Screening for Abuse Risk in Pain Patients

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Abstract

As opioid prescribing has dramatically expanded over the past decade, so too has the problem of prescription drug abuse. In response to these now two major public health problems – the problem of poorly treated chronic pain and the problem of opioid abuse – a new paradigm has arisen in pain management, namely risk stratification. Once a prescriber has determined that opioids will be used (a medical decision based on how intense the pain is, what has been tried and failed and, to some extent, what type of pain the patient has), he/she must then decide how opioid therapy is to be delivered. Different models of delivery of opioid therapy can be utilized, beginning the process with a risk assessment that is highly individualized to each patient. Recently, researchers have produced a wide variety of literature regarding assessment tools to be used for this purpose. And while there remains a need for larger prospective studies to examine the ability of each tool to predict aberrant drug-taking behaviors, clinicians can and should utilize one or more of these screening tools and understand their benefits and limitations. This chapter will describe the nature of current screening assessments, their potential for use in the pain population in various settings, past clinical observations and suggestions for moving forward.

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Millions of Americans are impacted by chronic pain, a major health concern in the USA that not only reduces productivity among the population, but also undermines their quality of life. Depression, anxiety and sleep disturbance are among the many physical and psychological comorbidities which patients experience [1]. Despite advancement in pain treatment and management, chronic pain continues to be problematic due to a variety of complicating factors.

Healthcare providers are often reluctant to address the concerns of pain patients for a number of reasons. Treatment of chronic pain can be complex and requires a multidisciplinary approach, which is becoming increasingly difficult to provide due
to poor reimbursement from managed care organizations. Practitioners may be skeptical of a patient that lacks the objective signs of physiological stress. Prescription drug abuse and a hostile regulatory climate have caused clinicians to shy away from prescribing opioids, especially to patients who have a history of abuse, suggesting a greater risk for repeat abuse [2, 3].

However, the paradigm of long-term opioid therapy has shifted from past stigmas and fear of opioid use to an emphasis on the importance of finding a balance between safety and effectiveness in treatment. Both undertreated pain and aberrant drug-related behavior have become significant public health problems. The clinical community must adopt risk assessment and monitoring practices in order to enforce a universal standard of optimal treatment. It is crucial that prescribers utilize risk assessment tools in addition to their clinical judgment to guide them toward the most appropriate treatment regimen for a particular patient. As such, many instruments have been designed to help screen for abuse risk in pain patients being considered for opioid therapy. The use of assessment tools fulfills the requirement for due diligence in the areas of screening for the patient’s vulnerabilities and incorporating the results of these assessments into treatment planning. Additionally, the use of validated tools not only helps guide the assessment, but when incorporated into the medical record, also upgrades the clinician’s documentation of this assessment.

**Pain and Substance Abuse**

The USA has seen a substantial increase in prescriptions of pain medicines, although chronic pain remains poorly treated [4]. There has been a wider availability of opioids, which has created larger concern about abuse. To illustrate, 9.4 billion doses of opioids were consumed from 2002 to 2005, and 190 million opioid prescriptions were written during this time [5]. According to the SAMHSA (Substance Abuse and Mental Health Services Administration), opioids became the new drug of choice, displacing marijuana for the very first time. In addition, the National Survey on Drug Use and Health data reported at least 430 million doses abused in 2006 [6]. Clinicians rationalize that although opioids are effective, there is potential for drug abuse and diversion. Unlike prescription of any other medication class, prescription of opioids requires a treatment agreement or documentation of informed consent.

Proper assessments should be performed to identify patients with genuine pain, those who may or may not be using their medications properly, as well as those who exaggerate their pain to gain access to opioids. Chronic pain assessment should detail the intensity, quality, location and radiation of pain. Additionally, the evaluation should identify the factors that increase and decrease the pain, as well as review the effectiveness of all interventions that have been tried to relieve pain.
Pain Assessment

The influence of pain on sleep, temperament, stress levels, function at work, relationships and recreation should be assessed as these areas may be influenced by pain treatment. In addition, the presence of baseline scores prior to administering an intervention can help clinicians measure the effectiveness of treatments. There are already a number of general pain screening instruments, such as the Brief Pain Inventory, that were developed to help assess these areas [7–9]. While these tools have proven useful for a generalized assessment of pain, additional measures must be employed to examine the potential risk of aberrant behavior.

