

Exploring the Prevalence of Skin Morbidities in Alcohol and Illicit Drug Dependent Patients

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Received: 28-12-2022 / Revised: 20-01-2023 / Accepted: 10-02-2023

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Conflict of interest: Nil

Abstract

Background: Abuse of alcohol and other drugs has been linked to many negative social and physiological effects. Skin changes might be the first observable effect. There are enough evidences which show that patients with alcohol and opioid dependence have higher incidence of skin disorders such as pruritus and pigmentary alterations, etc. which has negative impact on quality life of patients. Timely intervention in this regard will definitely improve patient's quality life. There is limited research done in this particular geographical region of our country. So, the following study shall thus be a sincere effort to fill the gaps that have been mentioned above.

Aims and Objectives: To study prevalence and types of dermatologic morbidities in patient of alcohol and illicit drug dependence.

Materials and Methods: Cross-sectional study where 200 patients of age-groups 18-60 years, irrespective of gender with alcohol and illicit drug dependence attending Department of Dermatology and Psychiatry, Silchar Medical College with various dermatological manifestations were enrolled in the study spanning over 6 months from January 2022 to June 2022.

Results: In this study, total of 200 cases with alcohol and illicit drug dependence with dermatological diseases were enrolled. 192 (96%) patients were male and 8(4%) patients were females. 122 (61%) patients were in age group of 21-30 years. 62(31%) patients were students followed by 56 (28%) patients were business man. In our study, alcohol dependency was seen in 84(42%) patients, opioid (heroin, tramadol and codeine) dependency was seen in 58(29%) patients, cannabis dependency in 48(24%) patients and other (cocaine, methamphetamine etc) dependency noted in 10(5%) patients. Pruritis and prurigo were the most common manifestations seen in 113(56.5%) patients. Cutaneous infections were second most common manifestations more commonly associated with alcohol dependant patients. They were seen in 68 (34%) patients. 52 (26%) patients who used injectable heroin had track marks and sooting tattoos, which are stigmatizing signs of injection drug use (IDU). Other dermatoses were also seen like nummular eczema (7%), papulosquamous disorders (7%), urticaria (6%), skin ulceration (5%) and pellagra (3%).

Conclusion: The prevalence of dermatological symptoms is relatively high among drug users. In these situations, it's critical to recognize these cutaneous symptoms for more accurate diagnosis and therapy. It is also crucial to raise awareness of these symptoms and the likelihood that they are related to drug use.

Keywords: Skin Morbidities, Alcohol And Illicit Drug, Dermatologic Morbidities.

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Introduction

Abuse of alcohol and other drugs has been linked to many negative social and physiological effects. Skin changes might be the first observable effect [1]. At the national level, roughly 16.6 million individuals, or 14.6% of the population, now use alcohol, and 2.26 million people, or 2.06%, currently use opioids [2].

The ICD-10's diagnostic criteria for dependency syndrome include the following six items: a strong desire or sense of compulsion (strong desire), progressive neglect of other interests or pleasures (neglect of pleasures), a physiological withdrawal state (withdrawal), difficulty managing substance-taking behavior (difficulty in controlling), signs of tolerance (tolerance), and continued substance use despite overtly harmful effects (persistence with substance use) (harmful consequences) [3].

Pruritus, jaundice, urticaria, pigmentary changes, hair and nail changes, and mouth changes can all be symptoms of alcohol abuse. Additionally, it raises the risk of infections and skin cancer [4]. The use of parenteral drugs frequently results in cutaneous symptoms. Indicators of a potential drug addiction include a range of skin lesions, such as the destruction of peripheral veins and darkening of the skin above, punched-out scars from subcutaneous injections, chronic oedema from thrombophlebitis, and excoriations from heroin pruritis [5].

There are enough evidences which show that patients with alcohol and opioid dependence have higher incidence of skin disorders such as

pruritus and pigmentary alterations, etc. which has negative impact on quality life of patients. Timely intervention in this regard will definitely improve patient's quality of life.

There is limited research done in this particular geographical region of our country. So, the following study shall thus be a sincere effort to fill the gaps that have been mentioned above.

Material and Method

A cross sectional study was conducted in Silchar Medical College and Hospital, Silchar(Assam), for six months from January 2022 to June 2022 after approval from ethical committee. A total of 200 patients attending Dermatology and Psychiatry Department were examined during the study period.

Inclusion criteria

1. Patients of age group 18-60 years.
2. Patients fulfilling alcohol and illicit drug dependence criteria attending Psychiatry and Dermatology department.
3. Consent to participate.

Exclusion criteria

1. Patients with other comorbidities like hypertension, diabetes mellitus, etc.
2. Patients with skin disease diagnosed before dependence.

