AACT Herbal Dietary Supplement Section Abstracts January 2020

1. Presence of Piracetam in Cognitive Enhancement Dietary Supplements. Cohen PA, Zakharevich I, Gerona R.

JAMA Intern Med. 2019 Nov 25. doi: 10.1001/jamainternmed.2019.5507. [Epub ahead of print]

DOI: 10.1001/jamainternmed.2019.5507
PMCID: PMC6902196 [Available on 2020-11-25]
PMID: 31764936

2. Arrhythmogenic foods - A growing medical problem. Woosley RL.

Trends Cardiovasc Med. 2019 Aug 24. pii: S1050-1738(19)30116-1. doi: 10.1016/j.tcm.2019.08.007. [Epub ahead of print]

Arrhythmogenic ingredients in our diet such as mushrooms, licorice, toxic honey, liquid protein drinks, etc. have long been recognized as rare but important considerations in the differential diagnosis of arrhythmias. Anecdotal reports of torsades de pointes (TdP), arrhythmias and/or sudden death and small studies in normal subjects have suggested that simple ingredients such as grapefruit juice or ingredients in energy drinks marketed as dietary supplements could have direct arrhythmogenic actions, especially in patients with congenital long QT syndrome (cLQTS). Two recent studies that employed the industry-standard "thorough QT" trial design leave no doubt that grapefruit juice and some energy drinks can prolong the QTc interval and to exceed 500 msec. in some patients with cLQTS, a threshold known to signal imminent danger. These reports raise numerous clinically important questions such as which other patients may be at risk of arrhythmias. For example, patients with multiple clinical risk factors for TdP (hypokalemia, bradycardia, female sex, etc.) may be at risk from these and possibly other dietary ingredients ingested by millions of people each day. It is essential that further research evaluate the safety of these and similar food products and that vulnerable patients, especially those with cLQTS, be warned of this serious and emerging threat.

DOI: 10.1016/j.tcm.2019.08.007
PMID: 31477495

3. Oleander poisoning: an old toxic in the modern era. Montrucchio G, Bosso S, Scanu M, Mina A, Imeneo MR, Brazzi L.

Minerva Anestesiol. 2019 Dec 6. doi: 10.23736/S0375-9393.19.14066-7. [Epub ahead of print]

DOI: 10.23736/S0375-9393.19.14066-7
PMID: 31818086

4. Cardiac arrhythmias, electrolyte abnormalities and serum cardiac glycoside concentrations in yellow oleander (Cascabela thevetia) poisoning - a prospective study. D A, Pandit VR, Kadhiravan T, R S, Prakash Raju KNJ.

Clin Toxicol (Phila). 2019 Feb;57(2):104-111. doi: 10.1080/15563650.2018.1499930. Epub 2018 Aug 3.

BACKGROUND: Consumption of yellow oleander (Cascabela thevetia) is a popular method of intentional self-harm in South India. OBJECTIVES: The objectives of this study were to identify the cardiac arrhythmias and electrolyte abnormalities in yellow oleander poisoning and to identify the association between electrolyte abnormalities, cardiac glycoside concentrations at admission and the severity of cardiotoxicity. This study was also designed to identify clinical and biochemical parameters at presentation which predict serious arrhythmias and determinants of mortality. MATERIALS AND METHODS: This was a prospective study among 192 patients who attended our Emergency department after consuming yellow oleander seeds. Patients were monitored with serial ECGs. Serious cardiac arrhythmias included sinus bradycardia <40/min, sinus arrest/exit block, second or third degree AV block, atrial tachyarrhythmias and ventricular tachyarrhythmias. Serum sodium, potassium, magnesium, total calcium and cardiac glycoside concentrations were measured at presentation for all 192 patients. Serial estimation of cardiac glycoside concentration was done in 43 patients who presented within 24 hours of consuming at least five seeds. RESULTS: At presentation, 46 patients had serious arrhythmias and on follow-up, 11 developed new-onset serious arrhythmia. Sinus bradycardia (27%) was the most common arrhythmia followed by second-degree AV block (17%); multiple arrhythmias were observed in 18%. Digoxin effect in ECG correlated significantly with hyperkalemia. Mortality rate was 5%. Serum sodium, total calcium and magnesium levels did not correlate with cardiotoxicity. Cardiac glycoside concentration was of relatively modest clinical utility to discriminate patients with serious dysrhythmias (AUC: 0.719, 95% CI: 0.63-0.81). Prolonged PR interval and digoxin effect in ECG were significantly associated with an increased likelihood of serious dysrhythmias. Increase in 0.4 number of seed intake increased the odds of mortality by 1.5 times when all other independent variables were kept constant. CONCLUSION: Cardiac glycoside concentration at the time of presentation predicted the development of new-onset serious arrhythmias. Although serum potassium correlated significantly with cardiac glycoside concentration at admission and overall serious dysrhythmias, it did not predict the development of new-onset serious arrhythmia. On the whole, serious dysrhythmias were significantly associated with higher number of seeds ingested, hypotension at admission, PR interval prolongation, presence of digoxin effect in ECG, hyperkalemia and higher cardiac glycoside concentration. The independent determinants of mortality were larger number of seeds ingested and hypotension at admission. Cardiac glycoside concentration and hyperkalemia failed to be independent markers of serious dysrhythmias as well as mortality.

