

Social Pharmacology

Analgesic Use Disorders among Orthopedic and Chronic Pain Patients at a Rehabilitation Clinic

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ABSTRACT

Interviews were conducted with 265 orthopedic and chronic pain patients, using a structured diagnostic instrument (ADDIS/SUDDS) concerning their use of analgesics. Twenty-two percent of the patients met criteria for analgesic use disorders in accordance with DSM-III-R; 18.5% fulfilled DSM-IV criteria. Dextropropoxyphene was the most common analgesic prescribed and was used by 47% of the patients who met criteria for analgesic use disorders. It is concluded that patients with chronic pain using narcotic analgesics are at considerable risk of developing analgesic use disorders. Assessment of the use of analgesics should be offered to pain patients taking narcotic drugs.

Key words. Chronic pain; Analgesic use disorders; Dextropropoxyphene; ADDIS/SUDDS

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INTRODUCTION

In the beginning of the 1950s there was a need for a pain reliever that did not have the drug dependency effects of the morphine group and was more effective than paracetamol and acetylsalicylic acid (ASA) and derivatives. Initially dextropropoxyphene (DXP) appeared to meet these criteria. DXP is structurally related to methadone. It was synthesized by Pohland and Sullivan (1953) and its analgesic properties were described by Robbins (1955).

When DXP was introduced into clinical practice in 1957, it gained remarkable popularity worldwide despite the lack of evidence to show that it was any more potent than aspirin or paracetamol (Lawson and Northridge, 1987). Within a short period of time after its introduction, however, it was reported that the difference between the therapeutic and toxic dose was small, and that the drug was potentiated by the intake of alcohol (Segest, 1993).

Although DXP is a narcotic analgesic, the risk of dependence was first estimated to be minimal. In Sweden, DXP was used by alcoholics to strengthen the effect of alcohol rather than as a preparation of primary misuse, which often leads to severe intoxication (Gunne et al., 1976).

In a retrospective study at a detoxification unit, Ng and Alvaer (1993) found that DXP was the first opiate ever used by 67% of the patients, thus suggesting that DXP is a drug of primary misuse and is a real public health problem, especially with adolescents.

Although the potential of DXP for "abuse" was found to be lower than that of codeine, addiction can develop in persons not thought to be at "high risk" and can occur even with normal prescription use. Dependence on DXP seems to develop most frequently in patients with chronic pain (Strode, 1985).

Hoffmann et al. (1995) found that 19.1% of the patients attending a rehabilitation clinic for orthopedic and chronic pain patients in Sweden could be diagnosed as having a current or a history of dependence on or abuse of analgesics according to DSM-III-R (1987) criteria for substance use disorders. This finding indicates that use of analgesic entails a considerable risk of developing an opioid addiction.

Friedman (1990) pointed out that the risk of developing a dependence may be overestimated as a result of the difficulties in distinguishing between "drug abuse" and "drug addiction" on the one hand, and physical dependence and tolerance on the other. He also considered that dependence and tolerance are inevitable outcomes of long-term use of opioids, but are in themselves insufficient for addiction. Indeed, according to Friedman there is evidence that only a small fraction of patients treated with opioids become addicted and that there is little risk of dependence in patients receiving properly administered opioids for pain.

The different opinions concerning the risk of developing abuse of or dependence on analgesics may be partly explained by the difficulties in defining these conditions. DSM-III-R includes criteria for substance use disorders that are descriptive and incorporate both physiological and psychological factors. DSM-IV (American Psychiatric Association, 1994) has now replaced DSM-III-R. Instead of nine criteria of dependence in DSM-III-R, there are seven in DSM-IV. Physiological dependence is now covered by two criteria instead of the three as in DSM-III-R. Since three fulfilled criteria are necessary for a dependence diagnosis in both classifications, the prevalence of analgesic use disorders will probably be influenced by the question of which classification is chosen.

