Ontario

Addiction

Discussion paper prepared for

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This medical discussion paper will be useful to those seeking general information about the medical issue involved. It is intended to provide a broad and general overview of a medical topic that is frequently considered in Tribunal appeals.

Each medical discussion paper is written by a recognized expert in the field, who has been recommended by the Tribunal's medical counsellors. Each author is asked to present a balanced view of the current medical knowledge on the topic. Discussion papers are not peer reviewed. They are written to be understood by lay individuals.

Discussion papers do not necessarily represent the views of the Tribunal. A vice-chair or panel may consider and rely on the medical information provided in the discussion paper, but the Tribunal is not bound by an opinion expressed in a discussion paper in any particular case. Every Tribunal decision must be based on the facts of the particular appeal. Tribunal adjudicators recognize that it is always open to the parties to an appeal to rely on or to distinguish a medical discussion paper, and to challenge it with alternative evidence : see *Kamara v. Ontario (Workplace Safety and Insurance Appeals Tribunal)* [2009] O.J. No. 2080 (Ont Div Court).

1. Introduction:

Addiction is defined as the adverse consequences associated with compulsive drug-seeking. In Canada, the economic toll associated with drug and alcohol addiction is approximately $40 billion dollars [1], and in the US such estimates are over $500 billion [2] per year. When one factors in the disability, morbidity and mortality of tobacco and behavioural addictions (e.g. problem gambling, internet), the yearly costs likely exceed $100 billion in Canada. At the same time, addiction assessment and treatment services are greatly lacking in Canada, with specialized treatment services typically available only in urban centres, and demand greatly exceeds treatment capacity. In fact, only about 10-12% of people with addictions actually seek treatment [3], so this lack of treatment capacity is a great detractor to successful addiction treatment and recovery. Fortunately, there is increasing appreciation of drug addictions as chronic medical illnesses, worthy of medical treatment and insurance and disability coverage. To this end, alcohol and drug addictions are classified as disabilities under the Ontario Human Rights Code.

This paper will present a brief overview of the principles behind the assessment and treatment of addictive disorders, and then focus specifically on topics commonly encountered in cases before the Workplace Safety Insurance Appeal Tribunal (WSIAT), such as those with chronic pain disorders and prescription drug (narcotic analgesic) dependency.

2. Definitions (taken from the DSM-IV) [4]:

Addiction: Adverse consequences associated with compulsive drug-seeking.

Abuse: A clinical term from the DSM-IV (Diagnostic Handbook of the American Psychiatric Association) used to denote functional consequences and impairment, and requires one of the four criteria to be met:

a. Use of the drug under hazardous conditions;

b. Drug use that leads to the neglect of ones external obligations;

c. Legal problems arising from drug misuse;

d. Interpersonal problems related to drug misuse.

Dependence: A DSM-IV term which denotes a pattern of chronic and habitual drug use which is characterized by at least three of the following criteria:

a. Evidence of **tolerance** (e.g. same amount of use produces less of an effect, or need to use increasing amounts of the drug to maintain the same effect)

b. Evidence of drug **withdrawal**, defined a cluster of signs and symptoms which appear after cessation of chronic (often daily) drug use.

c. More time spend in obtaining the drug (compulsive drug-seeking)

d. Neglect of personal social and occupational obligations

e. The drug is taken in larger amounts or over a longer period than intended.

f. Persistent desire or repeated failures to cut down or stop use of the controlled substance.

g. The drug use is continued despite the knowledge that the drug may exacerbate a pre- existing physical or psychiatric condition.

3. Description of Pathophysiology

a. **Causation**: Drug addiction is a complex biological process that ultimately is thought to be mediated by sensitization in mesolimbic dopamine system located in the midbrain [5], located in the brainstem, which is modulated by higher brain centers such as the prefrontal cortex. Several other transmitter systems converge on these midbrain dopamine projections, including endogenous opioid peptides (e.g., enkephalins and endorphins), GABAergic, glutamatergic, and endocannabinoid systems. The final common pathway related to the effects of myriad drugs of abuse appears to be activation of mesolimbic dopamine function. Ultimately, the causes of drug addictions are thought to be multifactorial (e.g., related to the interplay of biological, social, psychological and cultural factors).

b. **Clinical Profile**: Drug addiction often progresses from experimental, non-abuse, non-dependent usage to a rapid profile of compulsive drug-seeking and loss of control which proceeds to drug abuse and dependence. Presumably, such progression is mediated by long-term changes in mesolimbic dopamine and related neurotransmitter systems.