Each subject was given a thorough history regarding age, sex, and employment with special attention to cutaneous symptoms such as lesion kind, onset, duration, evolution, and progression. On a pre-made pro forma, the patient's past medical history and any related

comorbidities were also included. After obtaining consent, a thorough mucocutaneous examination, a general physical examination, and a systemic examination were all performed on all patients. Additionally, routine laboratory tests such as serology for HIV, hepatitis B, and C were out. Wherever necessary, dermoscopy and diascopy were utilized as methods of examination. When there was a problem with the diagnosis, skin biopsy was done. SADD (short alcohol dependency data) score was used to distinguish between different alcohol dependence patterns [6].

Statistical Analysis

The gathered information was put into a Microsoft Excel spreadsheet, which was then exported to the data editor of SPSS Version 20.0. (SPSS Inc., Chicago, Illinois, USA). Frequencies and percentages were used to summarize the variables. Bar and pie graphs were used to illustrate the data graphically.

Statistical significance was defined as a *P* value 0.05.

Results

This study, total of 200 cases with alcohol and illicit drug dependence with dermatological diseases were enrolled. 192 (96%) patients were male and 8(4%) patients were females. 122 (61%) patients were in age group of 21-30 years followed by 42 (21%) were in 18-20 years age group. 62(31%) patients were students followed by 56 (28%) patients were business man. In our study, alcohol dependency was seen in 84(42%) patients, opioid (heroin, tramadol and codeine) dependency was seen in 58(29%) patients, cannabis dependency in 48(24%) patients and other (cocaine, methamphetamine etc) dependency noted in 10(5%) patients. 48 (57.14%) of the 84 cases with alcohol dependency were classified by the SADD as having high alcohol dependence as shown in Table no.4

Table 1: Age distribution

Age (years)	Number of cases	Percentage
18-20	42	21
21-30	122	61
31-40	18	9
41-50	10	5
51-60	08	4

Table 2: Occupation of patients

Occupation	No. of cases	Percentage
Student	62	31%
Business man	56	28%
Unemployed	34	17%
Driver	20	10%
Labourer	18	9%
Skilled worker	10	5%

Table 3: Substance dependency distribution

Substance	Number of cases	Percentage
Alcohol	84	42%
Opioids (Heroin, tramadol, codeine)	58	29%
Cannabis	48	24%
Others (Cocaine. Methamphetamine etc)	10	5%

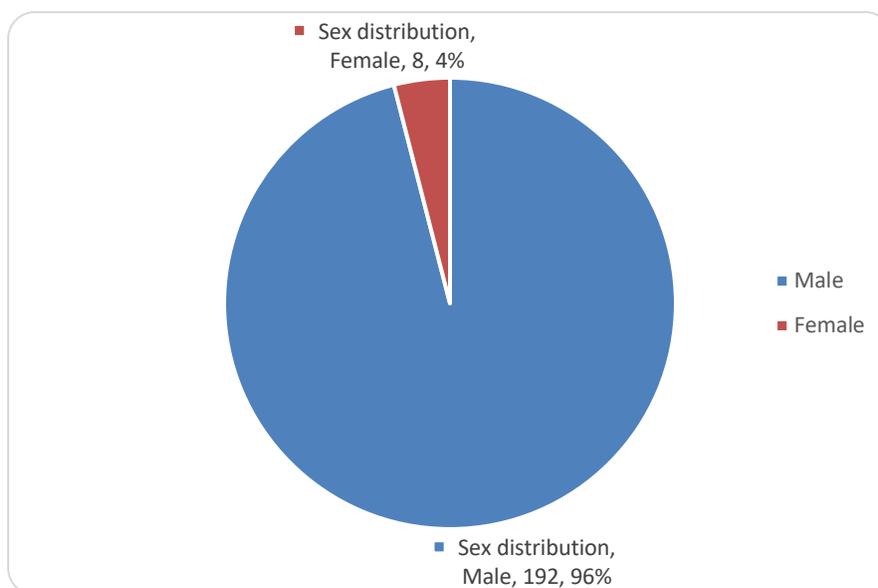


Figure 1: Sex distribution

Table 4: SADD scoring for alcohol dependence

Level of Dependency	Number of cases	Percentage
High dependency	48	57.14%
Medium dependency	20	23.80%
Low dependency	16	19.04%

The prevalence and type of dermatological manifestation was given in Table no.5. Pruritis and prurigo were the most common manifestations seen in 113(56.5%) patients. The nasal and facial regions were more prone to itching than the genitalia. As a result, several of these individuals had prurigo [38 (33.62%)], where 22 such cases had been biopsy-documented.

