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*Guidelines to prevent
the misuse of
Prescribed Medications*

Abuse
Toxicity
Tolerance



Guidelines to Prevent the Misuse of Prescribed Medications

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Message



Drug abuse patterns in every region keep changing based on supply and demand. Even in India, the profiles periodically change, and we come across newer drugs of abuse. The use of heroin came to clinical attention in the 1980s, and since that time, the number of persons seeking treatment for opioid use disorders has been steadily rising.

One noteworthy issue is that with tighter control of illicit drugs, there is usually a concomitant shift towards the misuse of prescription-drugs. This phenomenon, which is present worldwide is now noticeable in India, with growing concerns about the use of prescription opioids, benzodiazepines and other pharmaceuticals. Cough syrups, pain killers, sleeping pills, all of which are of immense clinical value if used judiciously under medical supervision, cause immense physical and mental problems if misused.

Containment of prescription drug misuse involves sensitisation of both the prescribers, suppliers and the consumers. At the time of prescribing drugs liable to misuse and a propensity to dependence, every medical practitioner should prescribe judiciously, explain the rationale for the prescription, warn against continued use and give a time-limited prescription. Pharmacies must dispense only with a valid prescription and educate consumers of the risks of continued use without medical supervision. Most importantly, the consumers of prescribed

drugs must be aware of the potential for certain medications to become habit forming because of their mind altering properties, avoid self-medication, prescription-sharing or advising others to use these medications for sleep problems, mental health problems or chronic pain, without proper medical evaluation and advice.

In this regard, these simple guidelines on preventing the use of prescribed medications are extremely important. NIMHANS is joining hands with the Indian Pharmacological Society (Bangalore Chapter), the Indian Psychiatric Society (Karnataka Chapter) in bringing out these guidelines, which will undoubtedly be handy for all those concerned.

I hope these guidelines will be disseminated widely and will be an important step towards minimising the misuse of prescribed medications

Prof. B.N. Gangadhar

Director and Vice-Chancellor
NIMHANS

Message



ಕರ್ನಾಟಕ ಸರ್ಕಾರ

GOVERNMENT OF KARNATAKA

ಧಾರವಾಡ ಮಾನಸಿಕ ಆರೋಗ್ಯ ಮತ್ತು ನರ ವಿಜ್ಞಾನ ಸಂಸ್ಥೆ, ಧಾರವಾಡ

DHARWAD INSTITUTE OF MENTAL HEALTH AND NEURO SCIENCES DHARWAD
Belgaum Road, DHARWAD-580008



24/08/2016

Greetings from Dharwad.

I take this opportunity to congratulate **Dr. Pratima Murthy** and her team in bring out the **Guidelines to Prevent the Misuse of Prescribed Medications**. Treatment of illness with medication is a common practice across the globe. All sub specialties in medical field do that. Prescription drugs are safe medications that help millions of people provided if it is used as per the doctor's advice for a stipulated period of time. Misuse and abuse of prescription drugs happen by patients, pharmacists, care givers and in young adults and teens. It can lead to doctor shopping, harmful effects to the individual, drug resistance and wastage of medical and human resources including death. In this regard there was an urgent need for national guidelines and appropriately has come from the team belonging to institution of national importance. I am happy to extend support for your efforts on behalf of Indian Psychiatry Society Karnataka Chapter and Dharwad Institute of Mental Health & Neurosciences (DIMHANS), Dharwad.

Best wishes

With regards

(**Dr. Rayeesh B N**)

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Message



15 November 2016

The prescription of certain medications, like benzodiazepines, opioids, analgesics, etc., which are also known to have abuse potential, has risen over the past few years. As a corollary to this, the abuse of these prescription drugs has been menacingly increasing. It is not just by way of prescription for medical reasons, but also through the indiscretion on the part of the clinician, pharmacist and the consumer that the abuse of these drugs has risen. The clinician and the pharmacist, to a large extent, share an equal responsibility of shielding the consumer from entering the predicament of prescription drug dependence. The clinician should shed the helplessness in yielding to the unreasonable demands of certain patients for continued prescription of these drugs with abuse potential. Tackling this problem requires work at the grass root level. The patient receiving these prescription drugs too need to be educated regarding the uses and the possible consequences, in terms of physical and mental health, of such misuse. A vigilant DCGI too has a role in preventing this. Hence, the need for a guideline to prevent the misuse of prescribed medications is only imperative. Having a uniform and implementable prescription guideline helps the judicious use of these medications and I hope that this guideline reaches and benefits the many users.

I also congratulate Dr. Pratima Murthy, NIMHANS and the rest of the team on bringing out this well conceptualised guideline.

Dr Mahesh R Gowda MD

President, Indian Psychiatric Society, Karnataka Chapter (IPSKC)

Message



Prescription misuse is dangerous and may lead to serious consequences. The last decade has seen a substantial rise in the recreational use of pharmaceutical drugs across South Asia. Ready availability, affordability and high purity of narcotic and psychotropic pharmaceuticals make them attractive substitutes for illicit drugs among current and former users. An Indian study has observed incidence of drug induced diseases ranging between 3.4 and 33.9 per cent. Drug abuse kills about 200,000 people worldwide each year, according to a new United Nations (UN) report.

