4-CHLORO-2,5-DIMETHOXY AMPHETAMINE (DOC) - A RARELY REPORTED RAVE SCENE DRUG OF ABUSE

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Introduction

- Recreational drug use in the UK is common, and amongst the highest in both Europe and the developed world. [1]
- Many recreational drugs such as amphetamines, MDMA (‘ecstasy’) and cocaine are controlled under specific legislation, for example in the UK this is the Misuse of Drugs Act (1971).
- More recently other drugs such as gamma-hydroxybutyrate (GHB) have been classified under these specific regulations when it has become known that there are problems associated with their use.
- However, new synthetic compounds such as 1-benzylpiperazine, Foxy Methoxy and other hallucinogenic amphetamines, continue to be developed and/or marketed to replace them. [2-4]
- 4-chloro-2,5-dimethoxyamphetamine (DOC) is a synthetic ring-substituted phenethylamine amphetamine derivative. Therefore, in the UK, it is controlled by the generic Misuse of Drugs legislation.
- There have been no previous reports of adverse effects associated with DOC use in the medical literature, although there has been one report of the adverse effects of DOC use previously on the internet site Erowid. [5]

Case Report Initial Presentation

- A 20-year-old male with no significant past medical history collapsed having tonic-clonic seizures at a ‘rave party’.
- His friends reported that he had taken DOI (4-iodo-2,5-dimethoxyamphetamine); additionally they confirmed that the patient had co-ingested a cocktail of ethanol and other recreational drugs of abuse.
- He was intubated at ‘the scene’ by the paramedic crew in view of his reduced level of consciousness. On arrival in the ED he had a sinus tachycardia (152 bpm) and blood pressure of 144/57 mmHg; he was hypothermic (temperature on arrival 36.8ºC).
- His pupils were dilated (6 mm) and were non-reactive to light. The remainder of his neurological examination was normal, and in particular there was normal tone and reflexes and no evidence of clonus.
- His initial electrocardiogram (ECG) confirmed his sinus tachycardia, with normal QRS duration and corrected QT interval (QTC).
- An arterial blood gas showed a metabolic acidosis.
- Initial biochemistry and haematological investigations were normal, apart from a reduced corrected calcium of 2.02mEq/L (NR 2.20-2.63mEq/L), elevated random blood glucose of 173mg/dL, neutrophilia of 10.5 x 10⁹ and a low serum albumin of 30g/L (NR 35-50g/L).
- There was biochemical evidence of rhabdomyolysis with an initial creatine kinase of 1314 iU/L and a normal troponin T.
- In view of his reduced level of consciousness and previous seizure, a CT scan of his brain was performed, which was normal.

Case Report Subsequent Progress

- Following initial stabilisation in the ED, he was admitted to the ICU for ongoing management, where he developed a low grade pyrexia (37.6º), and became cardiovasculary unstable with a systolic blood pressure of 98 mmHg and a heart rate of 92 bpm. His blood pressure improved with intravenous fluid resuscitation (500 ml colloid and 500ml of crystalloid) and he did not require any inotropic support.
- Although he was covered with broad spectrum intravenous (IV) antibiotics (Cefuroxime and Metronidazole) for possible aspiration pneumonia, there was no biochemical or radiological evidence of significant sepsis and cultures remained negative.
- He responded well to fluid resuscitation and remained haemodynamically stable during the rest of the ICU admission.
- His creatinine kinase concentration peaked at 4924 iU/L and there was no associated renal dysfunction.
- His initial metabolic acidosis corrected with intravenous fluid resuscitation, and it is most likely that this was due to his tonic-clonic seizures prior to admission to the ED.
- He was extubated 22 hours following admission to and was discharged from hospital with no long term sequelae.

Figure 1. Paper tab obtained by TICTAC Communications and found to contain DOC.

Conclusions

- We have described a case of poly-drug use, including DOC, with toxicological screening that confirmed the presence of DOC in plasma samples.
- Routine toxicological screening is generally not undertaken in patients with recreational drugs of abuse toxicity, since it will usually have no immediate impact on the clinical management of that individual patient. However, where this is undertaken with the appropriate expertise, often novel drugs of abuse are detected. [1]
- A more widespread use of ‘routine’ toxicological screening programmes could be useful to demonstrate the evolving epidemiological trends in recreational drugs of abuse availability and toxicity. [6]
- Some of the discovered compounds, such as DOC described here, may already be covered under current generic legislation due to their chemical similarity to other already classified drugs. However, others may represent true novel drugs of abuse, which will need further investigation to determine the appropriate degree of legal enforcement concerning their possession and/or supply.

References