The following is a compilation of many of the available risk assessment instruments for opioid abuse. Although not a complete answer, this list can help physicians determine if they are within or outside the guidelines of peer-approved prescribing methods. The descriptions of each measure include details regarding their mode, ease of administration, psychometric properties and target population, as well as the aspects of addiction that each tool is designed to monitor or predict.

Screening Tools for Pain Populations

Atluri Screening Tool
Atluri and Sudarshan [10] developed a clinician-rated screening tool to detect the risk of questionable opioid use in patients with chronic pain. The authors identified 6 clinical criteria considered demonstrative of opioid abuse. Evaluation of the 6 criteria is reviewed by the screening tool through a checklist of questions. Patients respond ‘yes’ or ‘no’ to items related to opioids, opioid overuse, other substance abuse, low functional status, potentially unclear pain etiology, and exaggeration of pain level and severity. Scoring is based on a summation of positive endorsements that can range anywhere from 0 to 6. Higher scores indicate possible aberrant use, with a score of 4 serving as a red flag for such risk. In a case-control study, patients with total scores above 3 evidenced an odds ratio of 16.6 (95% confidence interval: 8.3–33; p ≤ 0.001) for opioid abuse, compared with patients with scores below this cutoff [10].

Initial results from Atluri and Sudarshan [10] appear promising, but it is vital to acknowledge that the study was a retrospective case-control study on patients with nonmalignant chronic pain. This measure has not been assessed in the cancer population or those with acute pain and needs to be applied in prospective clinical trials in order to gain further validation.

Chemical Coping Inventory
The Chemical Coping Inventory (CCI) is still currently in development, and its first trial is underway. What differentiates this instrument from other assessments is its
The CCI anticipates classifying comorbid characteristics with intention of and potential for abuse by a 15-item, 1-factor scale. The CCI assesses somatization, sensation seeking, alexithymia and overcentrality of drug taking. Kirsh et al. [11] have recognized a vast middle ground of chronic pain patients that have a propensity for developing drug use problems that are not necessarily indicative of true addiction. The inventory is designed to separate these patients from those with a classic substance use disorder.

Preliminary progress has been promising, with focus groups of professionals and patients reporting that the items were clear and understandable. The CCI would add a new element to pain treatment planning. It would bridge the gap between internal and external influences with indicative psychological correlates allowing for early integration of psychological treatment and support.

**Diagnosis, Intractability, Risk, and Efficacy Score**

The Diagnosis, Intractability, Risk and Efficacy (DIRE) score [12] is a clinician-rated scale that predicts both patient compliance and analgesic efficacy of long-term opioid treatment in noncancer pain patients. The scale's title denotes the 4 main categories. The ‘risk’ category is further divided into 4 subcategories: psychological, chemical health, reliability and social support. Patients with scores above 14 are considered good candidates for opioid treatment, while patients with lower scores have a potential risk for abuse. In a retrospective analysis, Belgrade et al. [12] found that all factors besides ‘diagnosis’ were significantly related to treatment compliance. It should be noted that though diagnosis is not correlated to compliance, it is included in the measure to rule out patients without conditions associated with moderate or severe pain.

In this study, the DIRE score was very successful at predicting patient compliance, with a sensitivity of 94% and a specificity of 87%, as well as at predicting analgesic efficacy, at 81 and 76%, respectively.

Though the results of the study by Belgrade et al. [12] regarding the DIRE score are very appealing, it is important to note that the study was retrospective and scores may have been biased by case history. Additionally, the population was small and included patients with many types of chronic pain. While additional prospective studies must be done to further validate its utility, the DIRE score has great potential for healthcare providers who prefer clinician-based (as opposed to patient-submitted) reports as the DIRE score would help systematize and quantify the clinicians’ observations [12].

**Opioid Risk Tool**

Based on past research, the Opioid Risk Tool (ORT) covers those factors most closely associated with substance abuse. There are 5 ‘yes’ or ‘no’ items on the dimensions
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of psychological disease, history of preadolescent sexual abuse, age, and personal and family history of substance abuse [13]. Total ORT scores below 3 indicate a low risk for drug addiction, while scores between 4 and 7 suggest a moderate risk, and total scores above 8 predict a high risk. The total score is achieved by finding the sum of positive endorsements on each of the 5 questions. A score for each positive response is determined specifically by patient gender, and the ORT has demonstrated exceptional discriminatory ability in both men and women (c statistical value of 0.82 and 0.85, respectively). The self-administered ORT can be completed in the waiting area and utilized throughout treatment in order to track or recognize potential abuse.

