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ORIGINAL ARTICLE

PREVALENCE OF CHRONIC PAIN IN PATIENTS WITH ALCOHOL DEPENDENCE SYNDROME IN TERTIARY CARE CENTER IN INDIA

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Abstract

Objective: **Chronic pain and substance abuse are common problems with each having its own unique difficulties with partial response to treatment and poor outcomes. Relationship of chronic pain with alcohol dependence has not been explored unlike other substances specially opioids. This study aims to assess the prevalence and characteristic of chronic pain among respondents with alcohol dependence syndrome (ADS) and also attempts to explore the relationship of alcohol use and its effect on pain.** ***Methods:*** **A Cross-sectional prevalence study was carried out in outpatient services of Center for Addiction Medicine at National Institute of Mental Health and Neurosciences, Bangalore, India. Six hundred forty six subjects fulfilling the DSM IV diagnostic criteria for Alcohol Dependence Syndrome (ADS) were screened for chronic pain. The assessments included semi-structured proforma for demographic and clinical details, Brief pain inventory (BPI) and Severity of Alcohol Dependence Questionnaire (SADQ-C).** ***Results*****: Chronic pain was prevalent in 118 (18 %) subjects with alcohol dependence syndrome with 49% of them reporting pain to be of severe intensity. Mean $\pm$ SD (standard deviation) duration of pain in months was 26.2 $\pm$ 33.7. Chronic pain was significantly more common among older patients. Majority of subjects (73.6 %) subjects reported use of alcohol for managing pain.** ***Conclusions*****: Chronic severe pain either as a cause or effect of alcohol dependence is prevalent in such subjects. Efforts should be made to better understand and address the pain problems in this patient population.** ***ASEAN Journal of Psychiatry, Vol. 17 (2): July – December 2016: XX XX.***

Keywords: Addiction, Alcohol Dependence Syndrome, Chronic Pain

Introduction

Chronic pain and substance abuse are common problems growing in both scope and severity. Presence of these conditions often associated with partial response to treatment and lead to poor outcomes. Each of this disorder can independently contribute to the disease burden, health systems and society at large. If these two disorders occur together, all of these burdens and the consequences will be much more than the individual disorder [1].

The relationship between chronic pain and substance dependence is complex and poorly understood [2]. Treatment approaches that target either one of these problems carry the risk of ignoring the other and compromising the overall care and prognosis of these patients. There is a likelihood of multiple comorbidities that contribute to the negative impact experienced by patients with substance

dependence disorders [3]. Poor pain-related outcome among subjects with excessive alcohol consumption has been demonstrated in many studies [4,5].

Most of these patients may meet the criteria for the diagnosis of substance dependence. The most widely studied drug of abuse among those with chronic pain is opioid and the association of chronic pain with opioid dependence has been well documented [6]. But similar kind of attention has not been received by other substance use disorders, including alcohol dependence. Many earlier researchers considered pain as an important late-life stressor and alcohol consumption as a coping response [7, 8]. Ethyl alcohol had been used in past as an analgesic agent e.g. doctors and dentists administering alcohol before a medical procedure [9]. Apart from animal studies, human studies had also demonstrated not only acute analgesic effects following alcohol administration but also that analgesic effect was more in subjects with a family history of alcohol use disorder or among participants who met diagnostic criteria for alcohol use disorder [10,11,12]. In the early stages of alcohol abstinence, patient may exhibit greater pain relative to both abstinent (2–3 months) patients and healthy controls [13]. Furthermore, persons with chronic pain may be especially sensitive to hyperalgesia during the early stages of alcohol abstinence and increased pain may precede a relapse [14,15]. This underlines the important clinical implications for the treatment of subjects suffering with both alcohol dependence syndrome and chronic pain in the context of alcohol abstinence and withdrawal.

Increased social integration and sociability thus facilitating social bonding has been reported as one of the causes for alcohol use by patients [16, 17, 18]. Subjects with chronic pain have been described to have feeling of social isolation [19]. So it has been hypothesized that persons with chronic pain use alcohol to facilitate social interactions [20]. But reliance on alcohol for its analgesic effects may prevent or delay cognitive and behavioral efforts to master pain more effectively or permanently. Thus, use of alcohol to manage pain is considered as an avoidance coping response [21, 22]. It also has been found that chronic alcohol users are more sensitive to painful stimuli and to the analgesic effects of alcohol [22]. Thus alcohol used to manage pain is more likely by a person with alcohol dependence rather than an occasional user. Repeated episodes of both pain and alcohol intoxication/withdrawal may cause pathological changes to neural structure and functions. Pathological functioning of overlapping neural substrates and reward systems behind chronic pain and alcohol may increase motivation to consume alcohol in response to pain [23].