Prescription medication misuse is a global problem. Every day in the US, 2,500 youth (12 to 17) abuse a prescription pain reliever for the first time and more than 15 million people are reported to abuse prescription drugs. In 2011, about 6.1 million persons (2.4 percent) aged 12 and above have been reported to have used prescription-type psychotherapeutic drugs non-medically.

There are many factors responsible for prescription misuse.

Concerns have also been voiced about the quality of doctors writing prescriptions in many parts of India, one study in a rural region of Varanasi found that almost two thirds of prescriptions written were in an improper manner.

The recent emergence of illegal websites (established outside of South Asia in the USA, UK, Europe etc) offering unregulated

trade in a range of prescription-only medicines over the internet is another matter of concern. A recent survey conducted in the UK found that 14% of British adults have bought prescription-only medicines online.

Indian government has strong regulations in place to prevent prescription misuse. But change will come in only with the active participation of all the health professionals and common man.

This book provides useful information and guidelines to the health professionals as well as common man and I am sure will greatly contribute in curbing this issue of Misuse of Prescribed Medications.

Indian Pharmacological Society Bangalore Chapter appreciates the efforts by the authors and we are confident that it will make an impact on the reader.

Dr. Raju Koneri PhD

President IPS Bangalore Chapter
Dean and Professor of Pharmacology
Karnataka College of Pharmacy

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Introduction

Prescription medication misuse refers to the use of prescription medications in ways other than prescribed. Sometimes, a prescription written for a given indication and for a given time period is used by the patient at some other time. The patient may use this for a longer duration than prescribed. This may also be used by someone else other than the patient. This is taken with the idea that prescription medications are safe. But the truth is that medications are safe only when they are taken exactly as prescribed.

Prescription misuse is dangerous and may lead to serious consequences like medical emergencies, hospital admissions, and overdose deaths. Recently, there is an alarming increase of prescription misuse all over the world. Prescriptions are misused for the following purposes:

- Recreation
- Stress relief
- Improvement of sleep
- Dealing with anxiety and depression



Prescription medications are procured in various ways. A teenager may obtain medications belonging to a parent, elder, or a sibling for recreational purposes. An adult may obtain prescribed medication in excess, or may request refill of a previous prescription for inducing sleep or improvement of mood. People may visit a pharmacy, fake their ailments, and obtain medications for sleep or anxiety.

Prescription drugs elicit brain effects similar to that caused by illicit drugs. Commonly misused prescription drugs are those with psychotropic properties. Other drugs that are misused include laxatives, performance enhancing drugs like steroids and anti-histamines (cough and cold medicines). A drug is considered psychotropic if it has a primary action on the central

nervous system (CNS) and the behaviors and reactions that it controls. Some processes controlled by CNS are awareness, attention, emotion, concentration, learning, and judgment. Prescription drug misuse may impair these processes.

Prescription medication misuse: A global problem

According to several national surveys in the United States, prescription medications, especially those used to treat pain, attention deficit disorders, sleep disorders, and anxiety are the second most abused category of drugs after marijuana (cannabis). Data collected for the report of the European School Survey Project on Alcohol and Other Drugs (ESPAD 2007) indicate that 15% of the total student population in several countries in Europe used sedatives or tranquilizers without prescription.

In the United Kingdom, methadone was the main misused medication. In the year 2008, it caused 27% of drug related deaths in 16-24 year olds. Methadone is used in the treatment of opioid addiction. There are reports of misuse of prescriptions containing benzodiazepines, buprenorphine, methadone, and drugs used for treating Attention Deficit Hyperactivity Disorder (ADHD) from France and several Scandinavian countries.

In India, many illicit drug users turn to prescription medications because of the relative ease of getting those from a pharmacy rather than sourcing illegal drugs from the street. Recently in a community survey that was conducted in shopping malls in Bangalore City, 12% of the participants interviewed reported non-medical use of sedative agents in the last 12 months. The sedative agents most commonly used were benzodiazepines. The participants of the survey were primarily young, and looked apparently healthy. Various other reports mention the misuse of injection benzodiazepines e.g. alprazolam, diazepam, and lorazepam; antihistamines like chlorpheniramine, and opiates like pethidine and buprenorphine. Abuse of opiates like tramadol and tapentadol is increasingly being recognized.

With this background, it is evident that there is a need to increase awareness among patients, caregivers, and the general population, particularly teenagers about the harmful effects of prescription medication misuse. This also raises the need for judicious prescribing and prescription monitoring to prevent medication misuse.

Table.1: List of commonly misused prescription medications

| Pharma-cological class | Subclass | Drug name | Trade name* |
|-------------------------------|-----------------------|---|--|
| CNS DEPRESSANTS | BARBITURATE | Phenobarbitone | Gardenal*, Phenobarb* |
| | BENZO-DIAZEPINES | Diazepam Lorazepam Nitrazepam Alprazolam Chlordiazepoxide | Calmpose*, Valium*, Ativan*, Trapex*, Nitrosun*, Anxit*, Alprax*, Librium* |
| | SLEEP INDUCING AGENTS | Zolpidem Zopiclone | Nitrest*, Zaplon*, Zopicon*, Zonap* |
| | | Codeine Morphine Methadone Fentanyl | Corex*, Duramor*, Morcontin*, Dolophine*, Fendrop* |
| OPIOID DERIVATIVES | OPIOIDS | Dextro-Propoxyphene Tramadol Tapentadol Buprenorphine | Proxycvon*, Demerol*, Tramazac*, Ultrazac*, Tapal*, Transdol*, Norphine*, Tidigesic* |
| CNS STIMULANTS | | Amphetamine Methylphenidate Dextromethorphan | Adderall*, Ritalin*, DXM* |