DOI: 10.1080/15563650.2018.1499930
PMID: 30073854 [Indexed for MEDLINE]

5. ECG changes in acute aconite poisoning. Jacobs CO, Haydock S.

QJM. 2019 Mar 1;112(3):227. doi: 10.1093/qjmed/hcy220.

DOI: 10.1093/qjmed/hcy220
PMID: 30295860 [Indexed for MEDLINE]

6. Quantitative analysis of aconitine in body fluids in a case of aconitine poisoning. Cho YS, Choi HW, Chun BJ, Moon JM, Na JY.

Forensic Sci Med Pathol. 2019 Dec 4. doi: 10.1007/s12024-019-00211-5. [Epub ahead of print]

Aconitine belongs to the Aconitum alkaloids and is a natural toxic substance. Aconitine has been used as a traditional medicine in East Asian culture. Today, aconitine is still in use with or without a prescription, in the Republic of Korea. Here we present a case report of accidental death due to acute aconitine poisoning. An 81-year-old woman ingested liquid that had been heat extracted from the root of the Aconitum plant; she presented to the emergency room 1 h after ingestion. Her electrocardiogram showed irregular ventricular arrhythmias including ventricular tachycardia; she progressed to cardiac arrest. Cardiopulmonary resuscitation and anti-arrhythmic drugs were administered, but the patient did not survive. An autopsy was performed 2 days postmortem. Toxicological analysis was performed, and

aconitine was detected by liquid chromatography tandem mass spectrometry. The antemortem blood concentration of aconitine was 39.1 ng/ml and the concentrations of aconitine in the postmortem cardiac blood, peripheral blood, cerebrospinal fluid (CSF), pericardial fluid, and urine were 21.1 ng/ml, 28.6 ng/ml, 6.8 ng/ml, 24.1 ng/ml, and 67.4 ng/ml, respectively. This is the first forensic case report of an aconitine poisoning death in the Republic of Korea with quantitative measurement of aconitine in the antemortem blood and various postmortem body fluids. To the best of our knowledge, this is the first report of the detection of aconitine in the CSF. These data about the distribution of aconitine in the antemortem blood and various postmortem body fluids is helpful for future aconitine poisoning death cases.

DOI: 10.1007/s12024-019-00211-5
PMID: 31802365

7. A health risk for consumers: the presence of adulterated food supplements in the Netherlands. Biesterbos JWH, Sijm DTHM, van Dam R, Mol HGJ.

Food Addit Contam Part A Chem Anal Control Expo Risk Assess. 2019 Sep;36(9):1273-1288. doi: 10.1080/19440049.2019.1633020. Epub 2019 Jul 11.

The use of food supplements is increasing. They are marketed as beneficial for health, well-being, physical or mental condition and performance, or to prevent diseases. Producers add synthetic compounds or illicit herbal material to food supplements to claim desired effects. Claims made to support marketing without scientific evidence are, however, illegal. Intake of adulterated food supplements may lead to serious adverse effects. The aim of this paper is to report the results of analyses of (adulterated) food supplements conducted by the Netherlands Food and Consumer Product Safety Authority between October 2013 and October 2018. In total, 416 supplements were analysed of which 264 (64%) contained one or more pharmacological active substances or plant toxins, such as caffeine, synephrine, sildenafil, icariin, sibutramine, higenamine, hordenine, phenethylamine, methylsynephrine, DMAA, phenolphthalein, octopamine and ephedrine. When compared to dose levels that are considered safe, daily doses of the substances in the food supplements were sometimes much higher, causing a risk for consumers who are unaware of the presence of these pharmacologically active substances. In many cases, neither food nor medicines legislation (easily) enables enforcement actions. This means that some products containing pharmacologically active substances (i.e. synthetic medicines and their illicit analogues), stay available on the market. An undesirable situation because for many of these substances no detailed toxicity data are available.

