COUGH MIXTURE ADDICTION - A CASE REPORT

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SYPNOSIS

One of the many codeine-containing cough mixtures sold over the counter is promethazine compound mixture. A 25 year old Chinese man who was prescribed this mixture for chronic cough due to tonsillitis, developed addiction. The withdrawal effects and psychosocial consequences are reported. This is the second case of codeine-containing antitussive addiction reported in Singapore. The pharmacology of codeine is briefly discussed.

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INTRODUCTION

Not uncommonly doctors prescribe medicine without seriously considering their potential for abuse. Prescription of benzodiazepines is a typical example. Beside benzodiazepines, a drug containing codeine either as an analegesic or cough supressant is commonly prescribed.

Codeine was first used as a therapeutic antitussive agent in 1834. Both codeine phosphate and sulphate are taken orally as linctuses for the relief of cough or tablet for the relief of pain. Its analgesic effect is similar to morphine but it is less potent than morphine. It is absorbed from gastrointestinal tract and it reaches peak plasma concentration in about 1 hour. The plasma half life is 3 hours. Codeine is metabolized in the liver to morphine, norcodeine and normorphine. These are mainly conjugated with glucuronic acid and excreted by the kidney in ratio of 70% codeine, 10% morphine, 9% norcodeine and less than 4% normorphine. The elimination is almost complete after 2 days(1,2). Prolonged use of high doses of codeine has produced addiction of the morphine type. However, the withdrawal symptoms develop more slowly and are milder than with morphine.

There are more than 20 types of cough mixture sold over the counter locally containing 4 to 10 mg of codeine phosphate per 5 ml. Promethazine compound mixture is one of them and it contains 9 mg of codeine phosphate in 5 ml. We describe a case of promethazine compound mixture addiction and the psychosocial consequences.

CASE REPORT

Mr B is a 25 year-old Chinese who is studying in a tertiary institution. He is the elder of two children in a nuclear family. He was referred to a psychiatrist after his arrest for breaking into a hospital dispensary whilst attempting to steal promethazine compound mixture. He expressed his dependence on the cough mixture and had to break into the government dispensary because he was financially impoverished after purchasing the cough mixture over the counter for the last 6 months.

He was first prescribed the cough mixture for frequent cough due to chronic tonsillitis in 1980. Regular prescription of the mixture continued till after his tonsillectomy in 1982. However, he found that he had to continue taking the cough mixture because he experienced restlessness and abdominal discomfort after stopping it. These symptoms were relieved by further consumption of the mixture. In 1984, the doctors discovered his abuse and he was stopped from collecting anymore from the government dispensary. As a result, he had to buy it from the private pharmacies. Realising that he was taking an increasing amount, he sought help from two doctors to stop this dependence but it was unsuccessful. He mentioned that he was more alert and energetic whenever he took the mixture. Attempted withdrawal by himself had caused abdominal cramps, diarrhoea, watery eyes, running nose, agitation, restlessness and depressed feeling. To avoid withdrawal symptoms, he had to take about 70 ml of promethazine compound mixture a day. He could afford to buy it because he had a monthly income when he was in the National Service.

After he left the army and enrolled in a technical college in 1986, he found it increasingly difficult to spend $120 per month on his supply. He did not abuse any other drug. Instead of using his money to buy textbooks, he spent it on the cough mixture and shoplifted the books. Attendance at the college was irregular and he was unable to cope with his study because of the withdrawal symptoms. He was regarded as "irresponsible" and "uninterested in studies", and was ostracised by fellow students.

There is no family history of drug abuse or psychiatric illness. His parents and sister had advised him to stop and there were frequent quarrels because of his addiction problem.

Mr B is a small build man; and on physical examination there was no injection mark or other sign of parenteral drug abuse. He was asymptomatic on the first day but on the second day, he experienced abdominal cramps, diarrhoea, excessive tearing and running nose. He also complained of ant-like small insects crawling on his body (formication) especially on his chest. He was observed to be agitated, had conjunctival congestion and craved for the cough mixture.

During this phase, he was prescribed chlormethia zole to alleviate the withdrawal symptoms. No maintenance narcotic was given. Unfortunately he broke the

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therapeutic alliance and brought the cough mixture into the ward. On the sixth day, he absconded home but returned on the same day. His urine was tested and found to be positive for morphine. He was discharged home because we felt that he was not co-operating with the treatment. Not long after discharge, he was arrested for shoplifting again. He expressed an eagerness to stop his addiction again and was referred to a private organization for further treatment.

DISCUSSION

The first case of cough mixture addiction was reported locally(8) in a 41-year-old Chinese man whose symptoms mimicked thyrotoxicosis. He experienced tremulousness, sweaty palms, irritability and anxiety. In addition to codeine, he was also addicted to diazepam.

Although codeine is not one of narcotics with high potential for abuse, addiction has been reported(3–9). Combination of codeine with other drugs to produce euphoria has been noted particularly with glutethemide(4,5). Winek et al.(7) reported a 21-year-old girl who overdosed herself with a codeine cough syrup leading to cerebral edema and death. Codeine abuse is also associated with alcohol abuse, higher rate of of arrest and accidental death(9,10).

Since the withdrawal of Linctus Tussi Rubra (LTR) 10 years ago, we still have more than 20 types of codeine containing cough preparations locally. Alternative cough mixtures are available but none of them has been proven to be therapeutically superior to codeine (6). Promethazine compound mixture is the only codeine containing antitussive in the government dispensaries and not uncommonly many doctors encounter patients in the outpatient clinics demanding for the "green cough mixture". It is surprising that although heroin and morphine are controlled drugs, codeine in the form of cough mixture can be obtained over the counter at low cost without a physician's prescription. It is important for doctors to realize the potential for abuse of a common cough mixture like promethazine compound.

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