness of Aimovig for the preventive treatment of migraine was evaluated in three clinical trials. The first study included 955 participants with a history of episodic migraine and compared Aimovig to placebo. Over the course of 6 months, Aimovig-treated patients experienced, on average, 1–2 fewer monthly migraine days than those on placebo. The second study included 577 patients with a history of episodic migraine and compared Aimovig with placebo. Over the course of 3 months, Aimovig-treated patients experienced, on average, 1 fewer migraine day per month than those on placebo. The third study evaluated 667 patients with a history of chronic migraine and also compared Aimovig to placebo. In that study, over the course of 3 months, patients treated with Aimovig experienced, on average, 2.5 fewer monthly migraine days than those receiving placebo. The most common side effects that patients in the clinical trials reported were injection-site reactions and constipation. ■

No Advantage in Broad-Spectrum Antibiotics for Bacterial RTI in Children

Key point: Narrow-spectrum antibiotics are as effective as broad-spectrum antibiotics in kids with acute bacterial respiratory infections.

Citation: Gerber JS, Ross RK, Bryan M, et al. Association of broad- vs narrow-spectrum antibiotics with treatment failure, adverse events, and quality of life in children with acute respiratory tract infections. *JAMA*. 2017;318(23):2325-2336.

A new study published in *JAMA* reveals that broad-spectrum antibiotics used increasingly for children with acute bacterial respiratory tract infections (otitis media, group A streptococcal pharyngitis, or sinusitis) are not more effective than narrow-spectrum antibiotics and can also lead to more adverse events. In a retrospective cohort study using electronic health record data, researchers identified 30,159 children aged 6 months to 12 years, who were diagnosed with acute bacterial respiratory tract infections and received prescriptions for oral antibiotics. About 15% were prescribed broad-spectrum antibiotics (eg, amoxicillin-clavulanate, cephalosporins), and the remainder were prescribed narrow-spectrum drugs (penicillin or amoxicillin). At 14 days, treatment with broad-spectrum vs narrow-spectrum antibiotics was not associated with treatment failure. However, adverse events necessitating clinical care were more common with broad-spectrum vs narrow-spectrum antibiotics (3.7% vs 2.7%). In a prospective cohort of 2,472 children, receipt of broad-spectrum vs narrow-spectrum antibiotics was associated with a slightly worse child quality of life and higher rates of adverse events (35.6% vs 25.1%, respectively). The authors concluded that, "These data support the use of narrow-spectrum antibiotics for most children with acute respiratory tract infections." ■

ACAAI Updates Guidelines on Seasonal Allergic Rhinitis

Key point: New guidelines on the treatment of seasonal allergic rhinitis in kids.

Citation: Dykewicz MS, Wallace DV, Baroody F, et al. Treatment of seasonal allergic rhinitis: an evidence-based focused 2017 guideline update. *Ann Allergy Asthma Immunol*. 2017; 119(6):489–511.e41.

The American College of Allergy, Asthma, and Immunology (ACAAI) has issued updated guidelines on the treatment of seasonal allergic rhinitis. The guidelines published in *Annals of Allergy, Asthma and Immunology* and recommendations published in the *Annals of Internal Medicine* include:

- In patients 12 years or older, clinicians should routinely prescribe intranasal corticosteroid monotherapy rather than a combination of oral antihistamine + intranasal corticosteroid. Based on the studies analyzed, there was no statistically significant superiority for the combination for any of the outcomes.
- Clinicians should recommend an intranasal corticosteroid over a leukotriene receptor antagonist for patients 15 years or older. Based on the studies analyzed, intranasal corticosteroids have a greater clinical benefit over montelukast with regard to nasal symptom reduction.
- For patients 12 years or older with moderate to severe symptoms, the combination of intranasal corticosteroid + intranasal antihistamine may be recommended, as there is a statistically significant clinical benefit with regard to total nasal symptom reduction when using this combination. However, they also noted the potential for increased adverse events when using combination therapy.

The guideline encourages physicians to make patients aware that taking two medications, eg, using a combination of drugs, such as an oral antihistamine and an intranasal corticosteroid, is not always better than using a single drug such as an intranasal corticosteroid. ■

ACS: Colorectal Cancer Screening Should Begin at Age 45, not 50

Key point: The American Cancer Society (ACS) now recommends colorectal cancer screening begin at age 45.

Citation: Wolf AMD, Fontham ETH, Church TR, et al. Colorectal cancer screening for average risk adults: 2018 guideline update from the American Cancer Society. *CA Cancer J Clin*. May 30, 2018. [Epub ahead of print]

The American Cancer Society now recommends that colorectal cancer screening should begin at age 45 for average-risk adults. The recommendations were published in *CA: A Cancer Journal for Clinicians*. This is in contrast to other groups who generally recommend screening begin at age 50. The new guidelines are based on a more recent review of colorectal cancer studies that also included microsimulation modeling. Researchers say the change is due to increasing colorectal cancer rates among younger adults, but the ACS says it's a "qualified recommendation" due to limited data on adults in their 40s. Based on patient preference and test availability, a high-sensitivity stool-based test or a structural exam can be performed first, with positive results then followed up with a colonoscopy. Due to more widely available data on adults in their 50s, the ACS is able to strongly recommend regular colorectal screening begin at age 50. Regular screening is recommended until age 75 for those at average risk who also have a life expectancy of more than 10 years. They recommend that clinicians should individualize the decision to screen in adults age 76 to 85 and they discourage screening for those aged 86 or older. Researchers expressed hope that the new recommendation to begin screening at age 45 will stimulate research to further assess the effectiveness, harms, and impact of screening on colorectal cancer incidence and mortality in younger individuals. It is not yet clear how other professional organizations and insurance providers will address the new guidance. ■