P.6.d.015 A trip to the unknown: 2,5-dimethoxy-4-chloroamphetamine (DOC) sold as LSD: study on samples delivered by users asking for substance analysis

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Introduction: New Psychoactive Substances (NPS) appear to be increasing in popularity because they mimic the effect of traditional drugs and they are sold freely through internet [1]. NPS usage is difficult to monitor due to the absence of systematic screening in common drug checking controls [2]. The presence of this new substances has been detected through surveys, questionnaires, studies in drug samples, studies in biological fluids and case reports. 2,5-dimethoxy-4-chloroamphetamine (DOC) is a phenethylamine with agonist activity in 5-HT receptors [5]. The evidence available suggests that this can be reason for concern, as it is sold as LSD [2]. Compared to LSD, DOC has a longer onset time, that typically raises re-dose risk when the user don't know what is consuming. It also seems that DOC could lower convulsion threshold and lead to severe peripheral vasoconstriction, effects that have not been described in LSD. Fatal outcomes have also been related to its use [3,4].

Objective: The main goal of this study is to determine DOC presence and characteristics from the samples analyzed by Energy Control between the years 2009 and 2014 in Spain.

Materials and Methods: From all samples analyzed from January 2009 to February 2015 only those in which DOC was found are studied. The samples have been analyzed by Energy Control, a Spanish harm-reduction non governmental organization that offers to users the possibility of analyzing the substances they intend to consume. The analysis is done by Thin Layer Chromatography and Gas chromatography–mass spectrometry. A literature revision was also performed in pubmed in march 2015.

Results: From the 18222 samples analysed during the period of study DOC was detected in 41 (0,22%). From these 41 samples containing DOC, 23 were handled as other substances, mainly LSD (n = 17). The samples containing DOC also contained dimethoxyamphetamine (n = 16), DOB (n = 8), synthesis byproducts (n = 4), unknown substances (n = 2), MDMA (n = 1), DOM (n = 1) and octadecenoic acid (n = 1). In the literature review only 3 case reports about DOC use were found and only one was from Europe.

Conclusion and Discussion: Results show a recent increase in DOC analysis that could translate an increase of its consumption. There is also high proportion of DOC sold as LSD, with high potential risk for overdosing, convulsion and even death. However the total amount of DOC analyzed remains small. Main limitations are due to selection bias of samples from Energy control. Further pharmacokinetic, pharmacodynamic, clinical and epidemiological studies should be conducted to promptly study variations in DOC consumption, assess its potential risk and study the complications and its management.

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P.6.d.016 An old chemical that became a new psychoactive substance: study on O-Acetylpsilocin samples handled for analysis and raise of awareness

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Introduction: New psychoactive substances (NPS) refer to emerging substances that have appeared on the market and are not under international control [1]. NPS have experienced an unprecedented increase in number, type and availability [2]. O-Acetylpsilocin also known as Psilacetin and 4-Acetoxy-DMT (4-AcO-DMT) is a synthetic tryptamine having a psychedelic effect by stimulating the serotoninergic system [4] and proposed as a research substitute for psilocybin as a prodrug of psilocin [3]. Even though patented in 1963 its effects on humans have not been systematically studied and it is non-regulated in Spain. Search for literature on 4-AcO-DMT in March 2015 found no studies conducted on humans.

Objective: The aims of this study are (1) to explore the presence of 4-AcO-DMT from the samples handled to and analyzed by harm reduction service Energy Control and (2) to evaluate the rate between 4-AcO-DMT and other related tryptamines (mushrooms, 4-AcO-DIPT, 4-AcO-MIPT and psilocybin).

Materials and Methods: All samples analyzed from January 2009 to December 2014 handled as 4-AcO-DMT or in which 4-AcO-DMT was found were studied. Spanish harm-reduction non-governmental organization Energy Control offers users the possibility of analyzing the substances they intend to consume. Analysis were done by Thin Layer Chromatography and Gas Chromatography–Mass Spectrometry.

