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USE OF ANALGESIC DRUGS IN INDIVIDUALS WITH SPINAL CORD INJURY

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Objective: **This study set out to elucidate which factors are associated with or predictive for the use of analgesic drugs in patients with spinal cord injury and pain.**

Design: **A cross-sectional descriptive study with a partly prospective cohort.**

Patients: **One hundred and twenty-three patients with a spinal cord injury matched for gender, age, level of lesion and completeness of injury.**

Methods: **Questionnaires consisting of ratings in the areas of pain intensities, pain unpleasantness, life satisfaction, anxiety and depression, and questions about consumption of analgesic drugs were posted to the 123 patients.**

Results: **Of the 101 patients (82.1%) who returned the questionnaire, 90 (46 women and 44 men) still suffered from pain and were thus included in the study. Statistical analysis showed that although the number of pain medications used per person had increased in the last 3 years, the ratings of pain were unaffected. Logistic regression analyses also revealed that the use of pain-relieving medication was associated with higher ratings on the affective component of pain, lower ratings of leisure activities and the presence of stabbing/cutting pain.**

Conclusion: **The affective component of pain is the main predictor for the use of analgesics in patients with a spinal cord injury. Complementary strategies, including a multidisciplinary approach, for relieving the unpleasantness of pain need to be explored further.**

Key words: spinal cord injury, pain, pain unpleasantness, pain discomfort, pain intensity, opiates, polypharmacy.

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INTRODUCTION

Pain as a result of spinal cord injury (SCI) comprises both neurogenic/neuropathic and nociceptive pain (1) and most studies include both classifications when assessing SCI pain prevalence and its consequences. The prevalence of SCI pain differs between populations but recent studies report pain in about 65% of individuals with SCI (2–4), with neuropathic pain being the most common (3–4). About one-third of the patients rate their pain as being severe (2). SCI pain is of major concern since it has been reported to interfere negatively with quality of life (5), vocational status (6–7), leisure/recreational activities (7) and sexuality (8). The higher the severity of pain the greater the impact on daily activities (9).

Neuropathic pain is difficult to relieve. Treatment recommendations are to a large extent based on studies that have assessed the effect in patients suffering pain due to peripheral neuropathic conditions such as post-herpetic neuralgia and diabetic neuropathies. Review articles state that both antidepressants (10–11) and anti-convulsants (11) have a pain-relieving effect in a number of neuropathic pain conditions. The use of opiates in neuropathic pain is somewhat more controversial (10–13).

SCI neuropathic pain probably consists of both central and peripheral pain mechanisms, and since populations with SCI are small, it is difficult to enrol enough individuals with similar pain patterns for a trial. Few studies have therefore focused on evaluating pharmacological options.

Systematic controlled studies of orally administered analgesic agents in SCI are limited (14–20). Today, first-line agents in treating SCI neuropathic pain are tricyclic anti-depressive (TCA) and anti-convulsant drugs (21). Studies have implicated efficacy with intravenous infusions with opiates and NMDA-receptor antagonists (22) as well as opiates administered intrathecally in combination with clonidine (23).

In a recent study carried out at the Spinalis SCI unit in Stockholm (24) we found that 41% of the patients used one or more pain-relieving drugs and that their use was more frequent in the female sample. Eight percent of patients used anti-depressive drugs and 5% anti-convulsants, while 28% used opiates and 19% non-steroidal anti-inflammatory drugs (NSAIDs). Similar results regarding the use of opiates vs anti-depressants and anti-convulsants have been seen in patients with SCI in Denmark (25), the United States (26) and the United Kingdom (7).

In this study we set out to elucidate which factors are associated with or predictive for the use of analgesics in individuals with SCI.

MATERIAL AND METHODS

Patients

This study was conducted at the Spinalis SCI unit at Karolinska Hospital in Stockholm, Sweden, an out-patient clinic for patients with SCI. Spinalis has the responsibility for life-time follow-up in the greater Stockholm area, an area consisting of 1.8 million inhabitants. The

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estimated drop-out rate, i.e. patients who do not receive their rehabilitation and their follow-up at Spinalis, is only a few percent.