DOI: 10.1080/19440049.2019.1633020
PMID: 31294678 [Indexed for MEDLINE]

8. Paradoxical Patterns of Sinusoidal Obstruction Syndrome-Like Liver Injury in Aged Female CD-1 Mice Triggered by Cannabidiol-Rich Cannabis Extract and Acetaminophen Co-Administration. Ewing LE, McGill MR, Yee EU, Quick CM, et. al.

The goal of this study was to investigate the potential for a cannabidiol-rich cannabis extract (CRCE) to interact with the most common over-the-counter drug and the major known cause of drug-induced liver injury-acetaminophen (APAP)-in aged female CD-1 mice. Gavaging mice with 116 mg/kg of cannabidiol (CBD) [mouse equivalent dose (MED) of 10 mg/kg of CBD] in CRCE delivered with sesame oil for three consecutive days followed by intraperitoneally (i.p.) acetaminophen (APAP) administration (400 mg/kg) on day 4 resulted in overt toxicity with 37.5% mortality. No mortality was observed in mice treated with 290 mg/kg of CBD+APAP (MED of 25 mg/kg of CBD) or APAP alone. Following CRCE/APAP co-administration, microscopic examination revealed a sinusoidal obstruction syndrome-like liver injury-the severity of which correlated with the degree of alterations in physiological and clinical biochemistry end points. Mechanistically, glutathione depletion and oxidative stress were observed between the APAP-only and co-administration groups, but co-administration resulted in much greater

activation of c-Jun N-terminal kinase (JNK). Strikingly, these effects were not observed in mice gavaged with 290 mg/kg CBD in CRCE followed by APAP administration. These findings highlight the potential for CBD/drug interactions, and reveal an interesting paradoxical effect of CBD/APAP-induced hepatotoxicity.

DOI: 10.3390/molecules24122256
PMCID: PMC6630875
PMID: 31212965 [Indexed for MEDLINE]

9. A Warning against the Negligent Use of Cannabidiol in Professional and Amateur Athletes. Lachenmeier DW, Diel P.

Sports (Basel). 2019 Dec 14;7(12). pii: E251. doi: 10.3390/sports7120251.

Cannabidiol (CBD) is a non-psychoactive cannabinoid, widely marketed to athletes for claimed effects such as decreased anxiety, fear memory extinction, anti-inflammatory properties, relief of pain and for post-exercise recovery. The World Anti-Doping Agency (WADA) has excluded CBD from its list of prohibited substances. Nevertheless, caution is currently advised for athletes intending to use the compound-except CBD, all other cannabinoids are still on the prohibited list. CBD products, specifically non-medicinal, so-called full-spectrum cannabis extracts, may contain significant levels of these substances, but also contaminations of tetrahydrocannabinol (THC) (>2.5 mg/day in >30% of products on the German market) potentially leading to positive doping tests. Labelled claims about CBD content and absence of THC are often false and misleading. Contaminations with the psychoactive THC can result in adverse effects on cognition and, in general, the safety profile of CBD with respect to its toxicity is a controversial topic of discussion. For these reasons, we would currently advise against the use of over-the-counter CBD products, especially those from dubious internet sources without quality control.

DOI: 10.3390/sports7120251
PMID: 31847307

10. Self-reported prevalence and severity of opioid and kratom (Mitragyna speciosa korth.) side effects. Saref A, Suraya S, Singh D, Grundmann O, Narayanan S, Swogger MT, Prozialeck WC, Boyer E, Chear NJY, Balasingam V.

J Ethnopharmacol. 2019 Jun 28;238:111876. doi: 10.1016/j.jep.2019.111876. Epub 2019 Apr 20.