However, the literature on prevalence of chronic pain in subjects with alcohol dependence is sparse despite alcohol being a common substance abuse disorder and a leading cause of morbidity and mortality. This study aims to assess the prevalence and characteristics of chronic pain among subjects with alcohol dependence syndrome seeking treatment in the center for addiction medicine in a tertiary care Institute.

Methods

Sample Selection

The sample has been chosen over a period of three months from the subjects attending outpatient services of Center for Addiction Medicine in NIMHANS (National Institute of mental health and Neurosciences) in Bangalore, India for treatment of alcohol dependence. Inclusion criteria include: Subjects fulfilling DSM IV diagnostic criteria for alcohol dependence syndrome, clinically no features of acute alcohol withdrawal state (minimum one-week interval after the last drink), above 18 years of age and either gender. Exclusion criteria include: subjects who are unable to understand the interview process, refuse consent, have cancer-related pain and have history of severe mental illness.

Tools: Screening questionnaire for chronic pain (Table 1), Semi structured Proforma, Brief Pain Inventory- Long form [24], Severity of Alcohol Dependence Questionnaire [25].

Table 1. Screening questionnaire used to screen for presence of Chronic Pain

1.	Have you ever had pain as a problem?
2.	If yes, did the pain last more than 3 months?
3.	Have you had pain every day in the last 1 month?
4.	If yes, since when you been having such pain?
5.	Have you consulted a health professional for this pain?
6.	Have you been told about the cause of your pain?
7.	What do you think is the reason for your pain?

Semi structured Proforma

This proforma was used to collect the demographic details and information about use of other substances. It also included questions about relationship between chronic pain and alcohol.

Brief Pain Inventory

The Brief Pain Inventory (BPI) was used to assess the details regarding pain. BPI was developed by the pain research group to provide information regarding the intensity of pain and the impact of pain on functioning. As BPI is copyrighted, a written permission was obtained by the author for its use for this study. The BPI has questions about pain relief, pain quality and the patient's perception of cause of pain. It uses 0 to 10 numeric rating scales for pain measurement and its effect on various aspects of life. It also has items to mark pain at various points of time. It has demonstrated test-retest reliability and also validity in several studies. It has also been translated from many languages, including Kannada and Hindi and has been used in Indian settings.

Severity of Alcohol Dependence Questionnaire (SADQ-C)

The Severity of Alcohol Dependence Questionnaire was developed by the Addiction Research Unit at the Maudsley Hospital. It is a measure of the severity of dependence. The SADQ questions cover the following aspects of Alcohol dependency syndrome: Physical withdrawal symptoms, Affective withdrawal symptoms, Relief drinking, Frequency of alcohol consumption and Speed of onset of withdrawal symptoms. In this questionnaire, Scoring: Answers to each question are rated on a four-point scale: Almost never – 0, Sometimes - 1, Often - 2 and nearly always-3. A score of 31 or higher indicates "severe alcohol dependence", a score of 16 -30 indicates "moderate dependence" and a score of below 16 usually indicates only a mild physical dependency.

Patients attending outpatient services of Center for Addiction Medicine in NIMHANS, Bangalore, India, who fulfilled the diagnostic criteria for alcohol dependence syndrome were approached for the study. If the selection criteria were met, informed consent was obtained from patients to participate in the study. Screening questionnaire for chronic pain was applied. If found positive, then following tools were administered – semi structured proforma, Brief Pain Inventory and Severity of Alcohol Dependence Questionnaire.

The study was approved by Institutional Ethics Committee vide Ref. No. NIMHANS/sub-committee/2011 dated 11.07.2011, S.I No. 6, Behavioral Sciences in Ethics Committee meeting held on 4th July 2011. Written Informed consent was sought to participate in the study. There were no invasive procedures involved in the study. Subjects were not provided any monetary or other benefit apart from the routine care.

Results

A total number of 646 subjects with alcohol dependence syndrome (DSM IV) were

screened for presence of chronic pain. The study included 636 (98%) men and 10 (2%) women. Since the total number of women screened was only 10 compared to 636 men, all variables were not analysed separately for women. Life time presence of chronic pain (persistent pain lasting for more than 3 months) was reported in 123 (19%) subjects with alcohol dependence syndrome. The total number of subjects having pain almost every day in the last one month (presence of chronic pain currently) was 118 (18%). The mean age in years of the subjects with ADS and chronic pain (N=118) was 40.07 ± 9.72. Majority of (86%) were married and from urban background (82%). The mean number of years of education was 9.43 ± 5.8 (Table 2).