*Trade names mentioned in CIMS 2015 are included

Prescription drugs: Use, misuse and side-effects:

The prescription drugs liable to misuse play an important role in the treatment of a variety of diseases. The uses include the following:

| Drug | Clinical Uses |
|-------------------------------|---|
| BARBITURATES | Epilepsy, Anaesthesia, Anxiety, Non-haemolytic jaundice, Kernicterus |
| BENZODIAZEPINES | Insomnia, Anxiety, Status epilepticus, Muscle relaxation, Preanaesthetic medication, Alcohol withdrawal |
| CODEINE | Antitussive to suppress dry cough |
| MORPHINE | Analgesic, Preanaesthetic medication, Surgical analgesia, Anxiety, Acute left ventricular failure |
| METHADONE | Substitution therapy of opioid dependence |
| BUPRENORPHINE | Substitution therapy of opioid dependence |
| FENTANYL | Analgesic for chronic pain |
| OXYCODONE HCL | Management of moderate to severe pain |
| PROPOXYPHENE | Narcotic pain reliever |
| CNS stimulants AMPHETAMINE | Narcolepsy, Attention Deficit Hyperactive Disorder |
| METHYLPHENIDATE | Attention Deficit Disorder, Attention Deficit Hyperactive disorder, Narcolepsy. |
| DEXTROMETHORPHAN | Management of Cough. |

Reference: Goodman and Gilman. The pharmacological basis of therapeutics, 12th edition, 2011.

Barbiturates

Barbiturates are grouped into short acting, intermediate acting, and long acting. Barbiturates slow down the central nervous system and relax the brain. Recreational users take the drug for a **feeling of relaxation and happiness**. The most frequently misused medications are the intermediate ones as their effect last for three to six hours. They usually come as pills or tablets.

The common side effects of barbiturates at medically recommended dose levels are:

- Drowsiness
- Headache
- Dizziness
- Depression
- Constipation
- Stomach upset

Less common are nightmares, and joint and muscle pain.

At higher doses (overdose), the effects are:

- Impaired judgment
- Poor coordination
- Slurred speech
- Slowed pulse and breathing
- Low blood pressure
- Poor concentration
- Fatigue
- Confusion
- Impaired memory

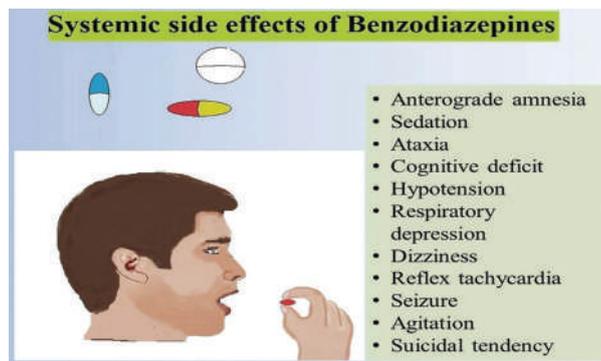
At still higher doses, they can cause coma and death. The greatest risk of misusing barbiturates is the danger of overdose. **Another important point to remember is that combining barbiturates with substances such as alcohol and antihistamines can be lethal.**

Recreational users on barbiturates often exhibit mood swings. The drug sedates them and when the effect wears off, they feel anxious, agitated and nervous. They may be hostile, irritable and angry, picking fights with family members. Sometimes they become paranoid and suicidal.

Benzodiazepines

Benzodiazepines (BZD's) are central nervous system depressant drugs. They are grouped into medium-to-short acting and long acting drugs. BZD's have a high potential for misuse. They are mainly taken along with primary substances like alcohol or opiates. They are sometimes used alone or as an alternative when the user cannot obtain the primary substances. They are used by persons addicted to alcohol partly to alleviate the anxiety associated with alcohol withdrawal and also to experience the hedonic effect of the combination. They are used by polydrug users to experience the augmented euphoric effects. The use of BZD's for sleep induction and relief of anxiety is seen quite commonly among women. BZD's are usually taken orally, injected or less commonly inhaled.

Figure 2:



The common side effects at medically recommended doses are:

- Allergic reactions
- Daytime drowsiness
- Memory difficulties
- Night-time sedation sometimes causing urinary incontinence

The common and known complications associated with BZD misuse are

- Blackouts
- Memory loss
- Violence and criminal behavior
- Risk-taking sexual behavior
- Withdrawal seizures common with administration by Injection :
- Thrombophlebitis
- Deep and superficial abscesses
- Pulmonary micro-embolism
- Rhabdomyolysis
- Tissue necrosis

Non Benzodiazepine sleep inducing agents

The non BZD sleep inducing agents are thought to have a lower risk for misuse. They also have a lower risk of tolerance and dependence, and fewer morning side effects compared to BZD's. However, even these drugs are misused to produce an overly-calming effect and to achieve "high". Users have reported decreased anxiety, mild euphoria, perceptual changes, visual distortions, and hallucinations with these drugs.

The common side effects of these drugs are

- Drowsiness
- Dizziness

- Fatigue
- Headache
- Unpleasant taste
- Diarrhea

These drugs should not be taken for more than 7 - 10 days or at higher than the recommended dose without a doctor's prescription.