Cutaneous infections were second most common manifestations more commonly associated with alcohol dependant patients. They were seen in 68 (34%) patients. Out of infections, fungal infections were most common [28 (41.17%)]. Specific lesions were observed among injectable drug users. 52 (26%) patients who used injectable heroin had track marks and sooting tattoos, which are stigmatizing signs of injection drug use (IDU). Only 16 (8%) of patients who used injectable heroin had deep, round, punched-out-looking atrophic scars as a result of skin bursting.

In heroin users who used smoking as the mechanism of delivery, oral involvement was rather prevalent. Many of these heroin users had periodontal disease and tooth decay. On Sabouraud dextrose agar (SDA) media, oral thrush in some heroin users displayed candida albicans and non-albicans. Additionally observed was stomatitis nicotinic, which is characterized by palatal erythema and papules brought on by cannabis and heroin use. 52 (26%) patients had oral involvement.

Facial hypermelanosis and periorbital darkening was seen in 10(5%) patients with alcohol dependence. Nail disorders like Beau's lines, longitudinal ridging and hair disorders like thinning of hair and loss of body hair were seen in 10 (5%) patients each especially with alcohol dependence. Other dermatoses were also seen like nummular eczema (7%), papulosquamous disorders (7%), urticaria (6%), skin ulceration (5%) and pellagra (3%).

Table 5: Type of dermatological manifestations associated with substance use

Manifestation	Total number of cases (%)
Pruritis and prurigo	113 (56.5%)
Cutaneous infections	68(34%)
Oral involvement	52(26%)
Stigmata of injectable drug use	52(26%)
Atrophic scars	16(8%)
Papulosquamous disorders	14(7%)
Facial hypermelanosis	10(5%)
Eczema	14(7%)
Urticaria	12(6%)
Nail disorders	10(5%)
Hair disorders	10(5%)
Skin ulceration	10(5%)
Pellagra	6(3%)



Figure 2: Track marks of IV drug abuse



Figure 3: Prurigo nodularis



Figure 4: Pellagra



Figure 5: Psoriasis Vulgaris

Discussion

200 cases of alcohol and illegal substance dependency together with dermatological conditions were included in our study. 8 (4% of patients) were female, whereas 192 (96%) were men. 42 (21%) patients were in the 18–20 year age group, followed by 122 (61%) patients in the 21–30 year age group. 62(31%) patients were students followed by 56 (28%) patients were business man. These results were similar to the findings of *Aslam et al* [7] where 92.5% were males, 7.5% were females, 64.5% in age group of 21-30 years, 28.3% were students. In our study alcohol dependency was

seen in 42% followed by opioid in 29% and cannabis in 24% patients. Our results were contradictory to results of *Aslam et al* [7] where opioid dependency was seen in 72% and alcohol dependency in 5.6% patients. This may be due regional differences. Genetic, environmental, and psychological factors are primarily responsible for the development of alcoholism, which is a chronic, progressive, and possibly fatal illness defined by alcohol (ethanol) dependency and multiorgan dysfunction [8].

The most prevalent dermatological symptom among drug users in the current research was pruritus. It is well known that opiates like heroin cause pruritus. Many theories have been proposed to explain why people scratch after using heroin. It has been hypothesized that μ -opioid receptor (MOR), a crucial receptor for opiates, plays a major role in how opiates cause itch [9]. Pruritus, a frequent term for a hepatobiliary disorder caused by alcohol, can affect any area of the body might be more concentrated on the palms and soles, especially in cases of cholestasis-related pruritus. Pruritus can manifest in a variety of ways, from moderate to severe, temporary to chronic. Additional skin conditions such prurigo nodularis, lichenified plaques, and excoriations may be seen [10]. In our study pruritus was seen in 56.5% patients which was similar to *Aslam et al* [7] where 61.8% patients presented with pruritus.

Cutaneous infections were second most commonly seen dermatological manifestation in our study especially with alcohol dependence. This could be as a result of alcohol's immune-suppressing effects, which encourage yeast—a common human commensal—to change into pathogenic mycelia forms [11]. Consuming alcohol appears to change the local skin defenses. The root of the problem is likely multifaceted and includes both the direct immunosuppression caused by alcohol poisoning and the immune system's response to nutritional deficiencies. Multiple cutaneous T-cell subsets have been discovered to have decreased numbers and function in an animal model that was persistently given ethanol [12]. Methamphetamine may alter cytokine balances involved in leukocyte proliferation by influencing the immune system. These modifications may impair the immune system's ability to fight infections [13]. In our study, cutaneous infections were seen in 34% patients which is similar to study by *Sengotuvan KL et al* [14] where cutaneous infections were seen in 34.64% patients.

