

Clinical Trial

What to do from the Emergency Room in Case of Suspected Chemical Submission

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Abstract

Chemical submission is a crime where criminals use substances to impose their will on victims. A 44-year-old woman comes to the Health Center disoriented in the temporal sphere, stating that “she does not remember what happened.” Her brother, the companion who brings her to the health center, says that he has found her in a place he does not usually frequent. The patient missed a bag she was carrying and could not locate her mobile phone. The patient and companion suspect that she may have been “drugged” in order to rob them. Given the suspicion that the patient may have been a victim of chemical submission, the Emergency Service is called to inform that the victim is going to be referred. The detection of biological samples of the substances used for submission is of vital importance.

Introduction

In recent years, an increase in cases of Chemical Submission (CS) has been observed. This consists of the administration of chemical substances with psychoactive effects to a person, without their knowledge or consent for criminal purposes [1]. Chemical substances are administered to modify the state of consciousness, and their behavior or override their will. In recent years, the phenomenon of chemical submission has acquired notable relevance due to the increase in cases and its important health and social impact. Crimes against sexual freedom are the most frequent. Most of the victims are young women. The person under chemical submission can be a victim of any type of crime. In 2022, the Ministry of Justice developed and published the Guide to Good Practices for Forensic Action before the victim of a crime facilitated by psychoactive substances [2].

The substances used in Chemical Submission have a series of characteristics that are shown in Table 1.


More than 30 substances implicated in cases of chemical submission have been described, some of which appear in Table 2.

In the case of providing out-of-hospital health care (Table 3) to a person likely to have suffered chemical submission, they must be referred without delay to the Emergency Service

More Information

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They are easy to obtain (legally or illegally) with the notable rise of the internet.
They are substances without taste, color, or odor, which can be administered with drinks (generally alcohol) but can also be administered by inhalation or by subcutaneous or intramuscular injection.
They are active at low doses, fast-acting, and short-lasting.
It generally has a depressant action on the central nervous system. Some of them can be stimulating.
They cause anterograde amnesia, sedation, confusion, disinhibition, or hallucinogenic effects.

Ethyl alcohol
Benzodiazepine hypnotics (short half-life preferred)
Non-benzodiazepine hypnotics (zolpidem, zopiclone)
Gammahydroxybutyrate (GHB)
Methanol
Opioids
Cannabinoids
Ketamine
Cocaine
Amphetamine derivatives
LSD
Alpha-pvp
Atropine
Burundanga or scopolamine
Solvents



Table 3: Out-of-hospital care for possible chemical submission.

The action will be reduced to what is strictly necessary to avoid delays and duplications in the examination and in the reporting of the facts, avoiding delays in referral to the hospital.
The medical staff will provide initial medical assistance and assess the victim's life-threatening risk or need for urgent assistance.
Every effort will be made not to remove the clothing or any personal effects carried by the victim, guaranteeing their conservation and custody until transfer and reception at the hospital.

of the reference Hospital, and it is preferable to notify the Emergency Service of the patient's referral. The person will be referred by their own means or with medical transport appropriate to their clinical status [3].

Table 4 summarizes the history to be taken and the symptoms of a person who declares or is suspected to have been a victim of possible chemical submission and who is treated in the Emergency Department.

If CS is suspected, the first thing that will be done will be to collect samples for toxins (after signing the informed consent) given that they are time-dependent.

Subsequently, a history is taken (Table 5) aimed at searching for symptoms associated with or suspicious of chemical submission (Table 6).

Furthermore, the physical examination must be carried out systematically and by means of devices in the presence of witnesses; at least one person will be a healthcare professional, conveniently of the same sex as the patient, and if desired, there will also be a person they trust.

An injury report will be made that must describe all the injuries found. It is recommended that they be drawn in a sketch of the body, detailing its size, location, and appearance. In the case of hematomas, it is possible to tell the evolution time based on their characteristics. The medical personnel responsible for the care must complete the injury report with the diagnosis of suspected poisoning by substances involved in a probable chemical submission, recording whether biological samples have been collected, whether contact has been established with forensic medicine, and whether there was possible aggression of a physical or sexual nature.

If sexual assault is suspected (Table 7), a physical examination directed at the urogenital or gynecological area is required with sample collection in the presence of a forensic doctor, especially in the first 72 hours. The Gynecology service, and the forensic doctor, will be contacted on guard and the State Security Forces will be informed.

The victim must be informed of the need to formalize a complaint and the need for it to continue with the judicial process. In the event that the person decides to report, the competent Security Forces and Bodies will be contacted from the emergency room. Obtaining informed consent is a fundamental part of the action. It is recommended to

Table 4: Care in the Emergency Department.