In 1999, 456 patients with SCI (76.5% of the total population of patients with SCI in the Spinalis Database at that time) were assessed in a yearly health control (4). Besides the regular health control they were interviewed and asked to fill in pain questionnaires. From this sample, we aimed at matching all women to a corresponding man for age (±3 years), ASIA (American Spinal Injury Association) impairment grade and level of lesion (cervical, thoracic, lumbar/sacral) in order to assess: (a) gender differences (24); and (b) the use of analgesic drugs. Sixty-five women were successfully matched and thus 130 individuals with SCI were enrolled in these 2 studies. The reason behind matching for gender is that the gender ratio in patients with SCI is 3:1 for males and because of this, studies on individuals with SCI often comprise few women.

Three years later, in 2002, a follow-up was carried out. At this time, 7 of the 130 patients were deceased. The remaining 123 patients were again asked to fill in pain questionnaires by post. Of the 123 questionnaires, 101 (82.1%) were returned. By returning the questionnaires, the patients gave their informed consent to participate in our study. One of the questionnaires was incomplete and excluded from the analysis. Of the remaining 100 questionnaires (81.3%), 50 had been sent by women and 50 by men. Ten of these patients stated that they no longer suffered from pain and were thus excluded from the study. A final 90 patients were included in the study, 46 women and 44 men, with a mean age of 53.4 years, range 27–83 (women: 51.6 years, range 27–81 and men: 55.3 years, range 28–83). Mean time since injury was 14.4 years, standard deviation (SD) 10.6. Of these patients, 70 had a traumatic injury.

Of the 22 patients who did not return the questionnaire 13 were women and 9 men, mean age 50.9 years.

The study was approved by the Ethics committee of Karolinska Institutet in Stockholm, Sweden.

Measures

The postal pain questionnaires contained queries about pain intensities, unpleasantness, descriptors and pain drawings. Patients were also asked to report on ongoing pharmacological treatment (name and amount of drug(s) used as well as when starting using the actual drug(s)). Furthermore, life satisfaction and mood were rated.

The scoring of pain intensities consisted of rating the mildest, the general and the worst intensity on a 100-mm visual analogue scale (VAS), with the endpoints "no pain" and "unbearable pain". The condition "pain" was defined as pain and/or ache present for at least the last 2 weeks or recurrent during at least 4 periods of 2 weeks during the last year (27). Pain was classified by the assessing physician as either nociceptive, neurogenic or mixed, based on the following definitions used in the Nordic Spinal Cord Injury Registry (27):

- Nociceptive pain – pain referred to areas with either normal or altered sensibility. The pain is most often described as dull, pressing or throbbing. Clinical examination should point to tissue damage outside the nervous system as a primary cause of pain.
- Neurogenic pain – pain triggered by injury to the nervous system and is referred to an area with, as a rule, altered or diminished sensibility. This pain is often described as burning, stabbing/cutting, pricking. Clinical examination should rule out tissue damage outside the nervous system, or make such a cause for pain unlikely.
- Mixed pain – pain where clinical examination makes it probable that both a nociceptive and a neurogenic component of the pain is present.

The affective component was rated on a 100-mm VAS with the endpoints "no unpleasantness" and "worst imaginable unpleasantness".

Life satisfaction was rated according to the method of Fugl-Meyer and colleagues (28), which is a self-rating instrument used on a national basis for persons with SCI. Nine different variables are rated on a scale from 1–6, where 1 represents "very dissatisfying" and 6 "very satisfying".

The Hospital, Anxiety, and Depression Scale (HAD) (29), which is used for scoring mood, is a self-rating instrument for anxiety and depression consisting of 14 items, 7 on anxiety and 7 on depression. Each question has four alternatives, which are assigned 0, 1, 2, and 3 points. When mood is calculated from the HAD, patients are classified as sufferers from anxiety, depression, or both based on the sum score: "cases", 11–21 points, "doubtful cases", 8–10 points and "non-cases", 0–7 points.

Patient and injury characteristics (age at the time of the study, years since injury, and pain classification) were collected from the data records.

The use of the word "analgesics" in this article comprises the use of prescribed NSAIDs and opiates, as well as anti-depressants and anti-convulsant drugs when prescribed as analgesics. In the analysis, only analgesics reported in the questionnaire (2002) as being used on a regular basis were included. Occasionally used analgesics were not included.