c. **Natural History**: Drug addiction is generally a clinical disorder with an onset in teenage years to early adulthood, with peak expression in middle adulthood. In later years, the course of most drug dependence tends to wax and wane, although in alcohol and other sedative-hypnotic addictions, onset may be in later years (e.g. age range of 30-50s) and be manifest by rapid progression (e.g. “telescoping”).

d. **Effects of Drug Treatment on Brain Systems Involved in Addictions**: There is evidence to suggest that with treatment and abstinence from drug use and abuse, many of in the changes in brain function described above in section “a” will eventually reverse, but the time course for this normalization is unknown. However, studies use of drug cue presentation (e.g. exposing drug dependent persons to people, places or things that remind them of previous drug use to stimulate drug craving) suggest that after chronic drug exposure, the brain becomes “hard-wired” to respond to drug cues, which leads to craving which is a proximate mediator of drug use relapse.

4. Diagnosis: How is it made?

a. **Diagnostic Tests**: Typically the presence of drug misuse is detected using objective drug screens in urine, blood or saliva. The clinical diagnosis of abuse and

dependence is based on clinical history, according to diagnostic schedules such as the DSM-IV and ICD-10.

b. **Differential Diagnosis**: The clinical presentations associated with drug abuse can mimic several medical and psychiatric disorders, therefore use of urine and blood toxicology can be quite informative to narrow the differential diagnosis to substance abuse.

5. Risk Factors:

It is important to note that both genetic and environmental factors confer vulnerabilities to the initiation and maintenance of drug abuse behaviours. Probably the best example of these dual contributions comes from the Vietnam Twin Registry Studies [6] where American troops who were identical twins (often adopted away at birth) serving in the Vietnam war were followed after they returned from Vietnam (where they were first exposed to heroin and other drug use), and the highest concordance rates of heroin use were found in the order monozygotic twins > dizygotic twins >> non-twin siblings suggesting the importance of genetic contributions to drug addiction. However, even amongst monozygotic twins the concordance rates were 50-60%, suggesting the importance of environmental factors which also contribute towards drug initiation and maintenance.

Several characteristics have been shown to increase the risk for prescription narcotic use, including male gender, age < 41 years, family history of prescription drug use, personal history of substance abuse or psychiatric co-morbidity, a history of legal problems and motor vehicle accidents [7], and a history of adverse childhood events [8]. Moreover, the increasing availability of prescription drugs over the internet has further contributed to rapid and easy access to these agents, which has also compounded the problems in monitoring their use and abuse.

6. Controversies that Surround Addiction: Sorting the Hype from the Facts

The discussion in this section will focus on two important clinical controversies related to prescription of narcotic analgesics:

a. **Non-medical use of prescription narcotic analgesics**. Despite reductions in the rates of alcohol, tobacco and illicit drugs, rates of prescription narcotic analgesics continue to rise sharply [9]. In the United States, approximately 5% of the population is reported to have used non-prescribed psychotropic medications in the past month, and about two-thirds of this use was of narcotic analgesics. In fact, from 1995 to 2005, the number of Americans abusing controlled prescription drugs jumped from 6.2 to 15.2 million. The most commonly used prescriptions in the USA are hydromorphone drugs (e.g. in combination with acetaminophen), exceeding 100 million in 2005, far exceeding other commonly prescribed drugs such as atorvastatin (63 million) and amoxicillin (52 million). A similar pattern of use appears to be occurring in Canada [1]. Therefore, the economic and social burden of prescription drug abuse is large and significant, and these persons appear to have much higher (8 to 9-fold) associated healthcare costs as compared to non-abusers [10].

Many persons who go on to abuse prescription narcotic pain medication have undiagnosed or under-treated pain syndromes. Despite concerns by physicians and other health care providers that it is undesirable to prescribe larger doses or narcotic pain medication over long periods of time, it is highly recommended that analgesic medications should be prescribed in sufficient doses and in sufficient length of treatment to adequately control acute or chronic pain [11]. However, in cases of insufficient pain relief, patients may escalate their use in an attempt to self-control their pain. The term “pseudoaddiction” has been used in such cases. It has been observed in such cases that: 1) patients are using higher doses to achieve pain relief, not achieve a “high”; 2) with sufficient increases in the narcotic analgesic dose by the treating physician, these aberrant behaviours will subside. Again, the key to success in treating such patient with chronic pain syndromes with narcotic analgesics is careful monitoring and follow-up by the treating physician.