In people with harmful consumption of toxic substances and/or altered level of consciousness, the person and/or companion will be asked if it is possible that "someone has administered a substance to them, by injection or by other means, and if something has happened to them." without their consent, which may constitute a crime."
In people with harmful consumption of toxic substances and/or altered level of consciousness, the person and/or companion will be asked if it is possible that "someone has administered a substance to them, by injection or by other means, and if something has happened to them." without their consent, which may constitute a crime."
The main symptoms associated with suspected CS are complete or partial amnesia, behavioral or behavioral alterations, confusion, drowsiness, agitation, hallucinations, disinhibition, dizziness, hangover, and loss of consciousness.
Suspicion of CS may be associated with sexual assault. The victim may remember or have the sensation of having been a victim of sexual assault, wake up naked or with disheveled clothing, find fluids or objects (condoms) on their body, present unexplained injuries or alterations at the oral, anal or genital level; waking up with a stranger next to them or in a strange place. The victim reports that they have explained to her that she was in a strange or compromising situation.
The victim will be treated in the emergency room in an area where the greatest possible privacy can be guaranteed.

Table 5: Directed anamnesis in chemical submission.

Symptoms presented: detail the temporal sequence of the symptoms presented. When did they appear? How long have they lasted? Are they present at the time of the interview?
Voluntary consumption of medications, or any type of psychoactive or toxic substance, such as alcohol or drugs, for medical or recreational purposes, acutely or chronically until now, due to the possibility that they mask or confuse the symptoms of criminal intoxication. Avoid disqualifying voluntary consumption.

Table 6: Symptoms associated with suspected chemical submission.

complete amnesia
Partial (fragmentary) amnesia
Paralysis without loss of consciousness
Loss of consciousness or "fainting"
pasty speech
Visual disturbances
Drowsiness
Confusion
Disproportionate hangover
Disinhibition
Agitation or hallucinations (delirium)
Disturbance of judgment
Dizziness or vertigo
Motor or balance disorders
Nausea or vomiting

Table 7: Suspected sexual violence.

Remembers being a victim of sexual assault
Having the feeling that something of a sexual nature has happened
Woke up naked or with their clothes in disarray
Found unexplained fluids (semen) or objects (condoms)
Has presented unexplained injuries or alterations at the oral, anal, or genital level
Has had unexplained injuries (erosions or ecchymoses)
Woke up with a stranger next to them or in a strange or unexplained place

explain to the victim what the toxicological test consists of, the non-guarantee that the tests will reveal psychoactive substances to facilitate the crime. The tests may reveal other substances that the victim may have voluntarily ingested. Written informed consent will be requested from the person and/or legal representative, giving a copy to the interested person and keeping the original together with the biological

samples collected and another copy in their medical record for digitalization [4].

If Chemical Submission is suspected, it will be collected systematically and as soon as possible as they are time-dependent substances [5-7]:

Urine: Urine is the sample of choice in most crimes facilitated by psychoactive substances. It is a usually abundant sample that reports relatively recent consumption, and that offers detection windows superior to blood. Collection will be made when no more than 5 days have passed since the alleged crime. All that can be collected will be sent in a 50 ml safety bottle.

Blood: Blood is a biological sample that informs about the recent consumption of a substance and also allows for establishing the correlation between the concentration and the clinical effect. The main disadvantage is the rapid elimination of substances from this medium; if there is a delay in collection, it is likely that the administered substance has disappeared from the blood. It must be obtained within the first 48 hours after the alleged event. The sample will be taken without using alcohol or another volatile substance as a disinfectant. Peripheral venous blood will be sent in four 5 ml tubes, preferably two with sodium fluoride as a preservative and potassium oxalate as an anticoagulant (gray stopper tube) and another two with whole blood anticoagulated with EDTA – edetic acid – to avoid the in vitro formation of glycohemoglobin. (lilac stopper tube).

Hair: Its collection is not common in the alleged victim's first healthcare visit. The hair sample is the appropriate matrix to confirm consumption or repeated administration over a period of time. Hair is of forensic interest when it is necessary to rule out chronic consumption of some psychoactive substance by the victim. In cases in which the report has been delayed (more than 5 days), or it is estimated that the elimination of the toxin in the blood and urine has occurred, the victim can be summoned 4-6 weeks after the event, indicating that During this time, it is advisable to not cut their hair or carry out cosmetic treatments (dye bleaching). Tufts of hair cut from the occipital area and very close to the

scalp - cut flush - will be collected, with a minimum thickness of 7 mm in diameter. It will be placed on a piece of paper fixed with adhesive tape, indicating the end close to the root (proximal zone) and the end of the tip (distal zone).

The emergency nursing staff will be in charge of taking the samples and storing them in the refrigerator located in the Emergency area. To guarantee the chain of custody of the samples, the chain of custody form must be completed, which must include the signatures of the doctor responsible and the nurse responsible for the extraction.

Conclusion

Chemical submission is a crime that has increased in recent years in Spain. Criminals use substances to impose their will on victims. The detection of biological samples of the substances used for submission is of vital importance. Health professionals who care for these victims must know the peculiarities of the biological samples that will be used to determine the possible existence of a chemical substance.

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