Statistical methods

Ratings of pain intensities and pain unpleasantness were treated as ordinal data in the statistical analysis and thus non-parametric methods were used. Factors associated with the use of analgesics were analysed using a logistic regression analysis. This analysis was based on data from 80 patients. Data from 10 patients were excluded due to missing data. The dependent variable was whether analgesic drugs were used and the independent variables were dichotomized (pain descriptors, anxiety, depression and life satisfaction) or classified into groups of 3 variables (pain intensities and pain unpleasantness). Data are presented as odds ratio (OR) together with 95% confidence interval (CI).

Preceding this test, univariate analyses were carried out; the distribution of observed frequencies of nominal data was analysed with the non-parametric, chi-squared test with 1 degree of freedom. When expected frequencies of nominal data were less than 5, the Fisher exact test was used. Differences between users and non-users of analgesics regarding anxiety, depression, pain intensities, pain unpleasantness and life satisfaction were tested with the non-parametric two sample Mann-Whitney U test. Pain intensities, pain unpleasantness and life satisfaction were compared with pain classifications and tested using the non-parametric Kruskal-Wallis analysis of variance. Differences in the use of analgesic medication were tested pairwise with McNemar's test. A comparison of pain intensities with the number of years and number of drugs used per person were analysed with a rank invariant method (30). The frequency distribution of the number of drugs used is presented as paired data in a contingency table (see Fig. 3). Different marginal distributions indicate a systematic change in the number of drugs used. The VAS ratings of the general pain intensity in 1999 vs 2002 are shown in Q-Q plots, plotting the cumulative proportions against each other. The Q-Q plot coincides with the main diagonal, when there is no group change between the 2 VAS ratings (see Fig. 4). A curve above or below the diagonal indicates a systematic change. The difference between the probabilities of systematic increase or decrease defines the value of relative position (RP), ranging from -1 to 1, where $RP = 0$ means a lack of systematic change. The 95% CI are calculated for the RP values. When the CI span both sides of 0, the RP value is non-significant. The software package SYSRAN 1.0 for Matlab 6 was used to calculate RP and the corresponding 95% CI.

Correlations between pain unpleasantness and general pain intensity, anxiety and depression were analysed with the Spearman rank correlation coefficient. The level of significance was set to 0.05.

RESULTS

Results in the logistic regression analysis

In the logistic regression analysis (Table I), ratings of the affective component of pain or pain unpleasantness and pain intensities were divided into 3 groups: (1) 0–39; (2) 40–69; and (3) 70–100. Anxiety and depression were dichotomized into either non-cases or doubtful cases and cases. Life satisfaction variables were dichotomised into either satisfied (score 5–6) or unsatisfied (score 1–4) (28). The affective component was the main variable associated with the use of analgesic drugs (group 3 vs 1, OR 6.25, CI 1.5–26.3 and group 3 vs 2, OR 5.46, CI 1.6–18.2), followed by a low score on leisure activities (OR 4.50, CI 1.3–15.8) in the life satisfaction instrument and by the presence of stabbing/cutting pain (OR 3.98, CI 1.3–12.0). Ratings of pain

Table I. *Odds ratio estimates of variables in the logistic regression analysis. Rating of pain unpleasantness was divided into 3 groups, (1) 0–39, (2) 40–69 and (3) 70–100 and was associated with the use of analgesic drugs. Low scoring of the life satisfaction variable – "leisure activities" was also associated with the use of analgesics as was the presence of stabbing/cutting pain. Data are presented as point estimates together with confidence intervals (CI)*

Effect	Odds ratio	95% CI
Pain unpleasantness, group 3 vs 1	6.25	1.49–26.32
Pain unpleasantness, group 3 vs 2	5.46	1.63–18.18
Life satisfaction – *leisure activities*	4.50	1.28–15.87
Stabbing/cutting pain	3.98	1.32–12.03

intensity, anxiety, depression, life satisfaction – *life as a whole, vocational situation* – and ADL as well as radiating/shooting pain were removed in the analysis.

The affective component of pain

The affective component of pain was found to be the main predictor in the logistic regression analysis of factors associated with the use of analgesic drugs. In the univariate analysis of pain unpleasantness, when the VAS ratings were used as a continuous variable, the affective component was rated much higher in the group of analgesic users ($p < 0.001$) than in the group of non-users (Fig. 1). The median value of pain unpleasantness in the group of analgesic users was 77 [interquartile range (IQR) 60.9; 91.0] on the VAS compared with 53 [IQR 33.5; 64.5] amongst the non-users. When comparing the rating of pain unpleasantness between those whose pain was classified as being of neurogenic, nociceptive, or mixed origin no differences could be seen.

