

Volume XV Issue III Version I

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Over the past two decades, opioid medication abuse among the U.S. population has expanded to a scourge extent. While the U.S. only accommodates 4

Index terms— drug seeking behaviors, opioid legitimate use, misuse, abuse and pain.

My Pain is 10 Out of 10. Patients Vs. Actors in a Clinical Setting

Mariyah Hussain, MD ?, Saeed Ahmed, MD ?, Hena Jawaid, MBBS ?, Mustafa Qureshi, MD ?, Hooria Manzoor, MD ¥, Tazeen Azfar, MD §, Swati Sood, MD ?, Rizwan Ahmed, MBBS ? & Safiullah, MD ? Abstract- Over the past two decades, opioid medication abuse among the U.S. population has expanded to a scourge extent. While the U.S. only accommodates 4% of the world's population, Americans consume 86% of the world's opioids, 99% of the worldwide hydrocodone supply, and 66% of the world's illegal drugs. Prescription opioids are currently the second most misused class of medication following cannabis. Results of the 2010 National Survey on Drug Use and Health (NSDUH) showed that a predicted 22.6 million people aged 12 or older were current or past month illicit drug users. Nearly 7 million individuals among these used marijuana and 5.1 million used painkillers. Only 17.3% of the users of non-therapeutic opioids indicated that they received the drugs through a prescription from a physician. The widely growing use of therapeutic opioids shows hydrocodone topping all prescriptions with 136.7 million prescriptions in 2011, with all narcotic analgesics reaching more than 238 million prescriptions. Opioid analgesics are now accountable for a higher mortality rate than suicide and motor vehicle accidents. The majority deaths (60%) occur in patients who received prescriptions based on prescribing guidelines by medical boards, irrespective of the doses. In comparison, 40% of deaths occur in individuals abusing the drugs obtained through illegal means. The objective of this article is to review the available evidence concerning misuse and differentiate a legitimate user from a drug-seeking addict. We would also discuss various aspects of drug abuse in clinical practice, mainly dealing with these patients in Emergency and Psychiatric settings.

1 I. Introduction

ensory perception and its ability to bring external stimuli into awareness or consciousness have a significant role in the life of a human being. Pain is the major and most discussed, explored, and investigated part of a sensory system. Its severity correlates with the measure of touch, pressure, and vibration senses.

The concept of pain has received significant focus because of its intensity and the motivation, which provokes one to seek a remedy through pharmacological, psychological, or social outlets. Regulation of pain-induced-behavior operates on the basis of two approaches: pain avoidance through anticipation or pleasure approach (1).

We try to understand most of the concepts in the domain of a Bio-Psycho -Social model. Another (evolving) extension of this evaluation model is spiritual. This area, however, is undergoing current studies that might give us further insight in the future.

2 II. Biology of Pain

The biological underpinnings of pain deal with endorphins, enkephalin, and substance P (2)(3)(4). The saturation of GABA, cannabinoids, and nicotinic receptors underlie the maladaptive human behaviors to obtain pleasure. In other words, it is done to suppress nociception to the point of euphoria. The thalamus is a relay station for all sensory information that tries to correspond by activating response team for an action. The two ramifications

of information processes go to the cerebral cortex (rational response) and the amygdala (emotional response), respectively. The final decision depends on connectivity and better transmission. Better the integration of synaptic connectivity and dendritic branching of an area, better or dominant will be the response.

3 III. Psychosocial Aspects of Pain

Most of the unrelenting and excruciating nature of pain does not respond to medical measures despite optimum dosages. This behavior reflects the associated parameters of pain. Mostly, this involves the emotional factor. Associated emotional memory enhances the consequential effect of pain despite adequate pain reduction. Emotional pain does not respond to pharmacological measures and the patient continues to stay in pain whilst showing persistent drug utilization behavior. It is an unfulfilled emotional need that shapes up drug seeking attitudes and establishes dependency.

In psychology, conversion is a known defense mechanism described by Freud in 1895. It is a conversion of psychological distress into a physical symptom. The measure of conflict reflects pain intensity, severity, and nature. As soon as it gets resolved, the pain subsides on its own. It is an unconscious attention-seeking attitude which invites people for an attempt towards conflict resolution, the wish that cannot be verbalized otherwise.