Drug dependence and withdrawal of barbiturates and benzodiazepines

BZD's and Barbiturates have the potential for misuse. Therefore, they should be used only as prescribed. During the initial first few days of taking these drugs, a person may feel sleepy and uncoordinated. But, as the body becomes accustomed to the effects of the drug and as tolerance develops, these side effects begin to disappear. If one continues to take these drugs for a long time, larger doses may be needed to achieve the therapeutic effects. Continued use can also lead to physical dependence. Dependence is often accompanied by tolerance, or the need to take higher doses to get the same effect.

Table 3: Benzodiazepine and Barbiturate withdrawal symptoms

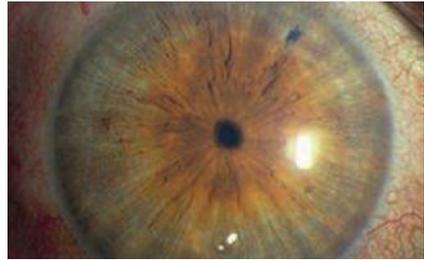
| Mild | Moderate | Severe |
|-------------------------|-------------------------|-------------------------|
| Anxiety | Panic, Palpitations | Hypothermia |
| Insomnia | Decreased concentration | Vital signs instability |
| Dizziness | Sweating, Tremors | Muscle fasciculations |
| Headache | Muscle aches, GI upset | Seizures |
| Anorexia | Insomnia | Delirium |
| Irritability, Agitation | Depression | Psychosis |

Opioid Derivatives

Opioid group of drugs are prescribed by doctors to treat pain. When medically used, opioids alter a person's perception to pain and relieve the muscles and tissues from feeling the ache. The two most commonly misused forms of opioids are prescription pain killers and cough syrups. They are misused because of their ability to produce euphoric effects.

The side effects at medically recommended dose levels are

- Nausea
- Vomiting
- Decreased appetite
- Drowsiness
- Dry mouth
- Miosis
- Elevated body temperature
- Constipation
- Difficulty in breathing



Miosis

Figure 3: Miosis due to opioid use

The signs and symptoms of opioid overdose include decreased level of consciousness, pinpoint pupils, decreased heart rate, shallow breathing, cyanosis (blue lips and nails caused by insufficient oxygen in the blood), seizures and muscle spasm.

Figure 4: Overdose of Opioids



The complications of opioid misuse include problems such as:

- Opioid related deaths
- Complications due to intravenous use
- Social problems like indulging in crime
- Relationship problems
- Psychological problems like craving, guilt, anxiety, loss of cognitive skills and memory

Taking opioids for longer time may cause physical addiction and dependence.

Opioid addiction is one of the most difficult addictions to overcome. Also, such addiction is often associated with relapse despite treatment.

Drug dependence and withdrawal of opioids

Opioids can be used to manage pain safely and effectively. However, when misused, even a single large dose can cause severe respiratory depression and death. Short-term medical use of opioid analgesics rarely causes addiction. Regular use like several times a day, for several weeks or more or longer term use or abuse of opioids can lead to physical dependence and, in some cases, addiction. The symptoms of dependence include:

- Severe craving for the medication

Specific measures to prevent opioid overdose include:

- Reducing irrational or inappropriate opioid prescribing;
- Monitoring opioid prescribing and dispensing;
- Limiting inappropriate over-the-counter sales of opioids.
- Increasing the availability of opioid dependence treatment, including for those dependent on prescription opioids.

WHO recommendations November 2014

- Restlessness
- Muscle and bone pain
- Insomnia
- Diarrhea
- Vomiting
- Cold flashes with goose bumps
- Involuntary leg movements

Opioid withdrawal can be categorized into various grades

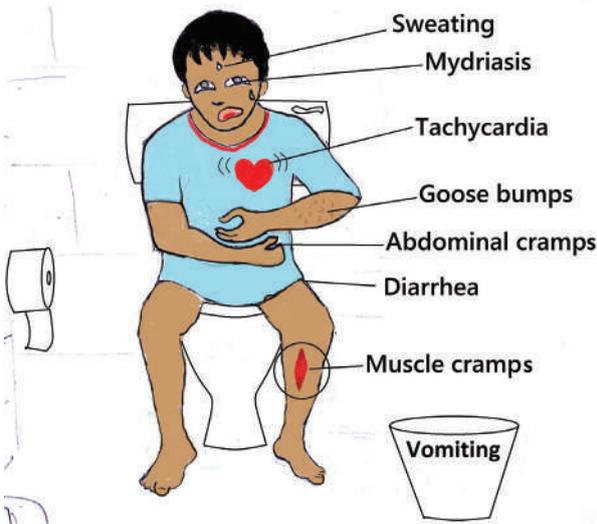
Grade 0: Craving and anxiety

Grade 1: Yawning, lacrimation, rhinorrhea and perspiration

Grade 2: Grade1 + mydriasis, piloerection, anorexia, tremors, hot and cold flashes

Grade 3 and Grade 4: Increased intensity of grade 2 and grade 1, along with increased temperature, BP, pulse and respiratory rate.