ETHNOPHARMACOLOGICAL RELEVANCE: Mitragyna speciosa (Korth.) is a traditional medicinal plant widely used in Southeast Asia for its opioid-like effects. Although kratom produces analgesia through binding of mitragynine and other alkaloids at the mu-opioid receptor (MOR), the association of long-term kratom use with adverse opioid-like effects remains unknown. AIM OF THE STUDY: To determine the self-reported prevalence and severity of opioid-related adverse effects after kratom initiation in a cohort of illicit opioid users. MATERIALS AND METHODS: A total of 163 illicit opioid users with current kratom use history were recruited through convenience sampling from the northern states of Peninsular Malaysia. Face-to-face interviews were conducted using a semi-structured questionnaire. RESULTS: Respondents were all males, majority Malays (94%, n = 154/163), with a mean age of 37.10 years (SD = 10.9). Most were single (65%, n = 106/163), had 11 years of education (52%, n = 85/163) and employed (88%, n = 144/163). Half reported using kratom for over >6 years (50%, n = 81/163), and 41% consumed >3 glasses of kratom daily (n = 67/163). Results from Chi-square analysis showed kratom initiation was associated with decreased prevalence of respiratory depression, constipation, physical pain, insomnia, depression, loss of appetite, craving, decreased sexual performance, weight loss and fatigue. CONCLUSIONS: Our findings indicate that kratom initiation (approximately 214.29 mg of mitragynine) was associated with significant decreases in the prevalence and severity of opioid adverse effects.

DOI: 10.1016/j.jep.2019.111876
PMID: 31014959 [Indexed for MEDLINE]

11. Critique of "Kratom Use and Toxicities in the United States". Grundmann O, Brown PN, Boyer EW, Swogger MT, Walsh Z, Prozialeck W, Kruegel AC, Veltri CA, Dudley S.

Pharmacotherapy. 2019 Nov;39(11):1119-1120. doi: 10.1002/phar.2336.

DOI: 10.1002/phar.2336
PMID: 31729073

12. Fatality of 33-Year-Old Man Involving Kratom Toxicity. Matson M, Schenk N.

J Forensic Sci. 2019 Nov;64(6):1933-1935. doi: 10.1111/1556-4029.14082. Epub 2019 May 23.

Kratom is an herbal product commonly used for its effects which are similar to opioids and stimulants. Few studies demonstrate the dangers and lethality of Kratom, and most fatalities from Kratom involve other abused substances. In the current case report, a 33-year-old white man with a known history of opioid abuse and mental illnesses was found unresponsive in his basement with no obvious signs of trauma. After resuscitative efforts, he was pronounced dead and taken for autopsy evaluation. Blood from the inferior vena cava was analyzed for common abused substances. The laboratory toxicology work-up revealed positive findings of caffeine, cotinine, and naloxone with low levels of Δ-9 tetrahydrocannabinol. However, a marked level of mitragynine at 1.9 mg/L was observed, the highest reported to date. Given the facts and evidence, the medical examiner certified the cause of death as "mitragynine toxicity" and the manner of death was classified as an "accident."

DOI: 10.1111/1556-4029.14082
PMID: 31121058 [Indexed for MEDLINE]

13. Herb-Induced Liver Injury With Cholestasis and Renal Injury Secondary to Short-Term Use of Kratom (Mitragyna speciosa). Antony A(1), Lee TP.

Am J Ther. 2019 Jul/Aug;26(4):e546-e547. doi: 10.1097/MJT.0000000000000802.

DOI: 10.1097/MJT.0000000000000802
PMID: 29927773 [Indexed for MEDLINE]

14. Danger of Herbal Tea: A Case of Acute Cholestatic Hepatitis Due to Artemisia annua Tea. Ruperti-Repilado FJ, Haefliger S, Rehm S, Zweier M, Rentsch KM,Blum J, Jetter A, Heim M, Leuppi-Taegtmeyer A, Terracciano L, Bernsmeier C.

Front Med (Lausanne). 2019 Oct 11;6:221. doi: 10.3389/fmed.2019.00221. eCollection 2019.

Background: Artemisia annua is a Chinese medicinal herb. Artemisinin-derivatives are recommended as part of a combination treatment for uncomplicated malaria. Herbal and dietary supplements (HDS) are increasingly used worldwide and HDS-induced liver injury is becoming a growing concern. Case Report: We present the first case of severe acute cholestatic hepatitis due to the intake of Artemisia annua tea as chemoprophylaxis for malaria in a patient returning from Ethiopia. The patients presented with jaundice, elevated transaminases, and parameters of cholestasis (total bilirubin 186.6 μmol/L, conjugated bilirubin 168.5 μmol/L). A liver biopsy showed a portal hepatitis with lymphocytic infiltration of the bile ducts and diffuse intra-canalicular and intra-cytoplasmic bilirubinostasis. The toxicologic analysis of the Artemisia tea revealed the ingredients arteannuin b, deoxyartemisin, campher, and scopoletin. There were no other identifiable etiologies of liver disease. The Roussel Uclaf Causality Assessment Method (RUCAM) score assessed a "probably" causal relationship. Sequencing of genes encoding for hepatic transporters for bile