Pain unpleasantness was positively correlated with pain intensity, $r = 0.68$, but weakly correlated with both anxiety, $r = 0.20$, and depression, $r = 0.33$. A modest correlation was seen between pain unpleasantness and the life satisfaction variable – *life as a whole*, $r = 0.42$.

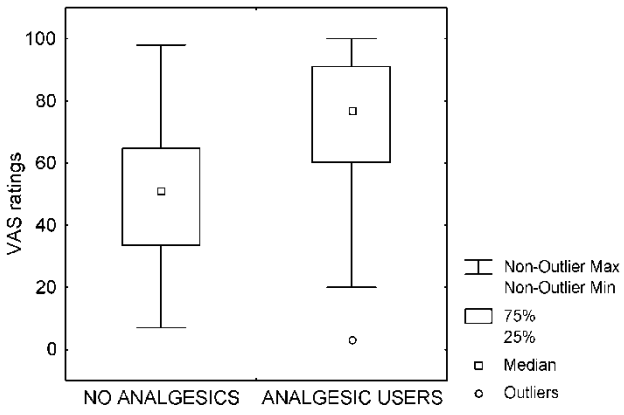

Fig. 1. The affective component of pain/pain unpleasantness. VAS ratings of pain unpleasantness from the assessment in 2002 was significantly higher in the group of analgesic users (median −77) than those not using analgesic drugs (median −53), $p < 0.001$. Whiskers: Non-outliers, min. and max. The boxes represent the 25% and 75% quartiles. Median: □; Outliers: ○.

Life satisfaction

Differences in scoring life satisfaction between users of analgesics and non-users could be seen in the variables *life as a whole* ($p = 0.011$), *leisure* ($p = 0.005$) and *sexual life* ($p = 0.014$) in the univariate analysis (Fig. 2). A strong tendency towards a difference could also be seen in *vocational situation* ($p = 0.059$). There were no differences in the ratings of life satisfaction concerning pain classification.

Pain descriptors and pain drawings

In the univariate analysis, the descriptor *stabbing/cutting pain* was significantly associated with the use of analgesics ($p < 0.001$). The most commonly experienced pain characters were pricking pain ($n = 51$; 56.7%), aching pain ($n = 49$; 54.4%), cutting/stabbing pain ($n = 40$; 44.4%), burning pain ($n = 33$; 36.7%), pressing/tight pain ($n = 30$; 33.3%) and radiating/shooting pain ($n = 25$; 27.8%).

No differences regarding the number of painful areas were seen between users and non-users of analgesics.

Pain intensity

Pain intensity is, of course, related to the use of analgesics, and although intensity was not a main predictor in the logistic regression analysis, it was a statistically significant variable in the univariate analysis. The median value of general pain intensity in those using analgesics was 61.5 [IQR 39.0; 77.0] compared with 47 [IQR 29.0; 57.0] in those who did not use any pain-relieving medication ($p = 0.002$). There was also a significant difference in the ratings for mildest pain, 31 [IQR 16.0; 52.0] compared with 20 [IQR 5.5; 39.0], ($p = 0.013$), and in the ratings for worst pain, 84 [IQR 75.0; 92.0] compared with 69 [IQR 57.0; 82.5], ($p = 0.007$). For pain intensities, significant differences were found between the 3 types of pain classifications when ratings for general ($p = 0.027$) and mildest pain ($p = 0.03$) were compared, but not when ratings for worst pain were compared ($p = 0.35$). General pain received the highest scores from sufferers of neurogenic pain, a median of 63.5, compared with a median rating of 53 from sufferers of mixed pain and 39 from sufferers of nociceptive pain.

Mood

Anxiety. In the univariate analysis scores for anxiety were generally higher ($p = 0.04$) in the group of analgesic users. The median value for this group was 6 [IQR 3; 9] and for non-users 4 [IQR 2; 7]. Amongst the analgesic users, 25 of 43 patients (60%) were classified as non-cases, 11 (26%) as doubtful cases and 6 (14%) as cases. In the group of non-users, 34 (75.5%) were classified as non-cases, 7 (15.5%) as doubtful cases and 4 (9%) as cases.