Figure 5: Opiate withdrawal



Central Nervous System Stimulants

Central nervous system stimulants drugs are sometimes called 'uppers' because they temporarily increase alertness and energy. They are abused for both “performance enhancement” and recreational purposes to get "high". When used for the former reason, they suppress appetite, facilitate weight loss, increase wakefulness, and increase focus and attention. Their euphoric effects usually occur when they are crushed and then snorted or injected. Some abusers dissolve the tablets in water and inject the mixture. The side effects of stimulant drugs at medically recommended dose levels are:

- Increased blood pressure
- Increased heart rate
- Raised body temperature
- Decreased sleep
- Decreased appetite.

Repeated use of CNS stimulants can lead to feelings of hostility and paranoia. At high dose, they can lead to serious cardiovascular complications. These include irregular heartbeat and stroke. Such doses may also result in dangerously high body temperatures in recreational users. The complications can arise because of insoluble fillers in the tablets that can block small blood vessels. Withdrawal symptoms of CNS stimulants are characterized by depression, hyperphagia (excessive eating) and hypersomnia (excessive sleepiness).

People who have used stimulants chronically, become sensitized to future use of stimulants. In these individuals even small amounts of stimulants can cause symptoms of paranoia and auditory hallucinations.

Regulations to prevent medication misuse in India

The Central Drugs Standard Control Organization (CDSCO), India has amended the list of drugs under Schedule H1 of the Drugs and Cosmetics Act 1945 in August 2013. They have included habit forming drugs in H1 (restricted category). For H1 category drugs, the following criteria are expected to be followed:

- **Log book:** The supply of the drugs specified in Schedule H1 shall be recorded in a separate **register**. At the time of supply, one has to record the name and address of the prescriber, the name of patient, the name of drug and quantity supplied. Such record shall be maintained for three years and be open for inspection.
- **Labelling requirements:** The drugs which belong to schedule H1, should carry the symbol Rx in red on the left corner of the label, and shall also be labeled with the following words in a box with a red border.

SCHEDULE H1- DRUG WARNING

It is dangerous to take the medication except in accordance with the medical advice

Not to be sold by retail without the prescription of registered medical practitioner

Table 4: Habit forming drugs under schedule H1

| | |
|------------------|-------------|
| Alprazolam | Midazolam |
| Buprenorphine | Nitrazepam |
| Chlordiazepoxide | Pentazocine |
| Codeine | Tramadol |
| Diazepam | Zolpidem |
| Diphenoxylate | Lorazepam |

Detection and prevention of prescription misuse: The role of physicians

Physicians play a major role in preventing, as well as in the detection of misuse of prescription medications. A physician should pursue the following preventive measures:

- Recognize the risk of misuse
- Be aware of the mind-altering effects of medications
- Review the patient's past use of medications – e.g. habitual 'pill-popping' behaviors for minor complaints
- Recognize and treat psychological states like anxiety, depression effectively so that the patient need not self-medicate to deal with psychological distress
- Clearly explain to patients the dose and duration of the medications
- Explain the risks of continuing use of prescribed medications

Recognizing the patterns of misuse

A proper history of the patient and close attention plays a vital role in detecting prescription drug misuse. A persistent request for renewal of prescription should alert the physician about the liability of misuse. Very often, the patient may procure medications from an old prescription from the pharmacist. Some desperate patients may even forge prescriptions or visit emergency rooms in order to get prescriptions.

The physician also needs to be alert to certain behaviors exhibited by a patient

- Arriving after regular hours to the clinic and requesting appointment toward the end of the clinic or outpatient
- Exaggerating or feigning medical problems
- Providing a convincing, textbook-like description of symptoms but giving a vague medical history

- Providing an old clinical report and/or X-ray (often from interstate) in support of their request
- Declining a physical examination or permission to obtain past records or undergo diagnostic tests
- Saying that the 'other doctor' was regularly prescribing the medication without any fuss
- Claim to have lost a prescription, or forgotten to pack their medication, or saying their medication was stolen
- Showing an unusual knowledge about opioid medications
- Stating that specific nonopioid medications do not work, or that he/she is allergic to them
- Pressurizing the doctor by eliciting sympathy or guilt or by direct threats

Most prescription drug abusers will deny any recreational motive, such as seeking fun or a "high". They will give some real or perceived medical reason for taking the drug, such as anxiety, depression, fatigue, insomnia or chronic pain. Some may say that they began taking the substance for medical reasons but are now motivated by some pleasant effect of the drug. They may also cite their fear of the effects of drug withdrawal. If the physicians resist prescribing the medications, then the patient may resort to doctor shopping, i.e. consulting different doctors for the same illness. Therefore, a proper history taking plays a vital role in detecting the misuse of prescribed drugs.

When a patient has been identified as misusing prescription medication, the physician needs to ask the following questions:

- What drug is being used?
- How much is being used and for how long?
- How is the patient obtaining the prescriptions?
- Why is the drug being used?
- Is the person addicted or dependent on the drug?
- Why does the patient want to stop taking the drug?
- How can the problem be solved?

As mentioned earlier, though many of the medications are prescribed for medical indications, the physician must exercise some caution while prescribing drugs like sedatives and opioids, particularly for those with sleep, mood and anxiety problems. In the study carried out in Bangalore malls, 9% (N=717) of the participants reported receiving prior

Criteria for dependence (Three or more of the following during the last year)

- Strong desire to take the medication
- Difficulties in controlling onset, termination or levels of medication use
- A withdrawal state when the drug use is stopped or reduced
- Tolerance to the effects of the medication
- Progressive neglect of alternative pleasures or interests
- Persistent use of medication despite knowledge of harm

prescription for sedatives. They received the prescriptions from general physicians in private hospitals, for complaints such as 'cannot sleep, need pain relief, feeling stressed'. Many of these patients can be helped with counseling and proper advice regarding sleep hygiene, relaxation, and other ways of reducing their psychological distress. Those with significant mood and anxiety disorders may be referred to mental health professionals.

