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CASE REPORT

A RARE CASE REPORT: SELF MEDICATION OF COUGH SYRUP CONTAINING DEXTROMETHORPHAN

Authors: Dr. Rahul Ranjan[1] (Tutor), Dr. Suruchi Prakash[2] (Assistant Professor), Dr. Neetu Gupta[3] (Assistant Professor) & Dr. Sanjay Kumar Verma[4] (Associate Professor)

Government Medical College, Bettiah, Bihar[1]
ASMC, Firozabad, Uttar Pradesh[2]
Muzaffarnagar Medical College, Uttar Pradesh[3&4]

Corresponding Author: Dr Suruchi Prakash

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Self-medication is a common practice among people world-wide since olden times especially in ancient Egypt, India and China.[1] The prevalence of self-medication is 60%.[2,3]
Self-medication is defined as '"the selection and use of medicines (includes: herbal and traditional products) by individuals to treat self-recognized illnesses or symptoms. Self-medication is one element of self-care" (WHO, 1998). [1]

Self-medication has some potential benefits like the person is actively involved in one's health, is self-reliant in preventing or relieving minor symptoms and is quite convenient. It lowers cost burden from patient point of view and reduction in work absenteeism. The potential risks of self-medication are scary as if incorrect self-diagnosis is made it can lead to incorrect drug, incorrect dosage and incorrect route of drug administration. The adverse drug reaction may get unnoticed. There is high possibility of drug abuse also.[2,3]
Among drugs used for self-medication, drugs for cold and cough tops the list followed by analgesics and anti-pyretics.[4]
According to another study, the analgesics and antipyretics are the most commonly self-administered drugs.[5]
Cough is a common symptom encountered daily in our clinical practice.
Cough is protective reflex evoked by stimulation of airways. As a result, there occurs rapid expression of air against a transient closed glottis. The cough reflex is a complex process as it involves both central (CNS) and peripheral nervous system as well as smooth muscles of bronchial tree.
It commonly accompanies the viral fever. Since the passage of covid wave, the survivors complain of persistence of cough for more than a week, which is quite troublesome.
The pathology of cough reflex is diverse. We will limit our study in context to the dry unproductive cough. Antitussives are used as the main stay of treatment. These act centrally in CNS to raise the threshold of cough center as well as peripherally in the respiratory tract by reducing tussal impulses. Antitussives are beneficial only for dry non-productive cough. It has been classified into 2 groups opioids and non-opioids. Among the two groups, non-opioids are preferred due to less addicting, less abuse potential and even less constipating effect. The drug most commonly used is Dextromethorphan. Its d-isomer possess antitussive action and has no effect on mucociliary clearance function. The potency is equal to codeine. The effect lasts for 5-6 hours. The adult dose is 10-20mg every 4 hours or 30 mg every 6-8 hours. The dose should

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not exceed 120mg. It is even available as an extended-release suspension where twice daily administration is sufficient.
Many cough syrups are available as over the counter drug and self-medication is also quite common. The most commonly used cough syrup constituents are dextromethorphan 5 mg, chlorpheniramine 2 mg, guaiphenesin 50mg, ammonium chloride 60mg.[6,7]

CASE REPORT

An adult patient presented to medicine OPD in a Government Medical College, Bettiah, Bihar, with complains of development of black patches over elbow and groin region. Initially the patches were light and with passage of time (2-3 days), it darkened and it was itchy. Upon history taking it was revealed that the patient had fever with cough for past 2 days. He took paracetamol (500 mg) for fever and for cough he took syrup containing dextromethorphan. These drugs were purchased from local medical shop without any prescription. There was no history of alcohol abuse. On examination his vitals were normal. He was advised skin reference. Meanwhile cough syrup containing dextromethorphan was stopped. Mouth gargles with saline warm water was advised. A provisional diagnosis of Fixed Drug-Eruption due to containing dextromethorphan was being made. Skin reference was advised where the patient was put on prednisolone ointment for local application on affected sites and was given cetirizine for 5 days. Histopathological examination of the patches was also advised apart from allergic profile test. He was asked for follow up with all the reports.