Depression. The analgesic users also scored higher on the depression scale than those not using pain medication

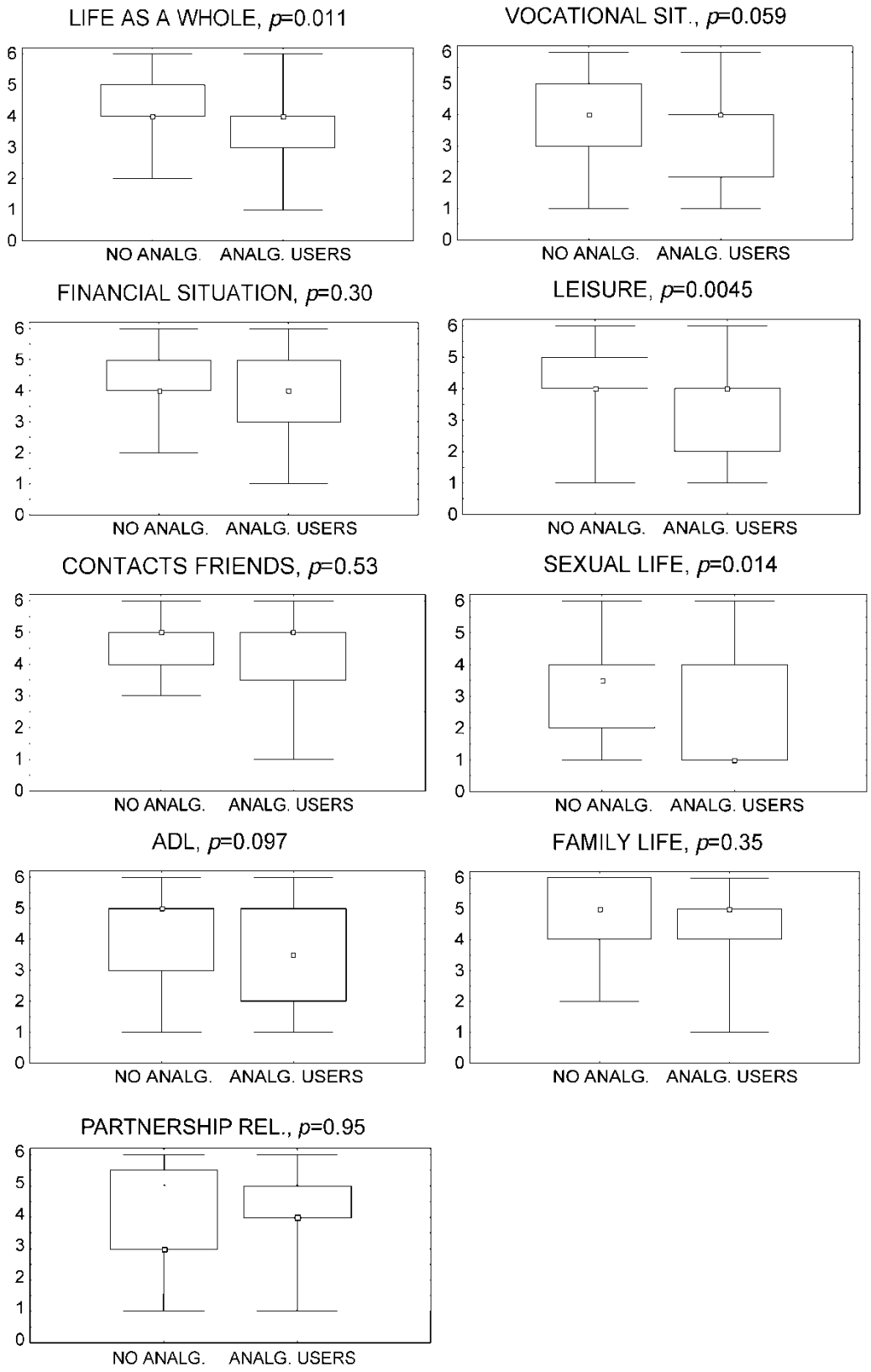

Fig. 2. Life satisfaction according to Fugl-Meyer and colleagues (28), data from 2002. The ratings of "life as a whole", "leisure" and "sexual life" was rated significantly higher in the group of non-analgesic users and "vocational situation" showed a strong tendency towards the same results. The boxes represent a 25–75% range of the results and the whiskers represent the non-outlier minimum and maximum values. The median values are marked with a square in the boxes.