The structure of personality, temperament, childhood experiences, history of environmental stimuli, parenting, interaction, life events, loss and social resources -all these factors determine our coping strategies and adaptation skills. The environmental stimuli can be good (authoritative parenting, supportive structure, academic achievements, ample resources, proper attachment, and encouragement) and can be bad (physical, emotional, sexual abuse, neglect, malnutrition, parental conflicts or separation weak attachment, authoritarian parenting, bullying, discouragement, and poor academic scores). Early experiences set up the basis of survival rules for children. These rules are an arbitrary reflection of their imagination regarding the world and defining their perception (5)(6)(7). The fearful personality architecture would have greater pain anticipation, which can stimulate early drug-seeking behavior (8).

The patients with a traumatic onset, injurious account are five times more at risk of obtaining opioid as a pain relieving strategy as compared to others who suffered the same extent of injuries giving non-traumatic perspective (2). The presence of self-efficacy belief is a belief in one's ability to succeed in a specific situation. If a person thinks, "symptom cannot be reduced, no matter whatever he does", then it is likely that symptoms may not be diminished by adequate measures. However, more optimistic expectation influences pain sensation (9).

The somatosensory amplification can be a communication mode for expressing distress (mainly psychological in nature). It depicts reduced threshold of tolerance, inculcates fear avoidance (10), and retrieval of (associated negative) episodic memory or pain related emotion (anxiety) (10,11). This example can be understood by the presence of chronic pelvic pain sufferers with a history of sexual abuse. It has been demonstrated in many observational studies, maximum saturation does not heal one from pain neither does it reduce demands of pharmacological supplements. This behavior has invoked an idea to reflect the processing of pain in human brain with its associated emotional, memory, and temporal aspects.

4 IV. Legitimate Patient vs a Drug Abuser

Medical user and non-medical drug users can be differentiated on the basis of symptom explanations and premorbid adjustment. With a history of poor work record, occupational and social changes, suspicion of non-medical drug use should be raised. The state of premorbid and comorbid substance use is crucial (12).

Over the past two decades, opioid drug therapy has soared up for non-cancer pain and hence opioid misuse has skyrocketed too (13). The United States Substance Abuse and Mental Health Services Administration defines the non-medical use of prescription opioids as a prevailing issue, which is increasing rather rapidly. According to their sources in 2002 and 2005; this point was further elaborated as taking someone else's medication or taking drugs only for the mere purpose of experiencing its effects (14,15). Prescription drug abuse can additionally entail taking more than the optimum dosage, increasing frequency of drug administration, or even altering the drug formulation (eg. crushing) -all for the purpose of obtaining higher amount of the desired medication. In 2008, 73.8% of the prescription drug overdose deaths were a result of an overdose due to opioid pain relievers, thus highlighting its significant impact on mortality (16).

A study by Cicero TJ et al. showed the initial (genuine) prescription of opioid drug therapy in 79% of males and 85% of females on basis of pain led to 60-70% of them to misuse it in order to get "high" (17). According to Passik et al., the growing problem of the non-medical use of opioids requires more refinement in order to be cured. Hence, consultations with specialists in mental health and other related fields should be encouraged (18).

5 V. Suspicious Behavior to Investigate

Better screening and validated tools can help in making the process of selection more objective and authentic. The assessing instruments should be able to identify problems, predict risk for diversion, and choice for treatment (13). The consideration should be given to three componential categories 1) genetics 2) environmental influence 3) drug-related elements (19). That said, these factors do not affect independently but the effect is dimensional. Without the presence of psychosocial effects and family history, the potential of dependence reduces significantly despite drug-related factors like frequency, dose, etc.