b. **Physicians encountering patients needing acute and chronic pain control who have histories of substance use disorders.** In pain treatment settings, >90% of patients reported receiving opioids for the management of chronic pain syndromes. Rates of drug abuse in these settings have been estimated to be between 18-41% [9], with one study in chronic lower back pain patients suggesting a specific prevalence of 36-56% [12]. While the presence of a history of drug or alcohol abuse should be noted in any patient to whom narcotic medication prescription is being considered, the presence of such a history should not be considered an absolute contraindication [13], as these medications can have clear benefits for pain management in such individuals. Careful monitoring of such patients (as with any patient prescribed these medications) is warranted, and the frequency and quantity of such prescriptions should be minimized, with more frequent visits to the prescribing physician. The use of frequent urine drug testing (UDT) is also an important part of the treatment planning for such patients, and evidence of drug relapse can be quickly obtained. In such cases, the patient can be advised that unless they agree to stop abusing illicit substances or enter drug treatment with evidence of no continuing drug use by UDT, the analgesic pain control treatment may be interrupted, especially in light of concerns about overdoses or drug interactions. The use of screening tools such as the opioid risk tool (ORT) allows prescribers to estimate risk of opioid abuse prior to the initiation of therapy [14]. During treatment, the use of tools such as the Current Opioid Misuse Measure (COMM), which is a tool designed to monitor for aberrant opioid-associated behaviours in patients receiving chronic opioid maintenance analgesic therapies is recommended [15].

7. Protocols for prescribing narcotics to persons with a history of drug or alcohol abuse

It is frequently perceived that use of narcotic pain medications in persons with addiction histories is contraindicated. However, in many cases use of these agents in acute pain settings is necessary and consistent with compassionate treatment. Strategies to minimize the chance of drug diversion and initiation of narcotic pain addictions are also important.

In cases where such prescriptions are required, careful monitoring of prescriptions and usage should be a priority. Agents with longer half-lives and less propensity for

abuse potential (e.g. methadone and buprenorphine) should be considered over short-acting, short-half life agents such as oxycodone and hydrocodone. The use of an opioid treatment agreement (OTA) is highly recommended, as it outlines the therapeutic goals of opioid therapy, responsibilities of both patient and physician, and designation of a single pharmacy source for obtaining prescriptions [16]; such plans have been shown to increase treatment compliance and decrease the risk of illicit drug use or relapse.

The use of accepted pharmacological and behavioural treatments should be strongly considered in such individuals, under close medical supervision. Pharmacological treatments for opioid addiction include naltrexone (opioid antagonist used as a relapse-prevention strategy), and agonist-maintenance treatments (an agonist is an agent which stimulates a drug receptor, mimicking the effects of the endogenous neurotransmitter) including methadone and buprenorphine [2]. Behavioural treatments include drug counseling (both individual and group), motivational interviewing (to engage patients, and build insight into their drug problems), and cognitive-behavioural and social skills training (to teach patients to manage cravings, and reduce exposure to high-risk situations associated with drug relapse). In addition, therapeutic interventions directed to dysfunctional relationships in the patient's life should also be addressed such as that with the spouse and/or family.

8. Issue of Drug Dependence Entitlement which is the Sequelae of Narcotic Pain Medication Treatment for a Compensable Injury

This is unfortunately a common complication and not always easy to predict. In fact the current state of the science in predicting who will become a narcotic abuser after a therapeutic trial of prescription opioids for analgesia is far from accurate, and there is a need for better predictive tests [11]. Nonetheless, the occurrence of narcotic addiction is a predictable sequela of pain treatment for workplace injury, and when it does occur, it is a problem which requires professional treatment and monitoring. Therefore, reimbursement for a compensable injury/condition should be considered if: 1) there is evidence of compulsive drug-seeking with resultant psychological and physical dependence, and significant functional impairment in daily life is present; 2) attempts by the patient and physician who prescribed the narcotics to reduce the severity and consequences of the narcotic addiction have failed. Drug treatment (both pharmacological and psychosocial interventions) is a mandatory part of the evaluation process, and should be done by experienced treatment professionals working in the setting of an accredited treatment facility. A Panel or Vice Chair should consider if it is of benefit to the addicted individual to be compensated up to the completion of successful inpatient and/or outpatient drug treatment based on their progress towards the goals set in their treatment towards addressing their drug addiction, and improving their functioning in service of returning to work.

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