acid homeostasis (BSEP, MDR3, and FIC1) found no genetic variants typically associated with hereditary cholestasis syndromes. Normalization of bilirubin occurred 3 months after the onset of disease. Conclusion: The use of artemisinin-derivatives for malaria prevention is ineffective and potentially harmful and should thus be discouraged. Moreover, the case demonstrates our as yet inadequate understanding of the pathophysiology and susceptibility to HDS induced liver injury.

DOI: 10.3389/fmed.2019.00221
PMCID: PMC6798169
PMID: 31681778

15. Drug Induced Liver Injury Attributed to a Curcumin Supplement. Imam Z, Khasawneh M, Jomaa D, Iftikhar H, Sayedahmad Z.

Case Rep Gastrointest Med. 2019 Oct 20;2019:6029403. doi: 10.1155/2019/6029403. eCollection 2019.

More severe reactions, higher acute liver failure rates, and higher recurrence rates on re-challenge occur with supplement-related Drug Induced Liver Injury (DILI) (Medina-Caliz et al., 2018). We report a case of curcumin-induced hepatocellular DILI in a 78-year old female admitted with jaundice, with a one-month latency. Extensive evaluation for alternative etiologies of hepatotoxicity was unremarkable. The Roussel Uclaf Causality Assessment Method (RUCAM) score of 6 for the supplement indicated a probable association (score >8: highly probable association). Peak levels of aspartate aminotransferase (AST) and alanine aminotransferase (ALT) were >20 times upper limit of normal. A 48% decrease in AST and ALT levels was observed 7 days after discontinuation of the supplement, and resolution of transaminitis was observed in 42 days. No re-challenge was performed. In conclusion, this case emphasizes the importance of recognizing curcumin supplements as DILI triggers. Furthermore, it reiterates the need for careful evaluation of herbal and dietary supplements (HDS) consumed by patients to identify potential DILI culprits, and to ultimately prevent DILI reactions with significant morbidity and mortality.

DOI: 10.1155/2019/6029403
PMCID: PMC6855017
PMID: 31781418

16. Hepatotoxicity associated with Garcinia cambogia: A case report. Yousaf MN, Chaudhary FS, Hodanazari SM, Sittambalam CD.

World J Hepatol. 2019 Nov 27;11(11):735-742. doi: 10.4254/wjh.v11.i11.735.

BACKGROUND: Herbal supplements (HS) for weight loss are perceived to be “safe" and "natural", as advertised in ads, however, hepatotoxicity can be associated with consumption of some HS. Use of HS may be missed, as the patient may not report these unless specifically asked about these products, since they are often not thought of as medications with potential side effects or interaction potential. CASE SUMMARY: We reported a case of a 21-year-old female with morbid obesity who presented with abdominal pain for 1 wk associated with nausea, vomiting, anorexia and myalgias. She denied smoking tobacco, drinking alcohol, usage of illicit drugs, hormonal contraceptives, or energy drinks. There was no significant past medical or family illnesses. Her laboratory workup revealed acute liver failure. The workup for possible etiologies of acute liver failure was unremarkable. She was using a weight loss herbal supplement "Garcinia cambogia" for 4 wks. This case demonstrates the association of acute liver failure with Garcinia cambogia. CONCLUSION: Medical reconciliation of HS should be performed in patients with suspected acute liver failure and early discontinuation of HS can prevent further progression of drug induced hepatoxicity.

DOI: 10.4254/wjh.v11.i11.735
PMCID: PMC6856022

PMID: 31772720

17. Drug-induced Liver Injury Secondary to Herbal and Dietary Supplements. Zheng E, Sandhu N, Navarro V.

Clin Liver Dis. 2020 Feb;24(1):141-155. doi: 10.1016/j.cld.2019.09.009. Epub 2019 Oct 31.

The use of herbal and dietary supplements (HDS) is increasing in the United States and worldwide. Its significant association with liver injury has become a concern, particularly because rates of hepatotoxicity caused by HDS are increasing. There are variety of HDS available, ranging from multi-ingredient substances, to anabolic steroids for bodybuilding purposes, to individual ingredients for purposes of supplementing a diet. This article reviews the impact of liver injury cause by HDS and explores the hepatotoxic potential of such products and their individual ingredients.