Table 2. Socio-demographic characteristic of subjects with Alcohol Dependence Syndrome and Chronic Pain

Characteristics	**Number of subjects (%)**
Age (Mean ± SD; Range)	40.07 ± 9.723, 20-70 Years
Socio-economic status Above poverty line Below poverty line	 56 (61.5) 35 (38.5)
Marital status Married Single/ Divorced/ separated	 78(85.7) 13(14.3)
Background Urban Rural Semi urban	 63(69.2) 16(17.6) 12(13.2)
Education in number of years – mean , range	9.43 Years ± 5.8, 0-27 Years
Occupation* Skilled Semiskilled Unskilled Clerical , Farmer, Business Professional Unemployed	 5(5.5) 30(33.0) 22(24.2) 22(24.2) 8(8.8) 1(1.1)

*****Kuppuswamy scale: classification of occupation

Out of 118 subjects with chronic pain, only 91 participated in further detailed assessment for pain while others dropped out from study because of various reasons which included but not limited to not giving consent for detailed assessment; migration; not responding when contacted and some could not be contacted.

Substance use related variables
Ninty-eight percentage (N=89) of patients with chronic pain and alcohol dependence reported use of other substances other than alcohol. The most common was nicotine (98%) followed by opioid (5.5%) and cannabis (5.5%). Benzodiazepine and inhalant uses were present in 3% and 2% of subjects respectively. More than half of subjects were found to have severe alcohol dependence as assessed by SADQ (Table 3).

Table 3. Severity of Alcohol Dependence

Severity of alcohol dependence (as measured by SADQ-c)	Number (%)
Not applicable*	6(6.6)
Mild	3(3.3)
Moderate	32(35.2)
Severe	50(54.9)

* Not applicable = absence of heavy drinking during last 6 months

Pain related variables

The most common pattern of pain in frequency was daily and intermittent (62%). More than half of subjects (54%) reported pain to be of severe degree (interfering with work and sleep/appetite). Mean duration of pain was 26.24 months (SD 33.73). The most common site of pain was pain in extremities (58 %) followed by low back (37 %) and abdomen (29%). The most common nature of pain was aching (86.8%) followed by nagging (44%) and tiring (41.8%) where individual subject can report more than one type describing the nature of chronic pain. Family history of chronic pain was present 20% subjects (Table 4).

Table 4. Characteristic of Chronic Pain

Characteristic of pain	Number of subjects (%)
Frequency of pain	
3-4 times of week	13(14.3)
Daily but intermittent	56(61.5)
Daily and continuous	22(24.2)
Intensity of pain *	
Mild	32(35.2)
Moderate	10(11.0)
Severe	49(53.8)
Interference in various functions	
Biological functions (sleep, appetite etc)	61(67.0)
Social functioning	28(30.8)
Activities of daily living	49(52.7)
Occupational dysfunction	86(94.5)
Marital dysfunction	12(13.2)
Sexual functioning	15(16.5)
Site of Pain	
Extremities	53(58.2)
Backache	34(37.4)
Abdominal	26(28.6)
Head	13(14.3)
Chest	11(12.1)
Nature of chronic pain	
Aching	79(86.8)
Nagging	40(44.0)
Tiring	38(41.8)
Burning	29(31.9)
Tender	27(29.7)

Exhausting Sharp Numb Penetrating Shooting Throbbing Stabbing Gnawing Miserable	25(27.5) 23(25.3) 10(11.0) 6(6.6) 3(3.3) 2(2.2) 2(2.2) 20(22.0) 7(7.7)
Family history of chronic pain	18(19.8)
Duration of pain in months (mean ± SD ; range)	26.24 ± 33.73; 3-180

*Intensity of pain [Mild (does not interfere with work, sleep, appetite /interferes with work alone); moderate (interfere with sleep/ appetite); severe (interfere with work and sleep and appetite)]

On a scale of 0 to 10, sleep was found to be maximally affected by pain with a mean score of 5.47 ± 3.04 followed by general activity. Mean of intensity of worst, least and average pain reported in last week on a scale of 0 to 10 was 7.25 ± 1.52, 3.00 ± 1.57 and 4.51± 1.69 respectively while the mean of pain present currently was 3.41 ± 2.13 (Table 5).