Risk factor stratification should be done to help determine the intensity and frequency of monitoring the patients based on their risk of drug abuse. However, we should not use it to deny pain management in patients with high risk of abuse. All patients should be monitored to a minimal extent, which could then be more detailed based on the category in which they fit (low, medium or high-risk group) (13). A patient with a high risk of misuse tends to exaggerate in order to amplify the consequential effect of pain on a daily life routine, as compared to the user (20). Low pain tolerance is another hallmark for misuse (21). Younger individuals and a history of psychiatric illness are both predisposing factors for abusing prescribed drugs (22). According to a result of a multivariable analysis, there is a significant association linked with past year nonmedical use of prescription opioids with younger age (especially 18-21), Hispanic ethnicity, unemployment status, anxiety problems (panic, depression, agoraphobic, social phobic symptoms), history of alcohol dependence, cigarette smoking, history of other prescription drug misuse, other illicit substance use, and young age of initiating substance use (23). Based on previous studies, Conway and Dowling have found a correlation existing between anxiety and non-medical drug use, abuse, and dependence (24)(25)(26)(27)(28)(29). This correlation raises the possibility that some opioid misuse could be better recognized and understood as self-medication. As in 1999, Fishman has devised excellent measures to deal with these stressful situations where differentiation is difficult to investigate (30): A. One pharmacy /one doctor visit B. If prescription is lost or prescription is utilized earlier, then it cannot be replaced C. Serials of urine drug screening tests.

6 VI. Does the Physical Evidence Fit the Story?

Visser et al, describes in his management approach that a drug-seeking patient may be referred as one "who is determined at all and any costs to support their narcotic dependency" (31). If a patient presents with an unreasonable and disproportionate focus on obtaining a desired specific pharmaceutical agent, without understanding its more appropriate other medical uses; he can be distinguished as a prototypical patient (32).

Signs of drug seeking should be differentiated from signs of addiction. An initial prescription to a medical user can merit subsequent dependence on prolonged use and can cause drug-seeking behavior. The strategy should be aimed to substitute stronger depending agent slowly with one of the weaker affinity drugs (33). Another angle of assessing addiction or getting clue of it is by 1) frequently "missing" prescription slips 2) "lost medications" 3) frequent narration of unpredictable circumstances leading towards more injuries (requiring more medicines) (34). Females are prone to more substance misuse due to affective instability and emotional problems while males' inclination is mostly due to legal purposes (35)

7 Appearance change or alias

There are some explicit signs which can be readily picked up in recent drug users. Frequent Monday absenteeism, progressive impaired concentration, wearing long sleeves when inappropriate, unreliability in keeping appointments and meeting deadlines, increasing personal and professional isolation, change in attitude and behavior with colleagues, insistence on personal administration of narcotic injections to patients, deteriorating functionality, and diminished physical health can serve as helpful indicators. Frequent drug testing cannot be the absolute answer (37). Some psychological responses can point out dependent behavior. The associated behaviors can be exaggerated pain avoidance, anger, depression, fear, mood swings, irritability, and the cognitive pattern of catastrophization (38,39). The effect can be appreciated on the social role, coping strategies, physical and health-related behavior (40)(41)(42).

With the great deal of impact prescription drug use is having on mortality, it becomes essential for physicians to accept responsibility and adopt practices which will help them identify potential drug addicts. Clinicians need to be well informed that acute pain responds well to opioids but not all pain is responsive to this class of drugs. Clinicians have become hesitant to prescribe opioids due to the fear of abuse. On the other hand, they might also underestimate risk of abuse among their patients. Therefore, it is vital to educate clinicians about the 4-As of opioid treatment -providing sufficient Analgesia to patients so that they may be able to engage in Activities of daily living while avoiding any Adverse effects and Aberrant medication-related behaviors (43). It is also highly important to initiate opioid therapy with addressing expectations of the patient regarding the treatment. Clinicians need to be open about benefits and risks of prescription opioids and should ensure that the patient has realistic expectations about the therapy.

External information outlets should be utilized properly such as drug screening tests, spouse interviews, interviews from a close relative or friend, premorbid occupational record or functioning should be inspected. Treatment agreements should be made with patients. These agreements can require more detailed and periodic surveillance. Regular monitoring must require assessment and proper documentation of pain severity, functional competence, psychological health, and advancement toward obtaining treatment goals, treatment compliance, and presence of adverse effects, strange drug-related behaviors, and substance use. The other supporting instruction from external sources such as testing of biologic screening (e.g., urine), interviews with family or caregivers, review of medical records, payer opioid prescription data keeper or input from prescription monitoring programs can be helpful and should be utilized as required (13).