Due to the brevity and simple scoring of the ORT, there is evident convenience in its use. However, like any self-reported diagnostic tool, it is highly vulnerable to deception. Consequently, there may be a divide among clinicians in terms of preference to use the ORT versus a tool that is longer and more cumbersome, but less susceptible to deception.

Screening Instrument for Substance Abuse Potential

The Screener and Opioid Assessment for Patients with Pain (SOAPP-R) was conceptually devised as a screening tool for assessing abuse potential in patients prior to the initiation of opioid therapy. The SOAPP-R is a 14-item self-report measure that is measured on a 5-point scale ranging from 0 (never) to 4 (very often), with a total score of 8 or greater suggesting a high risk of misuse/abuse [14, 15]. The SOAPP-R has undergone a number of revisions and the relatively low cutoff score of 8 was chosen to potentially account for the patients’ underreporting of behaviors.

The SOAPP-R has displayed good psychometric properties, even though the data was correlational and not causal in nature. Also, during the validation of the SOAPP-R, little demographic and medical information was collected, so the baseline risk for the cohort is unknown. Regardless of these concerns, the SOAPP-R could be a clinically valuable screening tool in high-risk pain populations with the continued support of a research program.

Screening Instrument for Substance Abuse Potential

The Screening Instrument for Substance Abuse Potential (SISAP) is a physician-administered, 5-item tool. The SISAP is easy to use and takes only a few minutes for a physician to administer. Following each of the 5 items are two possible directives for the administrator. Based on the response of the patient, the physician will either be advised to stop questions and use caution in prescribing or to proceed to the next question. These 5 questions were developed using data from the National Alcohol and Drug Survey. The 5 questions extracted from the National Alcohol and Drug Survey inquire about the number of drinks on a typical day and in a typical week, use of marijuana in the past year, history of cigarette smoking, and age [16].
A large database of approximately 5,000 pain patients validated this screening tool. When tested, the SISAP illustrated a specificity of 78%, a sensitivity of 91% and an accuracy of 80% for patients who may be at risk of abusing opioids [16]. Notably, the low reported rate of false negatives suggests the SISAP could serve as a quick and simple way to screen substance abuse in a clinical setting.

Despite its initial validation with a notably large cohort of patients, it is unknown why there has not been more testing since the SISAP emerged several years ago. One hypothesis as to the lack of evolution and implementation of the SISAP is that it requires clinicians to ask a collection of specific questions related to alcohol and drug abuse. Nonetheless, its brevity is appealing and additional validation is required to determine the tool’s capacity and usefulness in a clinical pain setting.

**Screening Tool for Addiction Risk**
The Screening Tool for Addiction Risk (STAR) consists of 14 self-administered yes-or-no questions on addiction risk in chronic pain patients. The questions of the STAR cover: cigarette, alcohol and drug use; family or household members with drug or alcohol abuse; visits to pain clinics and emergency rooms, and feelings of depression, anxiety and altered mood. Out of those dimensions listed, individuals responding ‘yes’ to screening questions related to abusing tobacco products, prior treatment in a drug or alcohol rehabilitation facility, or treatment in another pain clinic were more likely to be patients with existing substance abuse (p < 0.05). Analysis suggested that the most significant predictor of addiction was a history of treatment in a drug or alcohol rehabilitation clinic (positive predictive value: 93%; negative predictive value: 5.9%) [17].

Similar to most self-report measures, the STAR has a risk for deception and no correction for lying; however, it has the potential to aid in screening and treatment planning due to its brevity. It has been used with chronic pain patients, but there is a need for larger prospective studies to examine the tool’s ability to predict aberrant drug-related behaviors.

**Screening Tools for Nonpain Populations**

**Drug Abuse Problem Assessment for Primary Care**
The Drug Abuse Problem Assessment for Primary Care (DAPA-PC) is used to screen adult populations for drug and alcohol abuse problems. As one of few assessments, the DAPA-PC is an Internet-based screening tool. There are two levels to this comprehensive computerized system, which was produced under contract with the National Institute on Drug Abuse [18]. Based on the responses to the health and safety screen, which discretely explores substance abuse through associated components of risk and trauma (i.e. depression and physical/emotional abuse) over the past 5 years, the patients may be asked to also complete the drug and alcohol problem screen,
which focuses more directly on drug and alcohol abuse through a series of 12 questions. Patients can complete the entire module privately on a designated computer in the waiting room prior to the first clinic visit. Results are posted immediately to the patient, and if a risk of alcohol or drug abuse exists, motivational messages, advice and additional resources are provided as well. Through this system, the patients’ records and useful healthcare-related links can later be accessed by the clinician to assist in the patients’ care.