Table II. *Analgesics used in 2002 with regard to pain classification in 1999. The number of patients using each type of drug is presented. Data on pain classification is missing in 1 patient*

	Opiates *n*	NSAIDs *n*	Anti-convulsants *n*	Anti-depressants *n*
Neurogenic ($n = 43$)	10	3	7	5
Nociceptive ($n = 20$)	4	4	1	1
Mixed ($n = 26$)	15	7	2	3

NSAIDs = non-steroidal anti-inflammatory drugs.

($p = 0.013$). The median value in this group was 5 [IQR 3; 8] and for non-users 2 [IQR 1; 5]. Thirty-two of the 43 patients using analgesics (74%) were classified as non-cases, 7 (16%) as doubtful cases and 4 (9%) as cases. Of the non-users, 38 (86%) were classified as non-cases, 3 (7%) as doubtful cases and 3 (7%) as cases.

Use of pain-relieving medication

In the postal survey, the use of drugs was similar to that in 1999. Opiates were the most common drugs, used by 31 patients (34.4%), followed by NSAIDs used by 14 (15.6%). Eleven patients (12.2%) used anti-convulsive drugs and 10 (11.1%) anti-depressive drugs as analgesics. An increased use was seen in the use of NSAIDs, anti-convulsants (especially gabapentin) and in opiates. None of these differences were however significant.

Drugs used in 2002 with regard to pain classification in 1999 are shown in Table II. Since the second part of this study was a postal survey, classification of pain could not be done in the follow-up. Therefore we do not know if the increased use was due to late onset of nociceptive or neuropathic pain. However, the 2 types of drugs that increased suggest that they were prescribed for both nociceptive and neuropathic pain.

In the 1999 assessment only anti-depressants that were prescribed for pain relief were included in the study. In the follow-up we asked patients to note only medications prescribed for pain relief but of course we cannot be sure if all patients were aware of this difference. However, the use of analgesics at the 2 occasions was very similar.

Polypharmacy and pain intensities

The number of pain medications used per person had increased from 1999 until 2002. In 1999, the individuals in our total sample used 1.7 drugs/person (SD 0.7) compared with 2002 where the use had increased to 2.2 drugs/person (SD 1.5). Sixteen of the 32 individuals who used drugs on both occasions had increased their use regarding the number of drugs (RP = 0.28, CI 0.04 to 0.52) (Fig. 3). Ratings of pain intensities were unaffected in the group as a whole, regarding the general (Fig. 4a) (RP = 0.058, CI −0.07 to 0.19), the mildest (RP = 0.078, CI −0.06 to 0.21) and the worst pain (RP = −0.061, CI −0.17 to 0.05). When analysing the medication use in those who had used drugs on both occasions, no decrease in VAS ratings of pain intensity were observed (Fig. 4b).

No of consumed analgesic drugs 2002	No of consumed analgesic drugs 1999								
	1	**2**	**3**	**4**	**5**	**6**	**7**	Tot	CP
7	1							1	1.00
6		1						1	0.97
5								0	0.94
4	2	2	2					6	0.94
3	2	3	2					7	0.75
2	3	2						5	0.53
1	6	6						12	0.38
Tot	14	14	4	0	0	0	0	**32**	
CP	0.44	0.88	1.00	1.00	1.00	1.00	1.00		

Fig. 3. Use of analgesic drugs. Joint distribution of number of consumed analgesic drugs per person 1999 vs 2002 in patients with pain following spinal cord injury, $n = 32$. Out of the 32 patients that used analgesic drugs both in 1999 and 2002, 16 had increased the number of drugs used. Tot = total frequency in respective category; CP = cumulative proportions.

DISCUSSION

In this study we assessed 90 patients with a spinal cord injury and pain in a postal survey. These patients were selected from an original sample of 456 patients (4) that corresponded to 75% of the total population in our area at that time. This group was considered to be a representative sample of patients with SCI. We matched all women against men in a randomized way ending up with 130 patients (24). The remaining 123 at the time of the follow-up were posted a questionnaire regarding, for example, the use of analgesics. We had a high proportion of returned questionnaires, 82.1%, and most of these were adequately filled in. A few patients being unsure of how to fill in the questionnaires contacted us in order to get more detailed information. However, misinterpretation of questions asked is always larger in a questionnaire than in a personal meeting.