Models for risk stratification can be developed to keep a checklist on early refills, increasing quantity, frequent outpatient visits, and deteriorating social and personal aspects of life. Prescription monitoring programs should

be held in different states and physician practices should be assessed on the basis of evidence-based guidelines and current recommendations should be used to supplement the information to caretakers and families (44). The educating physician can help them improve patient assessment and management too.

The safety principles for pharmaco-vigilance must be implemented to supervise the wider effects of drugs after its marketing (Post-market surveillance). Drug categories should be identified which contain addiction potential. As the reward circuitry is present in the brain (mesolimbic pathway), thus most of the drugs crossing the blood-brain barrier hold a dependency potential, mainly stimulants, sedative-hypnotics, relaxants, opioid analgesics, anesthetic agents, and anticonvulsants. Regulatory measures should include advertisement of disadvantages associated with abuse, misuse, and addiction. Behavioral strategies should be shaped up to deal addiction and dependence (45). The practitioner must be vigilant in prescribing opioids and should be able to enhance his own endeavors to halt substance abuse, but at the same time caution should be exercised not to jeopardize pain management in patients who are likely to benefit from it.

There is still little known about how many people take opioid for a legitimate medical condition before they later transition into the phase of non-medical opioid usage. There is also insufficient data describing the illicit market for prescription opioid (46,47). Therefore, Zacny et al, suggest that there is a need for active monitoring in these areas as non-medical drug use is emerging as a growing public health problem at a rapid pace. Likewise Vukmir et al believe the key to treating this problem is to target the psychic, physical, and functional components individually. (32 The retrospective analysis is not the only medium of understanding the persistent pain phenomenon, but the prospective examination can also help in revealing the maladaptive behavioral mechanisms. The potential of abuse is increasing due to poor adherence of healthcare professionals with prescription guidelines, impaired checkpoints in primary, secondary and tertiary healthcare systems and lowquality post-market surveillance of drugs. We need to be aware that the best and most effective strategies to prevent and treat the non-medical use of prescription opioids remain undiscovered. According to Vukmir et al, the case has been simplified since we have no disputes regarding the pain treatment in cancer patients and patients with acute pain syndromes. The debate emerges when we deal with patients who present with a "25 out of 10" pain and specifically seek narcotic regimes (32). Furthermore, there is a critical need to introduce awareness campaigns, select clinical criteria and develop weighted scores for identifying aberrant behavior, incorporate prescription drug monitoring programs, and implement health-promoting strategies that will contribute to reducing drug-seeking behaviors. Clinicians need to be reminded that when people do not receive adequate pain control, it makes them desperate. It is imperative that clinicians address these concerns in a nonjudgmental manner, such that does not negatively affect the therapeutic alliance. Therefore, physicians should be educated to consider multiple etiologies for atypical behavior while being compassionate in responding well to the patients' complaints of pain (18). It is quite evident that there is still not enough empirical data available to clinicians in this expertise. Hence, a need to conduct more trials with a formalized and accurate diagnostic criterion will enable clinicians to differentiate adequately between legitimate drug users and drug addicts.



Figure 1:

1

VII. Do's and Don't when a Suspected Drug Abuser Confronts You

a) DO'S

1. According to Health Insurance Portability and Accountability Act (HIPAA), for the purpose of treatment it is legal to share information with other healthcare professionals without the patients consent. Therefore, data should be obtained regarding health care (outpatient) visits.
2. Frequency of prescription utilization and checks on early use behavior.

3. One pharmacy/one doctor rule should be implemented in case of suspicion.
4. Enumerate other medicine's name of the same class to the patient without using medical jargon.
5. Evaluate and confirm suspicious historical and exam findings (36).
6. Other illicit drug usages should be screened out.
7. Patient-provider relationship should be maintained in a practical manner.
8. Patient's autonomy should be maintained within legal boundaries.

Figure 2: Table 1 :

b) DON'T

1. Patients should not be forced to reveal their identities and show diagnosis to pharmacists.
2. The possibility of under treatment should be examined (e.g. under-treating a patient with genuine health care needs).
3. Do not show discriminatory behavior towards potential drug user. The practice should be discouraged not the person.

VIII. How do i Identify a Drug Impaired Co-Worker?

IX. Our Responsibilities as a Physician

X. Discussion

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Figure 3:

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