## False positive phencyclidine result on urine drug testing: a little known cause

Phencyclidine (PCP) is a hallucinogenic drug, often referred to as 'angel dust'. Its short-term effects are seen for approximately 1 h after ingestion and may include hallucinations, disinhibition, euphoria and agitation. Long-term use can lead to symptoms resembling psychotic disorders such as schizophrenia. Its detection time in urine is approximately 8 days.[1] We would like to highlight two cases of false positive results for PCP on urine drug screening at a community mental health rehabilitation centre.

Patient A was a 25-year-old male with paranoid schizophrenia, admitted to an acute psychiatric ward under Section 2 of the Mental Health Act 1983 because of deterioration in mental state following medication non-adherence and a history of illicit drug use. He was transferred to the rehabilitation centre under Section 3 of the Act 5 months later, exhibiting mainly negative symptoms of schizophrenia. He was receiving treatment with venlafaxine 150 mg twice daily, lithium carbonate 800 mg once daily and clozapine 400 mg in the evening; he also had lactulose 10 ml twice daily. A urine drug screen was performed after staff found cannabis in his room. The result was positive for both PCP and THC (marijuana), although the patient denied taking any PCP. The test was repeated and results were positive for PCP only.

Patient B was a 38-year-old male with paranoid schizophrenia admitted under Section 2 of the Mental Health Act after being arrested for wielding knives in public. He was transferred to the rehabilitation centre under Section 3 of the Act 8 months later with ongoing psychotic symptoms including 'electric shock sensations' which he attributed to possible chemical warfare. He was receiving treatment with risperdal consta 50 mg IM twice weekly, venlafaxine 75 mg twice daily, clonazepam 0.5 mg twice daily and procyclidine 5 mg twice daily. A urine drug screen was performed since he had become increasingly guarded and irritable, despite good adherence to medication. The result was positive for PCP and benzodiazepines. The benzodiazepines could be explained by clonazepam but the patient again denied taking any PCP. The same results were obtained when the test was repeated.

Given that both patients denied taking PCP our suspicion was aroused. None of the other patients on the unit who had urine drug screens tested positive for PCP. Venlafaxine was the only medication taken by both patient A and B. A review of the literature revealed several case reports of false positive urine immunoassay results for PCP in patients taking venlafaxine of various doses. In one case series, three patients in an emergency department in Danbury Hospital, Connecticut, USA, were found to have false positive urine assay results for PCP due to venlafaxine.[2] Another case reported a false positive result for PCP in a patient with an intellectual disability who received 75 mg/d of venlafaxine extended-release (XR)[3] and another that resulted from venlafaxine overdose.[4]

This effect is thought to be due to cross-reactivity between venlafaxine and the active metabolite O-desmethyl-venlafaxine with the PCP assay reagent, although they are not structurally related.[2] The US Food and Drug Administration warns that false positive test results may be expected for several days following discontinuation of venlafaxine.[5] Confirmatory tests, such as gas chromatography/mass spectrometry can be used to distinguish between the two.

Based on this information, the urine assay results showing PCP for patients A and B were determined to be false positives due to cross-reactivity with venlafaxine. Patient A's leave was reinstated as it had been cancelled until drug testing was negative. For patient B, we were able to exclude illicit drug use as a cause for his altered mental state. Increased awareness of the cross-reactivity between PCP and venlafaxine is important for all healthcare professionals to avoid inappropriate suspicion of illicit drug use.

1 Moeller KE, Lee KC, Kissack JC. Urine drug screening: practical guide for clinicians. *Mayo Clin Proc* 2008; **83**: 66–76.

2 Sena SF, Kazimi S, Wu AH. False-positive phencyclidine immunoassay results caused by venlafaxine and O-desmethylvenlafaxine. *Clin Chem* 2002; **48**: 676–7.

3 Brahm NC, Brown RC. Venlafaxine usage resulted in a false positive immunoassay for phencyclidine. *J Coll Psychiatr Neurol Pharm* (http://cpnp.org/_docs/resource/jcpnp/venlafaxine.pdf).

4 Bond GR, Steele PE, Uges DR. Massive venlafaxine overdose resulted in a false positive Abott AxSYM urine immunoassay for phencyclidine. *J Toxicol Clin Toxicol* 2003; **41**: 999–1002.

5 U.S. Food and Drug Administration. Effexor (venlafaxine HCl) tablets and Effexor XR (venlafaxine HCl) extended-release capsule. FDA (http://www.fda.gov/Safety/MedWatch/SafetyInformation/ucm201064.htm).

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## No beds for young people – also in Scotland

I read Myers *et al*'s correspondence[1] with great interest. I am a consultant child and adolescent psychiatrist working in the forensic child and adolescent mental health services and I am simply dumbfounded by the difficulties that frequently present when trying to coordinate in-patient admissions for young people in Scotland for those who have mental health problems and concurrent risk to others.

Like the authors of the letter, I see the deterioration and the stigma that young people face when admissions are being coordinated. At present, there are no secure mental health beds in Scotland who accept under-18-year-olds. Our only option is to beg for intensive psychiatric care unit beds from colleagues in adult services. I also echo concerns that there is no joined-up bed management system within the service I work for, which means that should I wish to admit a young person, it is up to me to call each unit individually.

Often my only option is to send young people to England, where there are private-sector adolescent medium secure beds. This comes with significant cost, both financial and emotional. I have seen how hard it is for families to agree to send their loved ones so far away, knowing they will struggle to visit or sometimes even telephone. In addition, if a young person is on remand or pre-trial, they cannot be sent across the border.

I thank the authors for making me realise that I am not isolated in this demoralising and stigmatising situation. But this is a bittersweet pill as it only serves to highlight that services need to be made more available for young people across the country.