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Robotripping: The Dangers of Abusing Dextromethorphan

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Robotripping: The Dangers of Abusing Dextromethorphan

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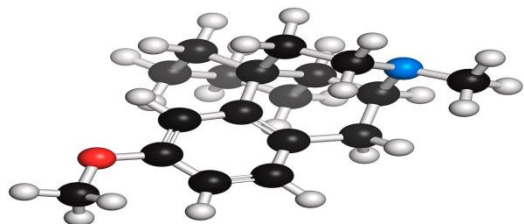
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Introduction

Dextromethorphan (3-methoxy-N-methylmorphinan), also known as "DXM," is a synthetically produced drug available in many over-the-counter (OTC) cough and cold medications as a centrally acting cough suppressant that binds to NMDA receptors. In a 2006 national survey of 50,000 students, 4, 5, and 7% of 8, 10, and 12th graders reported DXM abuse in the past year [1]. In high doses, DXM can cause euphoria, hallucinations, dissociations, and distortion of cognition and perception [3]. DXM abuse is also known as "Robotripping," "Robodosing," "Dexing," "Tussin," or "Triple Cs" because Robitussin and Coricidin Cough and Cold are most frequently abused. DXM has replaced codeine and promethazine in many cough syrup preparations, yet it is still known as "Purple drank," "Lean," "Sizzurp," "Orange Crush," or "Skittles" when mixed with alcohol or soda for flavor. Co-toxicity can occur since DXM is usually combined with acetaminophen, antihistamines, or decongestants like pseudoephedrine. DXM reaches its peak effects at 30-60 minutes, and lasts 2-4 hours [2]. Abusers often use throughout the day to maintain a consistent high. At doses of >500mg, users can experience hallucinations, violent behaviors, and even trance-like states [3]. Poison control recommends ED evaluation for ingestions of more than 7.5 mg/kg [1]. We report an interesting case of DXM abuse whose symptoms present as acute psychosis.



Dextromethorphan (3-methoxy-N-methylmorphinan)

Case Report

- 46 yo male history of depression, schizoaffective, bipolar disorder, was brought by EMS in restraints for AMS. He has numerous lacerations on chin and lower extremities. He is hyperactive, difficult to redirect, following simple commands, and appears to be responding to internal stimuli. He denies SI/HI.
- Wife reports an empty bottle (237 ml) of Rite Aid Tussin Cough and Congestion medication containing 20 mg of Dextromethorphan per 10 cc syrup. Non-compliant with psych meds and has had increasing religious delusions in the past few days.
- Initial VS 101.8F, HR 138, RR 20, 145/77, 97% on RA. WBC 20. Lactate 1.8. BMP 133/4.5/105/10 /9 / 1.55 < 136. AST/ALT 75/54. Neg UDS and UA. CK 759. Etoh, salicylate, acetaminophen negative.
- We discussed the case with Poison Control and provided supportive care for his suspected DXM overdose including Lorazepam for his agitation. He met sepsis criteria so covered him empirically with Ceftriaxone/Doxycycline for suspected aspiration pneumonia seen on CTAP. AKI improved after fluids. Transaminitis improved.
- During his course, patient's substance-abuse related psychosis improved. Patient admitted to abusing DXM 2-3 times a day for 2 weeks because it "gives him energy" to read. He recalls cutting himself with knife to "prove his dedication to God".
- His home medications were restarted including Aripiprazole, Bupropion, Fluoxetine, Ziprasidone, Clonazepam. Patient returned to baseline mentation.

Discussion

At very high dosages, DXM can cause agitation, violent behavior, liver damage, addiction, hallucinations, and delusions. Effects can be worsened with co-ingestions of other drugs, especially SSRIs, alcohol or opioids. Monitor for serotonin syndrome. Labs may show transaminitis and acute kidney injury. Treatment includes activated charcoal if ingestion is within 1 hour, respiratory support, IVFs, and benzodiazepines.

Stages of intoxication by dose	Side effects of Dextromethorphan (DXM) toxicity [3]
1st plateau: 100-200 mg	<ul style="list-style-type: none">• Effects similar to ecstasy• Mild stimulation, uplifting effect• More energetic, social talkative
2nd plateau: 200-400 mg	<ul style="list-style-type: none">• Effects similar to alcohol intoxication• Decrease in motor and cognitive function, HTN, slurred speech• Euphoria and hallucination
3rd plateau: 400-600 mg	<ul style="list-style-type: none">• Effects similar to ketamine• Strong dissociation, intense hallucinations, loss of motor coordination, generalized weakness
4th plateau: 500-1500 mg	<ul style="list-style-type: none">• Effects similar to PCP• Effects can last up to 2 weeks• Trance-like state, out of body experience, delirium, hallucinations

Conclusion

DXM is an inexpensive OTC medication that is easily abused for its euphoric properties and can present to ED as altered mental status. Adverse drug effects include thermoregulation, hypoxia, blurred vision, syncope, respiratory depression. DXM is known as "the poor man's PCP" because intoxication can manifest as extreme agitation, violent behavior, and florid hallucinations. Do not delay call to Poison Control and be wary of fulminant hepatic failure. Supportive care is the mainstay of therapy.

References

1. Chyka P, Erdman A, Manoguerra A, et al. Dextromethorphan poisoning: An evidence-based consensus guideline for out-of-hospital management. *Clinical Toxicology*. 2007 Oct; 45 (6): 662-667. DOI: [10.1080/15563650701606443](https://doi.org/10.1080/15563650701606443)
2. Wilson M, Ferguson R, Mazer M, et al. Monitoring trends in dextromethorphan abuse using the National Poison Data System: 2000-2010. *Clinical Toxicology*. 2011 Jul; 49(5): 409-415. DOI: [10.3109/15563650.2011.585429](https://doi.org/10.3109/15563650.2011.585429)
3. Boyer E. Dextromethorphan Abuse. *Pediatric Emergency Care*. 2004 Dec. 20(12): 858-863. DOI: [10.1097/01.pec.0000148039.14588.d0](https://doi.org/10.1097/01.pec.0000148039.14588.d0)