DOI: 10.1016/j.cld.2019.09.009
PMID: 31753247

18. Acute Hepatitis Secondary to the Use of Ilex paraguariensis (Mate Tea): A Case Report and Review of Literature. Rodriguez EA, Teixeira Yokoda R, Payton DE, Pai R, Byrne TJ.

Case Reports Hepatol. 2019 Oct 13;2019:8459205. doi: 10.1155/2019/8459205. eCollection 2019.

Drug induced liver injury is a very frequent cause of hepatotoxicity and within that group, herbal and dietary supplements are a well described subcategory. The following clinical vignette describes the case of a young man with acute hepatitis secondary to the use of Ilex paraguariensis, also known as yerba mate, which is a herbal product commonly drunk in South America. This is the first written case of mate tea induced hepatotoxicity.

DOI: 10.1155/2019/8459205
PMCID: PMC6815554
PMID: 31737383

19. Trends in use, pharmacology and clinical applications of emerging herbal nutraceuticals. Williamson EM, Liu X, Izzo AA.

Br J Pharmacol. 2019 Dec 4. doi: 10.1111/bph.14943. [Epub ahead of print]

The nutraceuticals market is vast and amorphous, encompassing many different types of products from a wide range of sources, with inconsistent levels of evidence available to support their use. This overview represents a mainly Western perspective of trends in the nutraceuticals market, with a brief comparison of the situation in China, as an illustration of how individual health supplements increase and decrease in popularity in regional terms. Recent changes in sales patterns, mainly taken from the US market, are summarised, and a selection of 5 newer products which have not been subject to extensive recent review are profiled: Astaxanthin, a carotenoid found in red algae and seafood, salmon, and trout, as an antioxidant; Cannabidiol, a non-euphoric marijuana component, as mood enhancer and for painful/ inflammatory conditions; Ginseng modified extracts for new indications including dementia and space travel support; Monk fruit, a non-sugar high intensity sweetener, and Nigella seed, a popular food ingredient and Asian medicine which has experienced an extraordinary rise in sales recently.

DOI: 10.1111/bph.14943
PMID: 31799702

20. Herbal Interaction With Chemotherapeutic Drugs-A Focus on Clinically Significant Findings. Fasinu PS, Rapp GK.

Front Oncol. 2019 Dec 3;9:1356. doi: 10.3389/fonc.2019.01356. eCollection 2019.

One of the most consequential risks associated with the concomitant use of herbal products and chemotherapeutic agents is herb-drug interactions. The risk is higher in patients with chronic conditions taking multiple medications. Herb-drug interaction is particularly undesirable in cancer management because of the precipitous dose-effect relationship and toxicity of chemotherapeutic agents. The most common mechanism of herb-drug interaction is the herbal-mediated inhibition and/or induction of drug-metabolizing enzymes (DME) and/or transport proteins leading to the alteration in the pharmacokinetic disposition of the victim drug. Most mechanistic research has focused on laboratory-based studies, determining the effects of herbal products on DMEs and extrapolating findings to predict clinical relevance; however, not all DME/transporter protein inhibition/induction results in clinical herb-drug interaction. This study reviews relevant literature and identified six herbal products namely echinacea, garlic, ginseng, grapefruit juice, milk thistle, and St John's wort, which have shown interactions with chemotherapeutic agents in humans. This focus on clinically significant herb-drug interaction, should be of interest to the public including practitioners, researchers, and consumers of cancer chemotherapy.

DOI: 10.3389/fonc.2019.01356
PMCID: PMC6901834
PMID: 31850232

21. A Review of Cannabis and Interactions With Anticoagulant and Antiplatelet Agents. Greger J, Bates V, Mechtler L, Gengo F.