The main purpose of this retrospective study was to document the prevalence of past and present analgesic use disorders, including those with drugs containing DXP or codeine, among orthopedic and chronic pain patients treated at a Swedish rehabilitation clinic. A secondary aim was to compare the prevalence rates based on DSM-III-R and DSM-IV in the studied patient group.

METHODS

All 265 orthopedic and chronic pain patients referred to an orthopedic ward at a Swedish hospital in 1992 for rehabilitation by the Swedish National Health Insurance or by private doctors for further evaluation and treatment were studied. They came from all over Sweden. The patients had been on sick leave for at least 1 month. 61.5% were female and 38.5% were male. The age range was 19 to 68 years (Fig. 1). Sixty-nine percent (168 patients) were married or cohabiters, 16% (39) had been unemployed during the last year, and 23% (56) had been subjected to serious illness or injured within the last 12 months. Thirty-five percent (85 persons) were smokers. Fifty-four percent had one diagnosis, 32% had two, 12% had three, and 2% had four diagnoses when referred to the clinic. Myalgia, myositis, and unspecified muscular pain were noted in 36%, and distortion of the neck, including whiplash, in 29%. Disk degeneration and changes in the cervical spine were present in 17%.

All patients were interviewed during the first week in the hospital, by trained nurses, concerning their consumption of alcohol and drugs. Each interview took approximately 45-60 minutes. The patients were asked about their drug use by using ADDIS (Alkohol Drog Diagnos Instrument) (Swe.), a Swedish version of SUDDS (Substance Use Disorder Diagnostic Schedule). SUDDS was developed by Hoffmann et al. (1989) and validated by Davies et al. (1992). ADDIS/SUDDS consists of a structured series of questions designed to elicit information to permit a diagnosis of substance use disorders in accor-

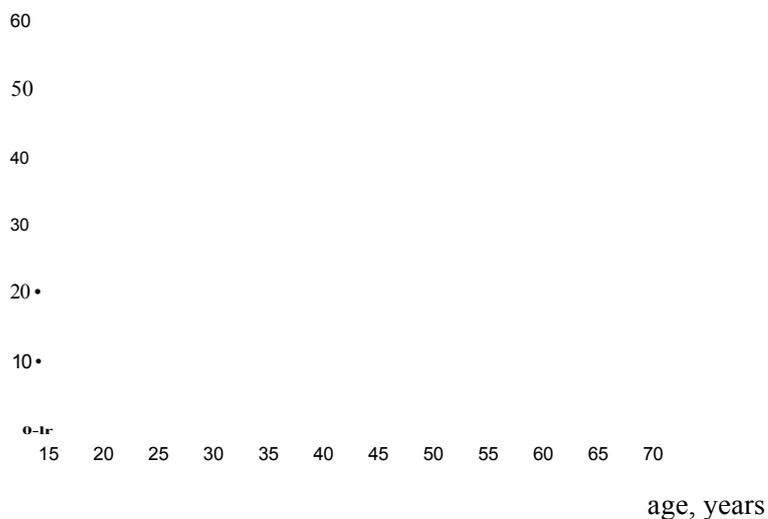


Fig. 1. The age range among orthopedic and chronic pain patients at a rehabilitation clinic in Sweden, $n = 265$.

dance with the DSM-III-R criteria (Hoffmann, 1991). The DSM-III-R diagnosis is classified into *dependence* and *abuse*.

The patients were screened for depression with use of nine criteria in accordance with DSM-III-R. In order to compare DSM-III-R and DSM-IV, we recoded the ADDIS assessment into DSM-IV criteria.

Statistics. Categorical variations were analyzed by chi-square, and a $p < 0.05$ value was used for determining statistical significance.

RESULTS

The ADDIS interview was completed by 243 patients. Of these, 54 patients (22%) were found to show dependence or/abuse of analgesics according to DSM-III-R, while 45 patients (18%) fulfilled DSM-IV criteria. According to DSM-III-R, 39 patients (16%) fulfilled criteria for current dependence, 5 patients (2%) for dependence in remission, and 10 patients (4%) for abuse. The corresponding figures based on the DSM-IV criteria were 30 (12%), 10 (4%), and 5 (2%), respectively (Table 1).