Compared to other assessments, the DAPA-PC is arguably more likely to elicit honest responses due to its completion in privacy. Electronic formatting may provide optimal support to clinics with electronic medical records, and the computer administration and scoring saves time and staffing. The DAPA-PC has great potential for utility in pain clinics, but first requires validation among chronic pain patients.

**Drug Abuse Screening Test**

The DAST is a unidimensional scale that can be administered in either a self-report or a structured interview format with ‘yes’ or ‘no’ responses. Items investigate potential involvement with different classes of drugs including prescribed, over-the-counter and illegal drugs. The quick administration and scoring time, in addition to the low price of the assessment, makes it feasible in a variety of settings, regardless of time and financial challenges [19].

There are many validated versions of the DAST: the original 28-item test, a 20-item test, a 10-item test, and an adolescent-directed test. Psychometrics with all versions are excellent, with options of choosing different cutoff scores to obtain desired results of either sensitivity or specificity. After necessary validation trials have been conducted in pain populations, this measure, particularly the briefer versions, could be useful for pretreatment assessments in pain clinics. However, while this assessment successfully predicts substance abuse, it is unknown whether it specifically predicts aberrant behavior during pain treatment.

**Kreek-McHugh-Schluger-Kellogg Scale**

Surfacing in 2003, the Kreek-McHugh-Schluger-Kellogg (KMSK) Scale focuses primarily on a patient’s time of heaviest use of opioids, cocaine or alcohol. The 8-item tool has separate scales for each substance and assesses the frequency, amount, duration, mode of use and preference of substance for the individual. Analyses of sums on all 3 subscales suggest an impressive ability to indentify dependence (for opioids, a cutoff of 9 offered a positive predictive value of 95%, and a negative predictive value of 100%); however, only the alcohol subscale was able to predict severity of dependence [20].

Kellogg and his colleagues are planning to create similar tests for benzodiazepines (sedatives), barbiturates (sleeping pills) and marijuana. A specific test for pain medication does not appear to be on the horizon. Because the KMSK has failed to quantify
drug dependence severity except for alcohol, it does not contribute much to the existing battery of screening measures for pain management clinicians.

**Substance Abuse Subtle Screening Inventory**
The Substance Abuse Subtle Screening Inventory (SASSI) is an instrument designed as an objective measurement of substance dependence of an individual. The third version of the SASSI (SASSI-3) includes both face-valid items that are direct in delivery on lifetime regularity of specific behaviors related to substance use, as well as subtle true-or-false items that have no apparent relationship to substance abuse.

The SASSI-3 has excellent psychometrics and is very promising. The internal consistency of the SASSI-3 is high, with an α coefficient of 0.93. In a cross-validation comparison of 381 patients with clinical diagnoses based on the DSM-III-R, the SASSI-3 offered an overall accuracy of 97%, a sensitivity of 97% and a specificity of 95%. The positive predictive power measured 99%, and the negative predictive power was 90% [21].

The SASSI-3 can be used in a large variety of clinical settings. It is relevant for the early identification of people who may have substance dependence or susceptibility to one. The SASSI-3 acknowledges relevant symptoms that the individual may not perceive. Deception by the individual is potentially averted due to the design of the inventory. Testing consistency, administration and results of the SASSI make it a valuable tool for a clinical setting.

**Two-Item Conjoint Screen**
Commonly used in the primary care setting for rapid administration, the Two-Item Conjoint Screen (TICS) aids in the identification of patients with current alcohol or drug problems [22]. The 2-item conjoined questions are scored on a 4-point scale ranging from 0 (never) to 4 (often); however, a response of ‘rarely’, ‘sometimes’ or ‘often’ will be interpreted as a positive reply. This approach allows patients to minimize their responses while still answering in a positive manner. The items on the TICS were conjoined to inquire about alcohol and drug use simultaneously with the intended purpose of encouraging truthful positive endorsements by eliminating fear of legal consequence, particular drug stigmas and other similar side effects. However, this may have an adverse effect on those only using alcohol, for fear that they may be considered drug users as well.

