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CASE REPORT

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Dextromethorphan Induced Psychosis

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BACKGROUND INFORMATION

Dextromethorphan (DXM) is an over the counter (OTC) cough suppressant used commonly in cold medications available in the market. DXM is quite often abused by adolescents. This medication induces visual and auditory hallucinations with a state of euphoria, very much similar to the state of “drug induced psychosis”. The street names for dextromethorphan are DXM, CCC, triple c, skittles, robo and poor man’s PCP. The street terms of using DXM illicitly are “robo-tripping” or “skittling”. These terms come from the most commonly abused OTC products, Robitussin and Coricidin, cough and cold medications.

CASE PRESENTATION

This is a 17 year old Latin American female admitted to the Child and Adolescent Unit with the diagnosis of bipolar I disorder, most recent depressed episode, severe with psychotic features and borderline personality traits. She is currently being treated with an anti psychotic and a mood stabilizer. This is her seventh admission in a psychiatric hospital due to suicidal ideation, depression and psychosis in the past year. She denied any use of alcohol or any illegal drugs on every admission in the past including the present one. The blood alcohol levels and urine toxicology results were negative

The patient was seen to be very pleasant and comfortable with male staff members during her stay in the hospital and very defiant with the female staff. She was observed to be sticking pictures inside and outside her room walls, of different colored paper cut in the shape of circles with “skittles” written on it. When confronted by one of the male staff member the patient reported that she likes skittles, a form of candy and in different colors. On further questioning she confessed to abusing DXM in the form of skittles in the past.

DISCUSSION

Psychosis is defined as an abnormal condition of the mind associated with loss of contact with reality, hallucinations, delusions, personality changes, disorganized thinking or grossly disorganized or catatonic behavior. Psychosis can be induced in a person due to a psychiatric or psychological condition, a medical condition or a substance induced, which could be either legal or illegal, prescription or non prescrip-

tion drugs. Dextromethorphan (DXM) (d-3-methoxy-N-methyl-morphinan) is the dextro isomer of levomethorphan, a semi-synthetic morphine derivative. Although structurally similar to the other narcotics, DXM does not act as a mu receptor opioid (e.g. morphine, heroin). DXM and its metabolite, dextrorphan act as potent blockers of the N-methyl-D-aspartate (NMDA) receptor. At high doses the pharmacology of DXM is similar to the controlled substances phencyclidine (PCP) and Ketamine that also antagonize the NMDA receptor. High doses of DXM produce PCP-like behavioral effects and psychosis. The most acceptable theories on pathophysiology of psychosis are the overactivity of dopamine function in the brain, particularly in the mesolimbic pathway and a possible dysfunction of the excitatory neurotransmitter, glutamate mainly in the activity of the NMDA (N-methyl D-aspartate) receptor. The diagnosis of psychosis can be done with a complete psychiatric evaluation. Brain scans like fMRI (Functional Magnetic Resonance Imaging) and PET (Positron Emission Tomography) can be used to see activation of the involved areas of the brain which are the reason for the psychosis. The treatment of psychotic disorders is anti-psychotic medications, either oral or intramuscular and sometimes with or without hospitalization.

This patient is an example of how easy it is to overlook the abuse of drugs when terms like “skittles” are used by them. She also reported that DXM is also mixed or laced with other illicit drugs such as ecstasy and/or methamphetamine. As physicians we should be aware of the terms like this patient used to alarm us from the possible use of any legal or illegal drugs. The DEA (Drug Enforcement Administration) is currently reviewing DXM to be a regulated chemical under the CSA (Controlled Substances Act).

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Continued on page 6



Dextromethorphan Induced
Psychosis
(Continued)

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