

Original Research Article

Cutaneous manifestations of chronic alcoholism in cases attending rural tertiary care center: a descriptive cross-sectional study

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ABSTRACT

Background: Alcoholism is a potentially fatal condition damages skin directly or through organ dysfunction. Studies suggested that dermatological manifestations have also been found to be a marker of alcohol misuse. The aim of the study was to assess the various cutaneous manifestations of alcohol dependence.

Methods: This study consisted of 205 cases diagnosed with alcohol dependency attending dermatology department and psychiatry wards, above 18 years of age. A detailed clinical examination and dermatological examination including hair, nails, oral and genital mucosa was performed. Alcoholic liver disease was diagnosed on clinical findings, abdominal sonogram and LFT.

Results: Among the study cases 50.25% cases had alcoholic liver disease. The severity of alcohol dependence score ranged from 1-60 with Ameena score of 24.68. It was seen that 45.23% (90) of alcoholics were mildly dependent, 41.7% (83) of alcoholics were moderately dependent, and 13.07% (26) were severely dependent on alcohol. Seborrheic dermatitis, urticaria, hyperhidrosis was among the commonly encountered dermatoses.

Conclusions: Cutaneous manifestations are a significant pointer to underlying, perhaps undetected problem of alcohol dependency and an awareness of these signs is imperative to alter a dermatologist to problems of alcohol abuse even in a busy clinic.

Keywords: Alcoholism, Cutaneous manifestations, Frequency

INTRODUCTION

Alcoholism is a chronic fatal condition affects almost all the organ systems including skin.¹ Hence, alcohol abuse can present in a variety of ways, but dermatological disease is currently emerging as an important marker of alcohol misuse.² The association between alcohol abuse and skin disease is not readily explored by many physicians and hence misuse of alcohol can go undetected in a busy skin clinic unless specifically sought.

The few instances perhaps when an enquiry into alcoholism is made are when one encounters an adult male with pellagra or, particularly recurring flares of psoriasis or rosacea. Today, dermatologists regularly encounter

patients seeking help for cutaneous manifestations of alcohol or drug abuse. It is these dermatological manifestations of alcohol abuse which have been studied and the relationship of these skin diseases to alcohol are now familiar to us. The importance of early detection of alcoholism and management of the same cannot be overemphasized. An estimated 2.9-82.5% of the general Indian population and 5.2-58% of the Indian student population have an alcohol problem.³ In this respect, cutaneous markers of alcohol misuse prove to be invaluable.

The skin is not spared from the detrimental effects of alcohol abuse. As a small, water and lipid soluble molecule, alcohol reaches all tissues of the body and

affects most vital functions. Alcohol can cause pathologic skin changes directly or through dysfunction of various organs. Alcohol induced skin pathology may be due to a direct toxic effect or consequential to personal neglect, environmental factors, or inappropriate diet.⁴

However, though cutaneous manifestations in alcoholism has been studied earlier, literature studying the correlation of such dermatological disease to the various factors of alcohol abuse such as duration of alcohol intake, quantity consumed, severity of alcohol dependence, is lacking; especially in the Indian population, and it was with this objective that this study was undertaken.

METHODS

The present descriptive cross-sectional study was conducted in the Department of Dermatology in association with Department of Psychiatry at Kamineni Institute of Medical Sciences, Narketpally from October 2017 to September 2019.

A total of 205 cases diagnosed with alcohol dependency attending psychiatry wards, dermatology wards and dermatology outpatient department were recruited. Informed consent was obtained from all the study participants and study protocol was approved by institutional ethics committee. Cases of both genders and above 18 years of age, diagnosed as alcohol dependence and evaluated by a psychiatrist who fulfill criteria of ICD 10 were included. Cases below 18 years of age, cases with any comorbid psychiatric illness which could influence the assessment of alcohol abuse and not willing to participate were excluded. A detailed history and thorough clinical examination were carried out in all patients. A detailed dermatological examination including hair, nails, oral and genital mucosa was done in all patients. Alcohol dependency pattern was calculated using severity of alcohol dependence questionnaire (SADQ) and history of skin disease when present was recorded. Relevant investigations were done such as routine: Hemoglobin, liver function test (LFT), Skin investigations: Tzanck smear/KOH preparation/AFB smear/skin biopsy, and others (where available): abdominal sonogram and endoscopy. ALD was diagnosed on clinical findings, abdominal sonogram and LFT which was interpreted for ALD, all based on established criteria taken from Sheila Sherlock’s diseases of the liver and biliary system.

Statistical analysis was performed by using SPSS version 23.0. Descriptive statistics were used when studying the spectrum of cutaneous findings.

An independent sample t test was done to determine statistical significance of obtained results.

RESULTS

A total of 205 cases diagnosed with alcohol dependency were recruited. Among the cases, 199 cases were males

and 6 cases were females. Female participants were excluded from the further analysis due to their insignificant number.

