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Title:Use of tetrahydrozoline for chemical submission

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Abstract:Background: We report two cases of drug-facilitated sexual assault which presented with CNS depression rendering the victims vulnerable to sexual assault and unable to recall the events surrounding the crimes. In each tetrahydrozoline (THZ) was quantified.

Case report: Case # 1 ingested an unknown amount of eye drops containing THZ mixed with alcoholic beverages. Case # 1 presented to the emergency department (ED) approximately 7 h after reportedly being sexually assaulted and was without symptoms in the ED. Earlier reports from individuals who saw her indicated the victim to be "heavily intoxicated". Case # 2 also ingested an unknown amount of eye drops containing THZ mixed with alcoholic beverages. Case # 2 presented to an ED without symptoms approximately 23 h after reportedly being sexually assaulted. Urine obtained from both cases was assessed for THZ concentrations using gas-chromatography-mass spectrometry.

Case discussion: Case # 1 had a 0.15 g% (by weight by volume) urine ethanol concentration and a urinary THZ concentration of 1.481 ng/ml, approximately 7 h after ingestion. Case # 2 was negative for ethanol but had a urine THZ concentration of 108 ng/ml at 23 h post-ingestion. Few case reports have been published documenting the use of THZ to facilitate sexual assault.

Conclusion: We report two cases of drug-facilitated sexual assault involving the use of THZ where alcoholic beverages were concomitantly consumed. This is the first paper to our knowledge which discusses pharmacology of THZ ingestion and the significance of alcohol being present. (C) 2012 Elsevier Ireland Ltd. All rights reserved.

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