Unfortunately, rating of the affective component of pain was not included in the original design from 1999, and this is why we have not been able to compare the development of these data. This was a pity since this variable was the main predictor for the use of analgesics.

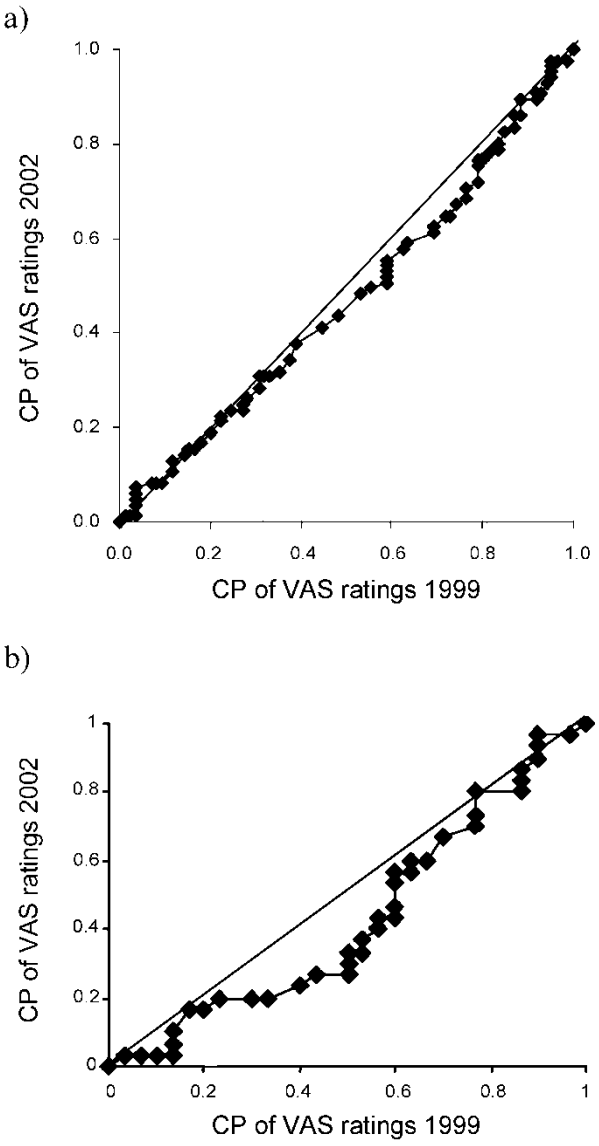

Fig. 4. Ratings of general pain intensity. Cumulative proportions (CP) of rated general pain intensity on a VAS, 1999 vs 2002 in (a) the total sample ($n = 85$; data missing from 5 patients), RP 0.058, CI −0.07 to 0.19 and (b) the subgroup analgesic users ($n = 30$; data missing from 2 patients), RP 0.14, CI −0.10 to 0.38.

The affective component of pain

In our study we report that the use of analgesics in patients with SCI was found to be associated with pain unpleasantness, low ratings of leisure activities and stabbing/cutting pain. Pain unpleasantness, but not intensity, was predictive for the use of analgesics. This suggests that attention should be focused on the affective component of pain already in the pain analyses. One question, though, is why some patients perceive their pain to be more unpleasant than others? Wade et al. (31) have reported that anxiety and frustration were predictive for the emotional unpleasantness in patients suffering from chronic pain conditions. In our study anxiety is not a likely explanation as this variable was only weakly correlated with the affective component.

Use of opiates

The association between high ratings of pain unpleasantness and the use of analgesics might partly explain the considerable use of opiates found in our study. As mentioned in the Introduction, the effect of opiates in neuropathic pain is controversial. Those speaking in favour of these drugs mean that the use of opiates is underestimated and that they might also have a beneficial pain relieving effect in (at least peripheral) neuropathic pain. Those who are hesitant about the use of opiates say that it is the affective component that is diminished, not the intensity.

When treating SCI pain, there is little scientific support for the use of opiates or suggested first-line agents TCA and anti-convulsants (Table III). The only controlled study for TCA in SCI (14) lacks support for this kind of treatment strategy. Although studies on gabapentin are underway, and this approach might be beneficial, only 1 controlled study on SCI has been presented (15) and this indicates that there might be a beneficial effect.

