DEXTROMETHORPHAN: ABUSING THE OVERUSED

Dear Sir,

Consumption of cough medicines for a quick high is certainly not a new practice for many adolescents and young adults. For decades, many have resorted to cough medicines for a legal, easily accessible, cheap and almost instant high. One of the compounds in common cough mixtures is codeine phosphate, which is known for its sedative side-effects, strong potential for abuse and physically addictive properties. Though general practitioners (GPs) are aware of the abuse and the addictive potential of this compound and are reluctant to prescribe it, we still see many patients who are addicted to codeine. As an alternative, GPs and other specialists often prescribe mixtures containing dextromethorphan. Dextromethorphan comes in the form of tablets, gel capsules and syrups, as well as an ingredient in various cough mixtures. It is often assumed to be safe; however, when the label-specified maximum dosages are exceeded, dextromethorphan acts like controlled substances such as ketamine and phencyclidine, which are known dissociative hallucinogens.[1] This is through dextromethorphan's antagonism on N-methyl-D-aspartate receptor.[2]

Dextromethorphan is a psychotropic substance that has a potential for abuse and dependence.[3] Cough mixtures often contain more than one ingredient, such as acetaminophen, chlorpheniramine and phenylephrine, which can damage organs, or even lead to death if consumed in high doses. Dextromethorphan at high doses can lead to death on its own, but the risk in cough mixtures is even higher, as it is often taken together with other psychoactive substances.[4]

Unfortunately, this risky and potentially fatal practice is on the rise among Singaporean youth. We saw three such cases of dextromethorphan misuse at the Changi General Hospital within a span of two months (December 2009 to January 2010). The first case was an 18-year-old Malay boy from a technical institute. He presented to us with visual and auditory hallucinations (mostly as an echo), with a sense of elation and well-being. His friends had found him gesturing in the air and talking irrelevantly. He claimed to have ingested 40 tablets of Romilar (dextromethorphan in tablet form) on the night before his admission to the hospital as a cure and prevention for a sexually transmitted disease, but denied having any intention to harm himself. He also denied any other substance abuse or past psychiatric history. On Day 2 of admission, no psychotic features, mood or behavioural disturbances and withdrawal effects were noted. The patient could not recall events following ingestion of the drug. His creatine kinase level was raised, which improved with intravenous hydration. He was treated with light sedation (hydroxyzine) and was subsequently discharged with advice to see the Addiction Medicine Department of the Institute of Mental Health/Woodbridge Hospital.

The second case was a 24-year-old Chinese woman who was previously a healthcare professional but was now working part-time at a retail shop. She was brought to us by her parents, as they had found her behaving strangely (she was talking to herself in the mirror, searching continuously for a lost bag, calling up colleagues in the middle of the night and putting dirty cutlery in the fridge). She looked drowsy and confused, but was unable to fall asleep. The patient had started taking cough mixtures two years ago for sinusitis and cough. The medication had also helped her insomnia. She then started taking increasing amounts of cough mixture (up to one bottle a day). She claimed to have tried abstaining from it, but failed as the urge was too strong. She then went from one doctor to another to purchase these cough mixtures. In 2008, she was fined S$2,000 by the court for stealing cough mixture from the GP clinic where she worked. She had also tried other mixtures containing codeine, dextromethorphan, diphenhydramine and promethazine. She admitted to being a heavy smoker (40 sticks of cigarettes a day), but denied alcohol or any other substance abuse. The patient also admitted to taking cough mixtures containing dextromethorphan in more than the prescribed dosage, but maintained that this was only for the purpose of relieving her cough. Although she denied any psychotic or mood symptoms, she appeared elated and unaware of her addiction problem. The patient was treated with light sedation (hydroxyzine) and was seen by our Addiction Counsellor during her ward stay. She was discharged with outpatient appointments to see the Addiction Counsellor and Psychiatrist.

The third case was a 22-year-old Malay national serviceman in the Civil Defence Force. He presented to us after being found by his friends to be drowsy and unarousable after ingesting a bottle of cough mixture containing dextromethorphan. He claimed to be feeling stressed after being bullied and scolded by his seniors at the camp. Although he felt sad, he denied feeling hopeless or suicidal. He had no loss of sleep or appetite, or any psychotic symptoms. He admitted to drinking cough mixture whenever he felt bored or stressed. The patient's electronic records showed past prescriptions with cough mixtures containing dextromethorphan, codeine and diphenhydramine. He was

introduced to cough mixtures by friends about one year ago, and started drinking them once a month initially, which then increased to twice a month. The patient claimed to have intentions to reduce his intake of cough mixture due to the religious background of his family. Two of his paternal uncles had been poly-substance abusers in the past. He smoked five to six sticks of cigerettes per day, and admitted to taking sleeping pills and hard drugs in the past, but not within the last one year. He had been jailed for three months in the previous year for theft. In the wards, the patient's condition stabilised, and he was discharged after all his test results were found to be within normal limits. He agreed to be followed up by the Addiction Counsellor and Psychiatrist.

These cases may only be the tip of the iceberg. The real problem of substance abuse in the community may be much larger. Families of abusers may be adversely affected by their addictive behaviour. It may also lead to a decline in functioning and financial losses, in addition to the other associated risks of toxicity. Frequent and chronic misuse of dextromethorphan at very high doses could lead to permanent psychological problems such as toxic psychosis.[5] As in the case of most of cough medicines, dextromethorphan's effectiveness as an antitussive agent is highly debatable, especially in children.[6] Careful history-taking and checking of medical records can help in identifying patients who may be misusing it. Efforts should be taken to raise awareness regarding the abuse potential and adverse effects of this seemingly safe cough suppressant among physicians and the general population.

Yours sincerely,

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