

Selected Topics: Toxicology



CANNABIS HYPEREMESIS SYNDROME IN THE EMERGENCY DEPARTMENT: HOW CAN A SPECIALIZED ADDICTION TEAM BE USEFUL? A PILOT STUDY

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Abstract—Background: Chronic cannabis users may experience cyclical episodes of nausea and vomiting and learned behavior of hot bathing. This clinical condition, known as cannabis hyperemesis syndrome, was first reported in 2004. **Objective:** Our aim was to promote early recognition of this syndrome in emergency departments (EDs) and to increase referral to addiction specialists. **Methods:** Cannabis abusers were admitted to the ED for vomiting or abdominal pain from June 1, 2014 to January 1, 2015 and diagnosed with cannabis hyperemesis syndrome by a specialized addiction team. Then, medical records were examined retrospectively. **Results:** Seven young adults were included. Their mean age was 24.7 years (range 17–39 years) and the majority were men (male-to-female ratio 1.2). Biological and toxicological blood samples were taken in all patients. Tetrahydrocannabinol blood level was measured in 4 patients, with a mean blood concentration of 11.6 ng/mL. Radiographic examination including abdominal computed tomography and brain imaging were negative, as was upper endoscopy. Five patients compulsively took hot baths in an attempt to decrease the symptoms. Treatment was symptomatic. Five patients have started follow-up with the specialized addiction team. **Conclusions:** Cannabis hyperemesis syndrome is still under-diagnosed 10 years after it was first described. Physicians should be aware of this syndrome to avoid repeated hospitalizations or esophageal complications. Greater awareness

should lead to prompt treatment and prevention of future recurrence through cannabis cessation. Addiction specialists, as well as medical toxicologists, are experts in the management of cannabis abusers and can help re-establish the role of medical care in this population in collaboration with emergency physicians. © 2016 Elsevier Inc. All rights reserved.

Keywords—cannabis abuse; hyperemesis; emergency; addiction-consultation liaison

INTRODUCTION

Emergency physicians (EPs) are confronted daily with patients admitted to the emergency department (ED) because of intoxication, and they are well placed to routinely offer detoxification (1). In addition, patients with substance abuse disorders (SUDs) can benefit from screening, advice, and education while they are observed for detoxification in the ED, especially because they are not in contact with primary care (2,3). We decided to implement a specialized addiction team (SAT) inside the ED, consisting of two physicians working one every other day who supervise two nurses especially skilled in SUDs. The SAT provides assistance to the EP

dealing with these patients and helps refer dependent patients on to community care after discharge from ED. That model of consultation-liaison team inside the ED has recently evolved to dealing with patients with alcohol use disorder and with psychiatric disorders (4,5). The SAT facilitates increased connections with EP colleagues and advises them about SUDs.

A specific entity among chronic cannabis users known as cannabinoid hyperemesis syndrome (CHS) was first reported in 2004 by Allen et al. in which 19 chronic cannabis users presented with a cyclical vomiting-like illness (6). In 2009, Sontineni et al. described important clinical features of CHS, which included chronic cannabis use, cyclical vomiting, abdominal pain, and improvement of symptoms with the use of hot showers during the hyperemetic phase (7). In 2012, Simonetto et al. modified these criteria after reviewing 98 patients admitted to the Mayo Clinic (8). It is surprising that, despite the frequent publications of case series and case reports of CHS, the syndrome is still under diagnosed. The clinical features of CHS, associating abdominal pain and vomiting, are commonly seen in an emergency setting and so mask the syndrome. A common feature of this disorder is a strong compulsion to take showers in hot water several times a day. On the basis of our clinical observation, we described the clinical and toxicological characteristics of patients admitted to ED for CHS referred to our SAT by the EPs.

METHODS

The SAT receives requests for urgent or planned consultations, via intranet, from all units (inpatients and outpatients) of our university hospital. For patients admitted to the ED, the SAT is available onsite from Monday to Friday from 8 AM to 5 PM and the EP can request that the SAT provide brief interventions while the patient is being observed, whatever the SUD. Upon patient discharge from the ED, the SAT contacts local health services, general practitioners and, when required, organizes patient transfer to other institutes or plans ambulatory treatment. All of these activities are conducted in accordance with the French Addiction Plan, which emphasizes closer connections between the SAT and the emergency team to improve a global approach, that is, the medical, psychological, and social treatments of substance abusers (9). We focused on patients who reported being chronic cannabis users admitted to ED with a complaint of vomiting or abdominal pain. Patients were enrolled during a 7-month period from June 1, 2014 to January 1, 2015. Patients were first managed by the EP and then were referred to the SAT when the hyperemetic phase improved. The diagnosis of CHS was made by the addiction specialist using the major clinical criteria from the

largest case series to date, postulated by Simonetto et al.: “1) long-term cannabis use, 2) severe cyclical nausea and vomiting, 3) resolution of symptoms with cannabis cessation, 4) symptom relief with hot showers or baths, 5) abdominal pain (epigastric or periumbilical), 6) at least weekly cannabis use, together with negative laboratory, radiographic, and endoscopic test results” (8). A retrospective review of medical records was performed after the interview in the ED, including the number of previous admissions for the same complaint.

The EPs routinely obtain a blood alcohol content measurement if alcohol use is suspected. Informed consent for testing is not required in French hospitals, even if the patient is impaired, provided that he or she is informed after becoming sober. A multi-panel urine dip-test is used to qualitatively detect for buprenorphine, benzodiazepines, cocaine, methadone, opioids, and cannabis (Rapid Diagnostics; MP Biomedicals, Illkirch, France). More-specific toxicological blood screening based on questioning of the patient or relatives can be done if requested by the physician, such as qualitative measurement of benzodiazepines, quantitative measurement of tricyclic antidepressants, paracetamol, barbiturates, and blood cannabis concentration (10). Blood cannabis levels were measured by solid-phase extraction coupled with ISQ quadrupole GC-MS (Thermo Fisher Scientific, Waltham, MA) to quantify Δ^9 -tetrahydrocannabinol (THC), the principal cannabinoid found in cannabis; 11-hydroxy- Δ^9 -tetrahydrocannabinol (OH-THC), the main active metabolite of THC; and 11-nor-9-carboxy- Δ^9 -tetrahydrocannabinol (COOH-THC) in plasma, using deuterated THC, OH-THC, and COOH-THC, the major THC inactive metabolite, as internal standards. The calibration curve ranged from 1 to 100 ng/mL for both molecules with a precision and accuracy < 15%. Quantitative levels of cannabis in urine are not routinely tested in our university hospital.

Data were transferred to a Microsoft Excel spreadsheet (Redmond, WA) and descriptive data were quoted as means (with standard deviations). All intoxicated patients who are admitted in the ED are reported to the poison control center, which ensures toxicological surveillance from ED admission to discharge from hospital. This method has been detailed elsewhere: “The Poison Centers information system (SICAP® version 5.4.0, acronym meaning informatics system of the Poison Centers) summarizes the reason for ED admission, medical evaluation, the patient’s history, toxicology and laboratory test results, psychiatric report and diagnosis, and discharge to hospital or out-patient care” (11). Data were extracted from the Poison Center database, authorized by the French data protection authority (Commission Nationale de l’Informatique et des Libertés no.

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