J Clin Pharmacol. 2019 Nov 13. doi: 10.1002/jcph.1557. [Epub ahead of print]

Legalization of medical cannabis has occurred in 33 states and the District of Columbia, and recreational use has increased exponentially since 2013. As a result, it is important to understand how cannabis interacts with other drugs and has potential risks for patients on concomitant medications. Components of medical cannabis can inhibit or compete for several cytochrome P450 (CYP) hepatic isoenzymes, UDP-glucuronosyltransferases, and P glycoprotein. These enzymes and transporters are involved in the metabolism and absorption of numerous medications, including anticoagulants (ACs) and antiplatelet agents (APs),
potentially causing harmful drug-drug interactions. ACs and/or APs are often prescribed to high-risk patients with cardiac conditions, a history of myocardial infarction, or stroke. Cannabis may cause these medications to be less efficacious and put patients at risk for recurrent cardiovascular and cerebrovascular events. Several case reports show cannabis may inhibit the metabolism of warfarin because of CYP2C9 interactions, resulting in increased
plasma concentrations, increased international normalized ratio , and risk of bleeding. Cannabidiol inhibits CYP2C19, an isoenzyme responsible for the transformation of clopidogrel to its active thiol metabolite. This interaction could lead to subtherapeutic levels of active metabolite and possibly increased stroke risk. Within this review, a total of 665 articles were screened from PubMed and EMBASE. Four case reports, 1 in vitro study, and 1 pharmacokinetic article were found to be of relevance. This review serves to examine reported and potential cannabis interactions with APs/ACs to help inform patients and health care providers of possible risks and knowledge gaps.

DOI: 10.1002/jcph.1557
PMID: 31724188

22. Nutmeg poisoning: Ten years (2008-2018) of experience from the Marseille Poison Control Center. Reynoard J, Torrents R, Domange B, Glaizal M, de Haro L, Simon N.

Presse Med. 2019 Sep;48(9):994-996. doi: 10.1016/j.lpm.2019.08.016. Epub 2019 Sep 19.

DOI: 10.1016/j.lpm.2019.08.016
PMID: 31543391 [Indexed for MEDLINE]

23. Decompensation of adrenal insufficiency associated with birch juice use as stated by the manufacturer information leaflet: A case report. Fokoun C, Labeye V, Puzenat E, Atzenhoffer M, Sigal A, Charpiat B.

Therapie. 2019 Jun;74(3):437-440. doi: 10.1016/j.therap.2018.06.005. Epub 2018 Aug 2.

DOI: 10.1016/j.therap.2018.06.005
PMID: 30197230 [Indexed for MEDLINE]

24. Dietary Supplement Use among Infants and Toddlers Aged <24 Months in the United States, NHANES 2007-2014. Gahche JJ, Herrick KA, Potischman N, Bailey RL, Ahluwalia N, Dwyer JT.

J Nutr. 2019 Feb 1;149(2):314-322. doi: 10.1093/jn/nxy269.

BACKGROUND: Limited nationally representative data are available on dietary supplement (DS) use and resulting nutrient exposures among infants and toddlers. OBJECTIVE: This study evaluated DS use among US infants and toddlers to characterize DS use, estimate nutrient intake from DSs, and assess trends in DS use over time. METHODS: Using nationally representative data from NHANES (2007-2014) and trends over time (1999-2014), we estimated prevalence of DS use and types of products used for US infants and toddlers aged <2 y (n = 2823). We estimated median daily intakes of vitamins and minerals consumed via DSs for all participants aged <2 y, by age groups (0-11.9 mo and 12.0-23.9 mo), and by feeding practices for infants 0-5.9 mo. RESULTS: Overall, 18.2% (95% CI: 16.2%, 20.3%) of infants and toddlers used ≥1 DS in the past 30 d. Use was lower among infants (0-5.9 mo: 14.6%; 95% CI: 11.5%, 18.1%; 6-11.9 mo: 11.6%; 95% CI: 8.8%, 15.0%) than among toddlers (12-23.9 mo: 23.3%; 95% CI: 20.4%, 26.3%). The most commonly reported DSs were vitamin D and multivitamin infant drops for those <12 mo, and chewable multivitamin products for toddlers (12-23.9 mo). The nutrients most frequently consumed from DSs were vitamins D, A, C, and E for those <2 y; for infants <6 mo, a higher percentage of those fed breast milk than those fed formula consumed these nutrients via DSs. DS use remained steady for infants (6-11.9 mo) and toddlers from 1999-2002 to 2011-2014, but increased from 7% to 20% for infants aged 0-5.9 mo. CONCLUSIONS: One in 5 infants and toddlers aged <2 y use ≥1 DS. Future studies should examine total nutrient intake from foods, beverages, and DSs to evaluate nutrient adequacy overall and by nutrient source.

DOI: 10.1093/jn/nxy269
PMCID: PMC6551282 [Available on 2020-02-01]
PMID: 30753556 [Indexed for MEDLINE]