Prescription Misuse-What should the physician do?

Once the drug misuse has been identified, the physician faces two tasks - to withdraw the misused drug, and to offer an alternative. The first is usually easy, the second exceedingly difficult. Usually, drug withdrawal proceeds according to the appropriate pharmacologic methods of withdrawal for that particular drug. Appropriate alternatives may include a change to a rational and less hazardous drug regimen, a nonpharmacologic intervention such as psychotherapy, relaxation or physical therapy, or a more complex program that is offered by multispecialty pain clinics. In

addition, it is reasonable to advise patients that they may have to accept a certain amount of discomfort to avoid the consequences of drug dependence.

The management of prescription drug dependence is discussed later.

Detection and prevention of prescription misuse: The role of pharmacists

Pharmacists are some of the most accessible front-line members of the healthcare delivery community. Unfortunately, they also appear to be a major source through which consumers can obtain prescription drugs non-medically. This was revealed in the study conducted at Bangalore. In the study, over 90% participants reported that they had obtained the medications at the chemist's stores in the previous 12 months. They obtained medications either by showing an outdated prescription, or without any prescription. Pharmacist training and sensitization is thus an important measure towards curbing prescription misuse. A logical approach to combating the prescription misuse would be to increase the responsibilities, presence, and role that pharmacists can play in managing this problem.

The pharmacists can identify illegitimate prescriptions by the following criteria:

1. The prescribing pattern of a particular physician drastically differs from others in the same specialty (e.g., more prescriptions for controlled substances or prescriptions for larger quantities of controlled drugs)
2. A physician prescribes antagonistic drugs simultaneously suggesting an "upper/downer" pattern of prescribing (e.g., benzodiazepines and amphetamines at the same time)
3. A patient returns to a pharmacy earlier or more frequently than expected (e.g., prescription quantities do not last as long as expected)

4. A patient arrives with multiple prescriptions for the same medication for different people
5. Many patients appear within a short time period for the same controlled drug from the same physician, or a large number of previously unknown patrons show up with prescriptions from the same physician
6. The patient presents a prescription that shows evidence of possible forgery (e.g., unusual directions or quantities, no abbreviations, apparent erasures, unusual legibility, evidence of photocopying, different color inks, or different handwriting)
7. A patient may request only brand names and be unwilling to accept generics, may report allergies to non-opiate alternative medications, may demonstrate vast knowledge of prescription narcotics, may report that his prescription was lost or stolen, may try to elicit sympathy or guilt in the pharmacist
8. The patient may approach the pharmacist for relief of pain, sleeplessness etc and ask for a 'stronger medicine' as the common analgesics don't work.

Pharmacists can play a vital role in preventing the misuse of prescribed drugs through various means. First, pharmacists must familiarize themselves with current knowledge regarding addiction, brain physiology, pharmacology, available interventions and treatments, and the protocols for referring patients to appropriate medical care. Other ways are by:

- Helping ensure valid prescriptions issued for legitimate medical purposes
- Patient education: safe use, storage and disposal of medications

Patient education regarding the proper usage of medications and the dangers of drug misuse and abuse should be included in discussions with patients. Also, patients should be explained about safe storage of medications. If unused

medicines cannot be returned to the pharmacy, the patients should be instructed to follow any disposal instructions on the medication label and not to flush them down the toilet unless the patient information instructs them to. If patients are not able to find a take-back method, they should be advised to remove the drugs from their original containers; crush them and mix them with an undesirable substance, such as coffee or tea left-over after filtering; then put them in a sealable bag and then dispose. This will help make them less desirable to children, teens, and animals or those trying to obtain drugs for the purpose of misuse.

- Prescription drug monitoring programs: Pharmacists must regularly monitor the sale and quantity of distribution particularly of drugs liable to misuse. The Drug Controller must also regularly monitor trends in distribution and sale.

The challenges of prescription misuse

Prescription drug misuse is a significant health care problem. It is common among young people, as well as the elderly. The most commonly misused prescription medications are sedatives, tranquilizers, opioid pain killers, and CNS stimulants. People usually become addicted to these medications as they activate the brain's reward center, and trigger feelings of pleasure.

Overcoming prescription misuse can be challenging and stressful and often requires the support of family, friends or organizations. Recognizing that a person is misusing prescription or has become dependent on medications is the first step in the road to recovery. Recovery requires a strong commitment to change. The main challenge is that many people who misuse or have become dependent often try to conceal their symptoms and downplay their problems. Also, discovering that someone close uses drugs can generate fear, confusion, and anger in caregivers. It is important to remain calm when confronting a person on drug misuse and convince him/her to seek medical treatment.

The problem of prescription drug misuse can be reduced through proper patient education about the correct use of the prescription, keeping medicines safe and out of reach from children and adolescents, and safe disposal of unused or left over medications.