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DISCUSSION

Cutaneous ADR seen in about 1-2% cases. Fixed drug eruptions (FDE) accounts for 10% of all ADRs. Fixed drug eruptions are characterised by development of hyper-pigmented patches of various shapes (annular, oval) and sizes. Generally, it recurs at same site but can appear at different sites on re-exposure of the same drug. These are of benign nature and can involve any body part like face, tongue, hands, lips and even genitalia.

Studies have reported majority of the patients as adults aged between 18 and 45 years old. The average lag period between drug intake and appearance of FDE was 2.04 days.[8,9]

Though dextromethorphan is commonly used cough syrup, there are limited of adverse drug reactions caused by it. Few articles mention about the fixed drug reactions while other articles mention about psychotic incidences if consumed for longer duration especially in alcoholic addicts or those drug abusers. As per article by S Stubb, FDE caused by it dates back to 1985 where a middle-aged woman was taking it twice -thrice daily for a period of 2 weeks as over the counter drug for cough complain. In the same year, she developed fixed drug eruption which was confirmed by the histopathologic examination of the erythematous patch. A topical provocative test was done and the result came out as positive rechallenge test. In those days, no causality assessment was done.[10]

Another article reports development of erythematous patches on back of left hand and on genitalia following ambroxol cough syrup intake. There was positive past history of same adverse drug reactions.[11]

A 64 years old healthy Japanese woman had taken an antitussive drug containing dextromethorphan tablets for a long time. on 1st April after taking one tablet patient developed erythematous patches from finger-tip size to egg sized with hyperpigmentation in buttocks, back and thigh. The patches had appeared on similar sites. The patient was hospitalized for treatment of the same. A rechallenge test was performed when the lesions had faded.[12,13]

As per Katona et al, a three-year old boy developed lethargy, somnolence, ataxia and nystagmus following accidental intake of 18 Mediquill cough squares (resembling chewing gums). Each square contained 15mg of dextromethorphan. The patient was managed by performing gastric lavage and intravenous Naltrexone (0.4mg). A study by Shauletal, a two-year old boy developed similar symptoms which was managed in a similar way. Thereby, alerting its injudicious use in children for cough syrup.[14]

Dextromethorphan, also known as DXM and poor man's PCP (Phencyclidine like psychological symptoms) is widely used as OTC drug for cold and cough preparations.

Martinale et al article explains about the use of high dose dextromethorphan in a chronic alcoholic female patient who was also using other addicting substances like LSD, amphetamines and marijuana, developed severe psychotic symptoms. She was managed by a unique combination of anti-psychotic drug olanzapine and mood stabilizer divalproex ER.[15]

As per another study by Salili Desai, a similar chronic alcoholic patient of asthma, pulmonary embolism, upper gastrointestinal bleeding developed trembling of hands following consumption of dextromethorphan syrup in escalating doses for a long duration. She was managed with aspirin, pantoprazole, albuterol inhalation, montelukas t and vitamin D, C and Calcium supplements. For the relief of trembling of hands, she was given low oral dose of chlordiazeoxide.[16]

In our case, patient was taking syrup containing dextromethorphan syrup for cough and paracetamol for fever.

The ADR in this scenario was evaluated for causality assessment using World Health Organization-Uppsala Monitoring Centre Causality Assessment Scale

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and it was found to be probable. The severity was assessed by using Modified Hartwig & Siege scale. It was of mild severity as the suspected drug Grinlinctus was stopped and there was no need for hospital stay. The preventability was assessed using Modified Schumock & Thornton scale and this case was found to be definitely preventable.[17,18]

CONCLUSION

People/ patient should refrain from self-medication as many adverse drug reactions occur due to use of drugs. Since only few adverse drug-reaction find a place in textbook, there needs to be continuous monitoring of the ADRs. For this active participation of the healthcare professionals, patient himself/herself or attendants is the need of the hour. Apart from this community awareness programs regarding use of prescription drugs and even non-prescription drugs should be carried out. This article also wants to emphasis on the fact that chronic consumption of the OTC drugs with drug abuse can be life threatening. The early identification, reporting and early treatment ADR is also the most crucial part in treatment of any ailments/illness. The ultimate goal being a better patient care for present and future generations to come.

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(World Health Organization (WHO) -Uppsala Monitoring Centre. The Use of the WHO-UMC System for Standardised Case Causality Assesment[17]

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