Results: From 17.432 samples registered during the period of study 4-AcO-DMT was found in 48 (0.27%): 46 presented as

4-AcO-DMT, 1 as 4-OH-DMT (psilocin) and 1 as an unknown substance. Totally 48 samples were presented as 4-AcO-DMT: apart from the aforementioned 46 samples another 2 samples were presented as 4-AcO-DMT were no substance was found. In 37 samples containing 4-AcO-DMT (77.08%) presence of 4-OH-DMT was also found. From 2009 to 2010 9 samples were delivered as 4-AcO-DMT, 16 from 2011 to 2012 and 23 from 2013 to 2014 4-AcO-DMT was the 24th most handled substance during the whole period and representing 62.33% (48 out of 77) of the psilocin related substances [4-AcO-DMT (n = 48), mushrooms (n = 12), 4-AcO-DIPT (n = 12), 4-AcO-MIPT (n = 1) and psilocybin (n = 1)].

Conclusion and Discussion: Results show a recent increase in 4-Aco-DMT analysis that could translate a progressive rise in its recreational use gaining ground to other regulated tryptamines. Whether psilocin found on samples is a result of adulteration, degradation or an analytical artefact should be further studied. Clinical relevance comes from its growing use and the absence of scientific evidence on humans, not even a case report, therefore relying on users subjective experience to predict the effects of the substance. Awareness should be raised to clinicians and scientist in order to promote evidence on this substance clinical effects as well as epidemiological data at a larger scale.

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P.6.d.017 Is this really ketamine? The presence of methoxetamine on drug samples delivered as ketamine for substance analysis

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Introduction: New psychoactive substances (NPS) are substances that mimic the effect of traditional drugs, have recently became available and that are not world-wide regulated. They often intend to mimic the effect of controlled drugs [1] becoming a public health concern. In 2014 101 new substances were reported for the first time in the EU [2]. Methoxetamine, an NPS, is a dissociative hallucinogenic acting as a NMDA receptor antagonist clinically and pharmacologically similar to ketamine [3]. It differs from ketamine on its higher potency and duration as well as on its serotonergic effects probably leading to more severe side effects. It is a non-regulated substance in Spain sold as a ketamine substitute [2]. It has been one of the 6 substances requiring risk assessment by EMCDDA during 2014 [3] and case reports described fatal outcomes related with its use [4].

Objective: The aims of this study are (1) to explore the presence of methoxetamine from the samples handled to and analyzed by Spanish harm-reduction service Energy Control and (2) to determine whether methoxetamine is being delivered as ketamine for recreational use.

Materials and Methods: All samples analyzed from January 2010 to March 2015 handled as methoxetamine or in which methoxetamine was found were studied. Energy Control is a Spanish harm-reduction non-governmental organization that offers users the possibility of analyzing the substances they intend to consume. Substance analysis is carried out by Thin Layer Chromatography and Gas Chromatography–Mass Spectrometry.

Results: During the period of study, from 16.6605 samples obtained, methoxetamine was found in 138 (0.83%). From these 138 samples containing methoxetamine, only 69 (50%) were delivered as such, 50 (36%) were delivered as ketamine and 19 (14%) as other substances like (cocaine=3, amphetamine=2 and mephedrone=2, among others). In the 138 samples that contained methoxetamine, other compounds were also found in 42 (30%), being synthesis by-products the most frequent ones (n = 23), followed by unknown substances (n = 23), cafeine (n = 17), mephedrone (n = 6) and MDMA (n = 3), among others.

Conclusion: The results of this study show a significantly growing ratio of samples handled as ketamine actually containing methoxetamine. This fact is clinically relevant since methoxetamine has a longer higher effect and fatal outcomes have been reported as connected to its recreational use. Severe side effects might be even more serious considering that users of the substance probably ignore which substance they are actually using. Despite the increasing number of studies on methoxetamine further evidence is needed to clarify the magnitude of methoxetamine delivered as ketamine and its clinical implications at a higher scale.

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P.6.d.018 Delta9-tetrahydrocannabinol (THC) and cannabidiol (CBD) alone and in combination affect brain activity during rest

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Purpose of the study: Δ^9-Tetrahydrocannabinol (THC) and cannabidiol (CBD) are the two most important constituents of cannabis. CBD has gained interest in recent years due to its