Brown et al. [22] whittled down a 5-item measure to the current 2-item version, reporting that the 3 items eliminated yielded no additional improvement in the detection of substance abuse. Though the TICS has a high negative predictive value of 92.7%, the positive predictive value is only 51.8%. Furthermore, this tool is more sensitive to dependence than abuse, and has a high false-positive rate. Therefore, despite the advantage of its speed, the TICS probably has little relevance to the pain management clinician.
Addiction Severity Index (ASI)

The Addiction Severity Index (ASI) was developed to function in a host of settings while remaining standardized and reliable [23, 24]. The ASI is noted as one of the most widely used assessments in the USA for treatment planning, as well as for determining substance abuse-related problems and severity. It is administered as a semi-structured interview that addresses 7 dimensions that have been identified as problem areas in individuals abusing substances. The ASI inquires about a patient’s medical status, legal status, alcohol use, employment and support, drug use, family/social status and psychiatric status. The clinician asks about the relevance of each factor over the past month, in addition to within the patient’s lifetime. The severity rating scales range from 0 (no treatment necessary) to 9 (treatment needed to intervene in life-threatening situation). Though its interview format may be time consuming, the ASI may prove useful in making finer distinctions among patients with problems with drug abuse.

Alcohol and Drug Diagnostic Instrument and Substance Use Disorder Diagnostic Schedule

The Alcohol and Drug Diagnostic Instrument (ADDIS), an adaptation of the Substance Use Disorder Diagnostic Schedule (SUDDS), is a structured interview lasting about 45–60 min designed to allow a diagnosis of substance use dependence in accordance with DSM-III-R criteria [25]. The ADDIS has been found to be useful in a number of clinical settings to assess the prevalence of abuse and dependency.

Jonasson et al. [25] conducted a study in Sweden administering the ADDIS to 243 orthopedic and chronic pain patients. According to DSM-III-R standards, 33% had some form of substance abuse disorder, two thirds of which were analgesic abuse/dependence. Although when applying the criteria of the DSM-IV, the prevalence was lower (26%, with a similar distribution of analgesic disorders), substance abuse/dependence was still pervasive. Even though the structured interview of the ADDIS/SUDDS may be time consuming, they are both still useful instruments in assessing dependence or abuse in chronic pain patients.

Documentation

Pain Assessment and Documentation Tool

It is essential that physicians assess patients before selecting a pain management plan and continue to monitor after its initiation. During follow-up, it is also essential that physicians actively pay attention to a patient’s analgesia, activities of daily living, adverse effects and other aberrant drug-related behaviors. These 4 domains are
referred to as the ‘4 As’. When considering whether a patient should maintain the chosen treatment plan, the most significant ‘A’ domain to reference would be the last, i.e. aberrant drug-taking behaviors. This broad domain is composed of a wide range of abnormal behaviors related to drug use [26].

The Pain Assessment and Documentation Tool (PADT) was created by Passik and colleagues to implement consistent documentation of the progress of the 4 As. The 2-sided chart of the PADT provides a focus on key outcomes and pain management in therapy over the course of time. The overall objective was to design a simple charting device that had was fast to complete and was an easy addition to a patient’s medical record. In order to ensure the PADT met the objective of the developers, controlled field tests of the PADT allowed for clinicians to refine and revise the chart accordingly. Therefore, the PADT has demonstrated its ability to be pragmatic and intuitive, and to have seamless integration into any clinical situation. The absence of strict scoring criteria for the PADT charting tool distinguishes the device from other assessment and documentation tools. Evidence from previous trials suggests that abuse and possible addiction can be predicted over a 6-month period if 4 or more aberrant behaviors are shown.

Discussion

Though fairly comprehensive, this list is by no means exhaustive or inclusive of all potentially useful assessment tools for managing pain and predicting substance abuse in chronic pain patients. It should be noted that no prospectively defined criteria assessing the strengths of the study designs were employed in creating this list. In addition, the selection of measures may have been subjectively biased by the authors' experience.

The measures described above vary in administration style, psychometrics and intended applications. Some of them, such as the SOAPP, DIRE and ORT, are targeted at assessing the potential for substance abuse prior to treatment. Once a patient has begun taking opioids, certain measures (TICS, KMSK Scale, DAST, DAPA-PC and SASSI) successfully assess current alcohol and/or drug abuse. Other tools, like the ADDIS/SUDDS, provide structure for diagnosis of a substance use disorder.

Conclusion

Addiction to pain medications is a growing health concern in the USA. Opioids are a useful treatment option in chronic pain and cancer patients, yet clinicians cannot ignore the potential risk for these drugs to be misused and abused. The medical community should utilize screening tools prior to and throughout pain treatment to best
serve both the clinician and the patient. Although some of these measures still need to be further tested, this list should serve as a good first step toward optimal pain management.

References


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