Table 1.

Prevalence of Analgesic Use Disorders According to DSM-III-R and DSM-IV Criteria among Orthopedic and Chronic Pain Patients at a Rehabilitation Clinic. The Diagnosis Is Classified into Current Dependence (within the last year), Past Dependence (more than a year ago), and Abuse, n = 54 (DSM-III-R) and 45 (DSM-IV)

	DSM-III-R		DSM-IV	
Current dependence	39	(16%)	30	(12%)
Past dependence	5	(2%)	10	(4%)
Abuse	10	(4%)	5	(2%)
Total	54	(22%)	45	(18%)

Thirty-three percent (80 patients) were found to have some form of substance use disorder according to the DSM-III-R criteria and 26% (64 patients) according to DSM-IV. Besides the analgesic use disorders, the result of the ADDIS interviews showed a prevalence of alcohol abuse/dependence of 14.0% with DSM-III-R and 9.0% with DSM-IV. A further 7% (17 patients) fulfilled the DSM-III-R criteria for abuse of or dependence on sedatives, while 4% (10 patients) met the DSM-IV criteria. Eighteen patients (8.0%) met criteria for abuse of or dependence on more than one drug (multiple diagnosis) (Table 2).

Among the 243 patients, 126 (52%) had used narcotic analgesic drugs during the past year, 41 (17%) before but not during the past year, and 76 (31%) had used no narcotic analgesic drugs. Of the 64 patients with diagnosis, 49 (77%) had used one drug, 13 (20%) had used two drugs, and 2 patients (3%) had used three drugs.

Table 2.

Prevalence of Substance Use Disorders According to DSM-III-R and DSM-IV Criteria among Orthopedic and Chronic Pain Patients at a Rehabilitation Clinic, n = 243. Eighteen Patients (7%) Had a Multiple Diagnosis, Which Meant They Met Criteria for More Than One Drug

Substance	DSM-III-R	DSM-IV
Analgesics	22%	18%
Alcohol	14%	9%
Sedatives	7%	4%
Total	33% (80 patients)	26% (64 patients)

Beside DXP and codeine compounds, the patients used no prescriptive drugs which contained paracetamol or ASA. DXP is the preparation most often used by these patients. The difference between the group with no analgesic use disorder and the group meeting the DSM-III-R criteria for such a disorder was significant ($p = .003$) regarding DXP, and $p = .06$ for codeine (Table 3).

Analgesic use disorders showed no significant relationship with the orthopedic diagnosis at referral, nor with sex, age, or smoking. Eighty-two patients (34%) met screening criteria for depression at the time of the interview. No significant relationship was found between depression and any kind of dependence.

Patients meeting criteria for substance use disorders were given recommendations for various types of treatment. The recommendations fell into six categories:

1. An advisory session with a drug counselor
2. Information on appropriate literature about drugs
3. Alternative pain relief
4. A gradual reduction of the drug and, if possible, total withdrawal
5. Total abstinence from drugs
6. Referral to a drug-user treatment center

All patients with some diagnosis received recommendations 1, 2, and 3, and those with moderate to "heavy" dependence received recommendations 4, 5, and 6. The most frequently recommended categories were a gradual reduction of drugs (42 patients) and referral to a drug-user treatment center (15 patients).

Table 3.

The Prevalence of Use of Different Analgesic Preparations by Orthopedic and Chronic Pain Patients at a Rehabilitation Clinic. Comparison between the Total Group, Patients with No Analgesic Use Disorders, and Patients with Analgesic Use Disorders According to DSM-III-F?

	Total group	No analgesic disorder	Analgesic use disorder
DXP	32%	26%	47%
Codeine	12%	9%	18%
Paracetamol	30%	30%	30%
ASA	5%	5%	5%

'DXP = dextropropoxyhene, ASA = acetylsalicylic acid, n = 243.