Table 5. Characteristic of chronic pain, assessed on a numeric scale of 0 to 10 in BPI

Characteristic of chronic pain	Mean ± SD
Intensity of pain	
Worst pain last week	7.25 ± 1.525
Least pain last week	3.00 ± 1.578
Average pain last week	4.51 ± 1.696
Pain currently	3.41 ± 2.134
Interference in Various aspects of life	
General Activity	4.00 (2.221)
Mood	2.74 (2.054)
Walking ability	3.37 (2.878)
Relations	2.00 (1.886)
Sleep	5.47 (3.042)
Enjoyment of life	3.54 (2.218)

Alcohol use and pain

Majority of subjects (76.9 %) found decrease in pain with alcohol use. Only 1.1 % reported pain to be worsened by using alcohol while 15.4 % reported no effect on their pain with alcohol use. 73.6 % subjects reported use of alcohol to manage pain and 56.1% did it more than occasionally. When subjects were asked directly about pain being a reason to continue to use alcohol, more than half (61.5%) of subjects reported pain as a reason and 38.5% didn't consider pain as a reason for continuous use of alcohol (Table 6).

Table 6. Relationship of alcohol with chronic pain

Characteristics	Number of subjects (%)
Any relationship of pain and alcohol in your case? Yes No	 82(90.1) 9(9.9)
Effect of alcohol on pain Increases Decrease Both, unpredictable No effect	 1(1.1) 70(76.9) 6(6.6) 14(15.4)
Use of alcohol in the last one month to manage pain Never Occasionally Frequently Most often Very often	 24(26.4) 16(17.6) 16(17.6) 22(24.2) 13(14.3)
Pain as a reason to continue to use alcohol No Yes	 35(38.5) 56(61.5)

Subjects with chronic pain and ADS were compared with subjects without chronic pain by t test which demonstrated that increased age was significantly associated with presence of chronic pain (t = 2.170, p = 0.03) (Table 7).

One way ANOVA demonstrated that increased age was significantly associated with more severe degree of alcohol dependence (F = 3.719, p = 0.028).(Table 8).

Table 7. Age and presence of chronic pain: t-test

	Without chronic pain Mean ± SD (n= 528)	With chronic pain Mean ± SD (n=118)	T value	P- value
Age (years)	37.96 ± 10.020	40.15 ± 9.521	2.170	.030

Table 8. Age and Severity of Alcohol Dependence as measured by SADQ-C *: One way ANOVA test

	Mild**	Moderate	Severe	F- Value	P- Value*
Age	28.33 ± 6.110	39.66 ± 10.219	42.28 ± 8.449	3.719	.028

***Severity of Alcohol dependence**
Mild = SADQ-c Score of below 16; Moderate = SADQ-c Score of 16 -30; Severe = SADQ-c Score of 31 or higher

Discussion

In the current study, life time prevalence of chronic pain was reported by 19 % (123) subjects while 18.3 % (118) subjects reported of current presence of chronic pain. It is difficult to quantify base rates of co-occurring pain and alcohol use due to differences in methodological qualities [26]. Nevertheless, this prevalence of 18.3% is more than the

estimated population prevalence of chronic pain of 10% found in a review of population-based surveys [27].

Men who were older were more likely to have chronic pain, and it had been established that aging increases the prevalence of chronic pain [28]. In more than half of subjects (53.8%), pain was severe (interfering with work and sleep/appetite) which is comparable to the finding of previous studies [28, 29]. Similarly, more than half of subjects had a severe degree of alcohol dependence, which may be either cause or effect on chronic pain. Similar findings have been reported where up to 25% of treatment-seeking pain patients had endorsed heavy drinking [20,30].

Considering long duration, severity and daily pattern of pain and severe interference specially in sleep and occupation, it increases the possibility of using alcohol for pain among subjects with alcohol dependence syndrome if subject experiences consumption of alcohol to decrease pain. This possibility is further supported by the finding in this study where 76.9 % found a decrease in pain with alcohol use and 73.6 % subjects reporting use of alcohol to manage pain similar to previous study [28].

Conclusion

Chronic pain is prevalent among patients with alcohol dependence syndrome and needs attention by clinicians as presence of both in an individual can impact the course and treatment of the conditions. This study is a preliminary research and did not include any controls for the survey. However prospective studies in subjects with chronic pain and alcohol dependence syndrome could throw light on the effects of each of these conditions in the course and outcome of the co morbidities.

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Conflicting Interest : Nil

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