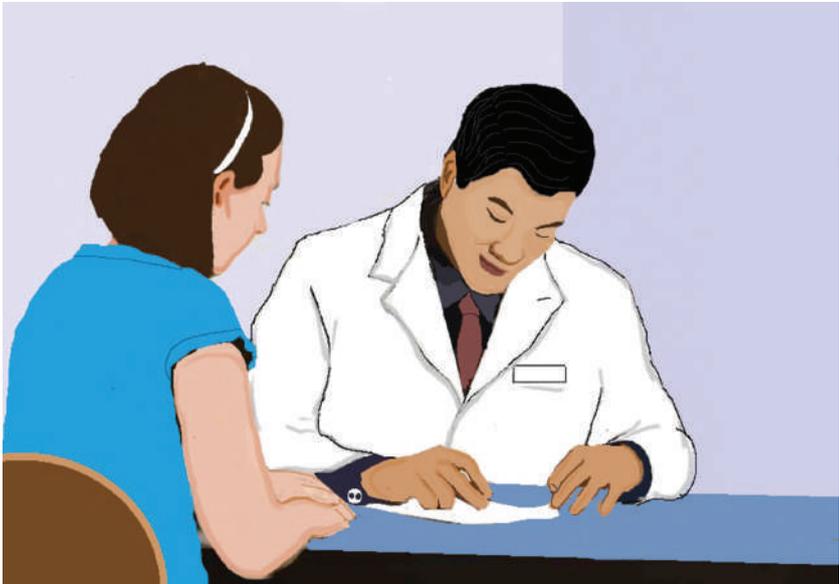
Management of dependence to prescription medications

Dependence on prescription drugs is best managed through effective counseling and pharmacotherapy as indicated.

Role of Counseling

Counseling plays an important role in management of prescription drug misuse, the main purpose of counseling is to find the main reason for misuse or addiction and help the patient to overcome the addiction. Depending on the underlying cause of the addiction identified, an individual treatment plan must be developed for each patient. To help their patients come out of the addiction, the physicians need to educate them about addiction and teach them how to move on in life without misusing substances.

Figure 6: Management of prescription drug misuse



Treatment for drug dependence must be tailored for each patient and includes counseling, combined with pharmacotherapy as necessary.

The important aspects of counseling the patient include the following:

1. Motivate the person to stop prescription misuse. The steps include the following:
 - a. Get the patient to explore his/her own behavior and recognize the need for change
 - b. Help the patient understand the risks of continuing prescription misuse and benefits of stopping
 - c. Identify barriers to changing behavior, and help the person overcome these
2. Reinforce behavior change
 - a. Encourage attempts by the patient to abstain from the medication
 - b. Provide reassurance that withdrawal symptoms will be temporary and stopping will lead to important long-term benefits
3. Improve coping
 - a. Help the patient to understand situations most likely to influence prescription misuse
 - b. Teach the patient to learn alternate ways of coping with such situations
 - c. Help the patient learn to recognize negative thoughts, triggers and emotion by developing responses that do not involve prescription misuse
4. Involve the family
 - a. Educate the family about the risks of prescription misuse
 - b. Make them understand the nature of addiction and the approaches to its treatment

- c. Get their support in assisting the dependent patient to discontinue prescription misuse
5. Educate the patient and his/her family about the drugs liable to misuse. The family members should be advised not to store the excess drugs and also to dispose the unused medications.

The counseling session is an ideal opportunity to briefly also educate the patient about the dangers of prescription misuse.

Pharmacological management of opioid misuse:

Opioid overdose

Known or suspected opioid overdose is specifically managed by an initial dose of 0.4 mg to 2 mg of Naloxone hydrochloride administered intravenously. If there is no evidence of reversal, or no improvement in respiratory functions, it may be repeated at 2 to 3 minute intervals. If no response is observed after 10 mg of Naloxone hydrochloride has been administered, the diagnosis of opioid induced or partial opioid induced toxicity should be questioned. Intramuscular or subcutaneous administration may be necessary if the intravenous route is not available. Since the duration of naloxone is much shorter than that of opioids, the patient must be hospitalized and kept under close observation. Acute life support measures as indicated should be provided.

Opioid withdrawal

Treatment for withdrawal begins if grade 2 signs develop, if a withdrawal program is necessary. Grade 2 signs include signs of Grade 0 (craving and anxiety) and Grade 1 (yawning, lacrimation, rhinorrhea, and perspiration) along with mydriasis, piloerection, anorexia, tremors, and hot and cold flashes with generalized aching.

The mainstay of treatment is the use of opioid agonists. Buprenorphine, a partial opioid agonist can be used for

detoxification (available in strengths of 0.4 mg, 2mg, 4 and 8 mg sublingual tablets) and titrated based on the severity of withdrawal.

Methadone, a synthetic opioid agonist that eliminates withdrawal and relieves drug craving can also be used to treat withdrawal. Methadone should be prescribed as 1 mg in 1 ml oral solution. The initial daily dose is usually 10-30 mg but may be 10-20 mg if tolerance is low or uncertain.

In India, buprenorphine for opioid dependence treatment is to be dispensed only through registered addiction treatment facilities or through trained professionals. At present, the availability of methadone is limited. Both drugs are liable to diversion and misuse and must therefore be strictly regulated. If buprenorphine or methadone is not available for detoxification, symptomatic treatment with clonidine with regular blood pressure monitoring is an option.

Long-term treatment of prescription opioid dependence

Opioid substitution therapy with buprenorphine maintenance (or methadone if available) is the primary long-term pharmacological treatment for opioid dependence.

Opioid antagonists like naltrexone (available in strength of 50 mg tablets) are also used in the long-term treatment of opioid dependence.