Thirty-three patients with a dependence on analgesics and/or sedatives were helped to reduce their use of drugs during their stay at the hospital. They were offered alternative pain relievers, physical training, heat baths, and medical information. In cases where the gradual reduction was not completed, it was continued by the patients own general practitioners. Three patients who had developed a dependence on alcohol were referred directly to a treatment center.

DISCUSSION

Thirty-three percent of the patients met criteria for substance use disorders according to DSM-III-R, a prevalence similar to that found by Hoffmann et al. (1995). A total of 22% met criteria for analgesic use disorders, thus indicating that the risk of developing dependence/abuse of analgesics among chronic pain patients is considerable. When DSM-IV criteria were applied the prevalence was lower, 18%, but still of considerable magnitude.

DXP was the most commonly prescribed drug among the patients at the clinic. This may reflect a tendency for orthopedic physicians to prescribe DXP rather than codeine. This may be a result of marketing on the part of the pharmaceutical companies, or possibly the physicians have become more aware of the risk of dependence through the use of preparations containing codeine.

Statistics show, however, that the defined daily dose (ODD/1000 inhabitants and day during a 12-month period) of *both* the combination DXP + paracetamol *and* that of codeine + paracetamol increased throughout Sweden between June 1990 and June 1995 by 9.8 and 15.2%, respectively (The National Corporation of Swedish Pharmacies, 1995) (Table 4).

Table 4.

A Comparison of the Sale of Distalgesic and of Citodon as Measured by the Defined Daily Dose (DDD)/1000 Inhabitans and Day During a 12-Month Period between 1990 (June) and 1995 (June) in Sweden

Year	Distalgesic ODD	Citodon ODD
1990 (June)	7.671	5.854
1995 (June)	8.423	6,745
		-1-9.8% +15.

A limitation of this study is the lack of information about the medical doses used by the patients. Since the study was retrospective, all patients were discharged at the time of the study. A total reconstruction of the doses was impossible since information in the records was not complete. To reach any conclusions about dependence at low doses or the relationship between doses and dependence, it will be necessary to study the doses specifically. We suggest future research to explore this issue.

According to Friedman (1990), the risk of developing a dependence on analgesics is overestimated as a result of the confusion of terminology. By using DSM-IV criteria for analgesic use disorders as well as other substances, this risk will be minimized.

Our results confirm the suggestion of Strobe (1985) that chronic pain patients are at risk of developing a dependence on DXP if they use it for pain relief. Two-thirds of the patients with analgesic use disorders did not have any other substance use disorder, indicating that the risk of developing an analgesic dependence syndrome among chronic pain patients is not linked to other kinds of drug-use-associated problems.

Thus, periodic assessment of patients using narcotic analgesic drugs is important, even when prescribed doses have been followed. The use of a structured interview conducted according to DSM-IV criteria can facilitate documentation of drug use among chronic pain patients and aid in the diagnosis of "dependence/abuse."

Since our study points in the direction of high risk among chronic pain patients for the development of a dependence on narcotic analgesics, we suggest further research in this area. In order to assess the specific risk, it will be necessary to assess the use of narcotic analgesics among chronic pain patients and to compare it with the number of patients who become dependent.

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RESUMEN

Las entrevistas fueron llevadas a cabo con 265 pacientes ortopedicos y cronicos, usando un instrumento diagnostico estructurado (ADDIS/-SUDDS) en lo concerniente al uso de analgesicos. El veintidos por ciento de los pacientes respondieron positivamente a criterios de desordens analgesicos de acuerdo con DSM-III-R, 18,5% verificaron el criterio DSM-IV. Dextropropoxyphene fue uno de los analgesicos mas comunmente recetado y fue usado por un 47% de los pacientes que respondieron positivamente al criterio de desordenes analgesicos. Se concluye que los pacientes con dolores cronicos que usan analgesicos narcoticos parecen estar en un considerable riesgo de desarrollar desarreglos en el uso de analgesicos.