In the current investigation, several dermatological symptoms were unique to IDUs. In our study, injectable heroin users were the only ones who experienced linear post-inflammatory hyperpigmentation at intravenous injection sites (track marks) as a result of injury and subsequent sclerosis of the underlying veins and sooting tattoos created by heroin injection with hot needles. This stigmata was seen in 26% patients which was similar to study by *Aslam et al* [7]. where 28.6% presented with this stigmata.

In our study, skin bursting scars were seen on 8% of injectable heroin users. Drug users frequently turn to intradermal, subcutaneous, and even intramuscular drug delivery, commonly known as "skin popping," after the veins become sclerotic and inaccessible. The skin popping scars caused by this form of medication delivery are often deep, round, and punched-out appearing atrophic scars. According to *Grunebaum et al.*, this might be seen as another another indication that someone has used an injectable substance [15]. Our results were similar to *Aslam et al* [7]. study in which 9.7% presented with skin popping scars.

It is generally known that long-term use of methamphetamine results in serious tooth and oral health damage, sometimes known as "meth mouth," and widespread dental cavities. Methamphetamine users frequently have caries on their teeth's buccal surfaces. The high sympathomimetic effects of methamphetamine may be responsible for the vasoconstriction and xerostomia that lead to oral injury [16,17]. Dental caries is also linked to cocaine and drugs [18]. Stomatitis, glossitis, cheilitis, gingivitis, and gingival bleeding can all be brought on by nutritional deficits brought on by excessive alcohol consumption [19]. Oral involvement was seen in 26% of cases in our study which was slightly less when compared to *Aslam et al* [7] study in which 48.5% presented with oral manifestations.

As a result of its direct effects and secondary alterations brought on by cirrhotic sequelae, alcohol may cause pigmentary changes [20]. Hemochromatosis, commonly known as "bronze diabetes," can cause widespread grey or bronze hyperpigmentation that is especially noticeable in cicatrices, genitalia, and places exposed to the sun. It might result in ichthyotic-like changes and dry, scaly skin [21]. In our study, facial melanosis and periorbital darkening was seen in 5% patients which was similar to study by *Sengotuvan KL et al* [14]. where 5.38% patients presented with pigmentation.

Urticaria after consumption of ethanol was reported in multiple patients. Because only acetic acid caused a response following a prick test, acetic acid may be the particular culprit; nevertheless, other alcohol metabolites, including acetaldehyde or alcohol additives, may also induce urticaria [22]. In our study urticaria was seen in 6% patients which was similar to study by *Sengotuvan KL et al* [14]. where 6.15% patients presented with urticaria.

Patients who regularly abuse alcohol may experience changes in their hair, nails, and hormone levels, which can lead to hair thinning and hair loss. Men who have hypogonadism as a side effect of cirrhosis from alcohol may have less facial hair and pubic hair that is more feminine [23] Impaired truncal hair distribution is a unique feature in individuals with alcoholic liver disease. Hyperestrogenism, which results from reduced estrogen metabolism in the liver, can also lead to the loss of body hair [24] Clubbing, thickening of nails, longitudinal ridging, brittle nails, splinter hemorrhages, red lunulae, transverse depressions in the nail plate (Beau lines), and koilonychia are only a few of the common nail abnormalities seen in alcoholic cirrhosis [25]. Hair and nail changes were seen in 5% each patients in our study which were similar to study by *Sengotuvan KL et al* [14].

Injection locations frequently develop ulcers. Reduced wound healing and the development

of chronic wounds are brought on by direct drug-induced irritation as well as persistent trauma and inflammation [26]. In our study skin ulceration was seen in 5% patients similar to *Aslam et al* [7] (5.7%).

Niacin deficiency, also known as pellagra, is typically prevalent in alcohol dependence and is characterized by dermatitis, diarrhea, and dementia. Patches, plaques, or vesicles that appear symmetrically on sun-exposed regions are what define dermatitis. The hands, face, and neck are typically affected, displaying irritated, dry, brittle, and cracked skin [27]. Pellagra was seen in 3% of patients in our study similar to study by *Sengotuvan KL et al* [14] (2.3%). Other dermatoses like eczema and psoriasis were seen in 7% patients each in our study where alcohol plays an etiological role.

Conclusion

The prevalence of dermatological symptoms is relatively high among drug users. In these situations, it's critical to recognize these cutaneous symptoms for more accurate diagnosis and therapy. It is also crucial to raise awareness of these symptoms and the likelihood that they are related to drug use. There is paucity of such studies in the north eastern part of India and the main aim was to make dermatologists and psychiatrists make aware of stigmata of substance dependence.

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