Pharmacological management of BZD misuse:

Benzodiazepine overdose

The cornerstone of treatment in benzodiazepine overdose is good supportive care and monitoring. The antidote, Flumazenil, is a competitive antagonist at the central benzodiazepine receptor. Incremental intravenous bolus injections of Flumazenil 0.1 to 0.3 mg is the most specific treatment of pure benzodiazepine overdose; additional boluses or an infusion (0.3 to 0.5 mg/h)

can be given to prevent patients from relapsing into coma. Intramuscular, oral (20 to 25 mg 3 times daily or as required) and rectal administration may be used as alternatives in long term regimens.

BZD and Barbiturate dependence

The most common approach is to slowly taper the medication over a prolonged period (6 to 12 weeks) to minimize the withdrawal symptoms.

Before tapering the drug, if the patient is on short acting benzodiazepines like lorazepam or nitrazepam, it is preferably to shift the patients to long acting benzodiazepine like diazepam, and stabilize for 2 weeks.

Phenobarbitol and carbamazepine can also be used in the treatment of withdrawal. For high dose benzodiazepine dependence withdrawal, it is better to treat withdrawal under proper medical supervision, and it is preferable that the patient is hospitalized.

The long-acting benzodiazepine is then tapered very slowly over several weeks.

Pharmacological management of misuse of CNS stimulants: CNS Stimulant Overdose

The treatment of CNS stimulant overdose is symptomatic. It may include a phenothiazine for psychotic symptoms, a short acting sympathomimetic blocking agent if hypertension is severe, and an antidepressant for severe depression.

CNS Stimulant dependence

Withdrawal treatment for CNS stimulants is imprecise, difficult, and symptomatic. The symptoms of craving associated with withdrawal may be treated with dopamine agonist bromocriptine, 1.5 mg orally thrice daily. Antipsychotic medication may be used to treat the behavioral excitement.

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FAQ's

Is there a difference between physical dependence and addiction?

Yes. Addiction means compulsive drug use despite harmful consequences. It is characterized by an inability to stop using a drug. The consequences are failure to meet work, social, or family obligations; and, sometimes (depending on the drug), tolerance and withdrawal. The latter reflects physical dependence in which the body adapts to the drug, requires more of it to achieve a certain effect (tolerance), and elicits drug-specific physical or mental symptoms if drug use is abruptly ceased (withdrawal). Physical dependence can happen with the chronic use of many drugs—including many prescription drugs, even if taken as instructed. Thus, physical dependence itself does not constitute addiction, but it often accompanies addiction. This distinction can be difficult to make, particularly with prescribed pain medications, for which the need for increasing dosages can represent tolerance or a worsening underlying problem, as opposed to the beginning of abuse or addiction

Do all people who take pain medicines become addicted?

Most people who take pain medicines as prescribed by their doctor do not develop addiction to pain medication. But some do become addicted. People more likely to become addicted to opioid painkillers are those with past history of addicted to other substances or with a family history of addiction.

What are the signs of addiction?

- Loss of control over pain medication use
- More frequent use of the pain medication daily
- Taking pain medication for other reasons besides pain, such as when depressed
- Taking pain medication that was prescribed for another person

Are prescription drugs dangerous?

Drugs are chemicals that can affect the functioning of the body. They are dispensed with a prescription from doctor as they need to be regulated and taken under care. If they are not taken as prescribed, in more doses or by another individual, they can cause serious harm.

What if someone gets out of treatment and starts using drugs again?

If a patient starts using the drug again, he requires to be treated as a case of relapse. As with most chronic diseases, relapse in addiction is not unusual, and signals a need to restart, adjust, or modify the treatment.

Which prescription drugs are commonly misused in India?

In India, benzodiazepines like diazepam and lorazepam; antihistamines like chlorpheniramine; and opioids like pentazocine, propoxyphene, codeine and more recently, buprenorphine and tramadol are most commonly misused. If more prescriptions of CNS stimulants like amphetamines etc. become available for medical conditions, there will be an increased likelihood of their misuse. Hence judicious use need to be advocated. Thus, patient education and careful prescription monitoring are very crucial to prevent prescription misuse.

“The term pseudoaddiction was coined to depict the distress and drug-seeking that can occur in the context of unrelieved pain. The cardinal feature of this syndrome is that the aberrant behaviors disappear when an effective analgesic intervention is administered”

Prevention of prescription misuse: The role of patients

There are several ways that patients themselves can prevent prescription drug misuse.

- a) When visiting the doctor, provide a complete medical history and a description of the reason for the visit. This will ensure that your doctor will understand the complaint and prescribe appropriate medication.
- b) If a doctor prescribes medicine, follow the directions for use carefully and learn about the effects that the drug could have. This is especially required during the first few days during which your body is adapting to the medication.
- c) If you have any doubts about the medication and why it is being prescribed, ask your doctor.
- d) Make sure you have understood the dose and the duration for which you need to take the medication.
- e) Be aware of potential drug interactions.
- f) If you have a family history of any addiction, make sure you inform the doctor. It is well known that persons who are genetically vulnerable are more likely to get addicted or dependent to drugs.

- g) If you have had a past history of alcohol, tobacco or other drug addiction, mention this to your doctor.
- h) Do not increase or decrease doses or abruptly stop taking a drug without consulting your doctor.
- i) Never use another person's prescription.