When the conventional pharmacological treatments fail to decrease pain intensity or pain unpleasantness, we need to focus more on psychological treatment strategies which might influence, if not the sensory-discriminative component, then the affective-motivational component, anxiety, depression and quality of life. Few studies have assessed the effect of psychological interventions in neuropathic pain conditions (32), but there is no reason to believe that this strategy would not be as effective as it is in other chronic pain conditions. Several studies

Table III. *Summary of controlled studies on orally administered drugs for neuropathic pain in patients with spinal cord injury*

Author, year, ref. no.	Agent	No of patients enrolled	Outcome
Cardenas et al., 2002 (14)	Amitryptilin	84	Amitryptilin = placebo
Tai et al., 2002 (15)	Gabapentin	14	Gabapentin = (>)placebo
Harden et al., 2002 (16)	Topiramate	14	Topiramate = (>)placebo
Finnerup et al., 2002 (17)	Lamotrigine	30	Lamotrigine = (>)placebo
Chiou-Tan et al., 1996 (18)	Mexiletine	15	Mexiletine = placebo
Drewes et al., 1994 (19)	Valproate	20	Valproate = placebo
Davidoff et al., 1987 (20)	Trazodone	19	Trazodone = placebo

in populations with no SCI describe psychological interventions as a means of relieving the unpleasantness of pain rather than the intensity of the pain (33). This also needs to be explored more deeply in populations with SCI, and such studies are underway.

Leisure activities

In our study, the use of analgesics was also found to be associated with low ratings of leisure activities. Previous studies have reported that severe pain negatively affects quality of life (5), vocational status (6–7), leisure/recreational activities (7) and sexuality (8) in patients with SCI.

Stabbing/cutting pain

Stabbing/cutting pain was the third most common pain character reported by our patients, present in 40 individuals (44.4%) (14 patients classified as having neurogenic pain, 12 with nociceptive pain and 14 with mixed pain according to the classification in 1999). Compared with the other pain qualities, stabbing/cutting pain was not perceived as being more intense regarding either the general pain or the worst pain intensity.

Median values of the general pain intensity varied between 49.5 and 58.5 where stabbing/cutting pain had a median of 56. When rating the worst pain intensity median values had a span of 80–85, where stabbing/cutting pain was second with a median of 84.

A slightly larger difference was seen in the perceived unpleasantness between the various characters. Median values differed between 60.5 and 76, where stabbing/cutting pain was the most unpleasant character. The reason behind this pain character being more related to the use of analgesics is not known.

Polypharmacy

Of the patients in our study, 48.8% used 1 or more analgesic drugs for their SCI pain. Of these, 34% used opiates, 16% NSAIDs, 12% anti-convulsants and 11% anti-depressive drugs. The number of drugs used per person increased from 1.7 to 2.2 between 1999 and 2002, and the number of analgesic users increased from 40% to 48.8%.

Despite this increase in use, the VAS ratings of pain intensities were not lower for either the general, the mildest, nor the worst pain.

The results of our study show that despite an increased use of analgesics, patients with SCI still suffer severe pain. This increase in use of analgesics might be explained by the suggestion that one needs to combine different analgesic drugs with different modes of action (polypharmacy) to alleviate pain with multiple aetiologies (34). Unfortunately, our results do not support the theoretical approach behind polypharmacy. In these analyses, however, our study sample was small. Considering the risks for adverse events following the use of analgesics as well as interaction effects we need to evaluate whether polypharmacy has a true beneficial effect.

Another explanation for the increased use of analgesics could be that the patients demand relief. This is supported by Turk and Okifuji (35) who reported that the prescription of opiates for patients with chronic non-cancer pain was associated with the suffering behaviour of the patients.

CONCLUSION

High ratings of pain intensity as well as pain unpleasantness were found in patients with SCI using analgesics. This indicates that pain alleviation is difficult to obtain and that patients with SCI suffer from their pain condition despite their use of analgesic drugs.

High ratings of the affective component might partly explain the substantial use of opiates amongst our patients. We need to evaluate their effect in SCI-related neuropathic pain conditions regarding both the sensory discriminative and the affective components in order to find out what medicating with opiates really does for our patients.

Not only in scientific studies but also in daily work it is important to evaluate both these components of pain before and after all pain-relieving interventions. We also suggest a multidisciplinary approach including psychological interventions as a complement to the pharmacological in order at least to minimize the anxiety and distress caused by the patient's pain.

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