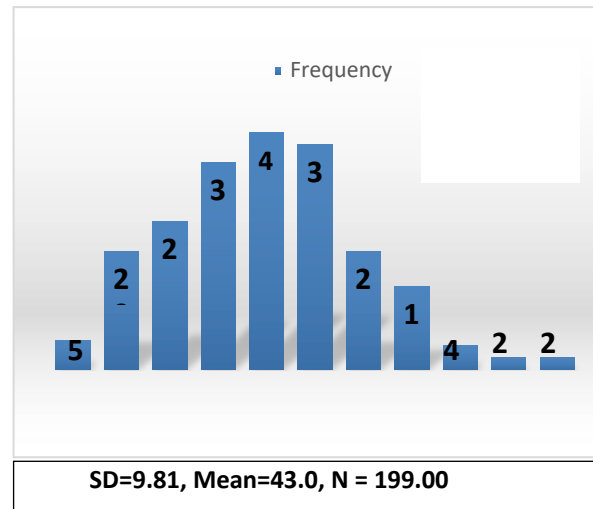


Figure 1: Age distribution in alcohol dependent population.

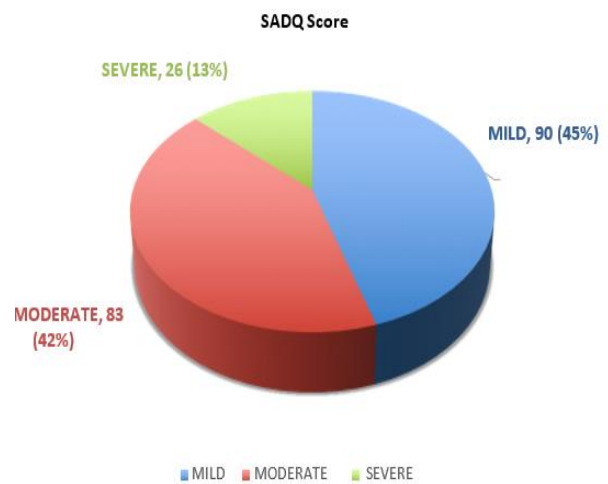


Figure 2: Severity of alcohol dependence in study participants.

Table 1: Specific dermatological manifestations of alcohol abuse (n=199).

Specific dermatological manifestations	Number of cases	Prevalence (%)
Spider nevi/telangiectasia	18	9
Palmar erythema	25	12.5
Nails: Terry’s nails	19	9.5
Clubbing	10	5
Red lunula	3	1.5
Jaundice	30	15
Pigmentation-diffuse	5	2.5

Their ages ranged from 23 to 71 years with a mean of 42.9±9.81 years among the male population. The mean age in the group which had skin disease was 43.2±9.7 years; while it was 41.2±10.3 years in the group which did not have cutaneous findings. Among the 199 males, 174 (87.43%) had significant skin findings (i.e.; relevant skin diseases seen in alcoholics, based on literature) while 4 of the 6 women had cutaneous diseases.

Table 2: Alcohol induced skin diseases (n=199).

Alcohol induced- skin diseases	Number of cases	Prevalence (%)
Total Infections	75	37.6
Bacterial	23	11.5
Fungal	43	21.6
Viral	9	4.5
Infestations: scabies	4	2
Nutritional: eg. Pellagra	14	7
Hyperhidrosis	32	16
Seborrheic dermatitis	38	19
Urticaria	4	2
Xerosis	51	25.6

Table 3: Skin disease exacerbated by alcohol (n=199).

Skin-disease exacerbated-by alcohol	Number of cases	Prevalence (%)
Psoriasis	11	5.5
Nummular eczema	5	2.5
Rosacea	6	3
Acne/acneiform	13	6.5

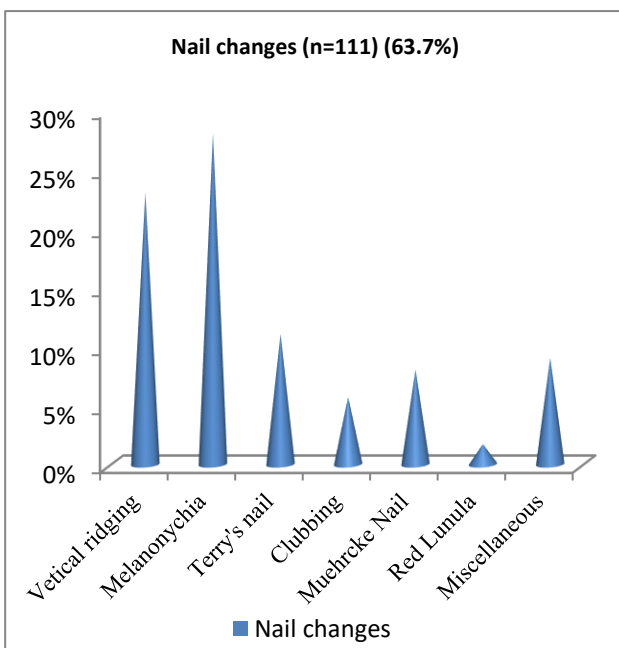


Figure 3: Nail changes in alcohol dependent. patients (n=111).

Table 4: Different subtypes of bacterial, fungal and viral infections.

Type of infection	Frequency	Percentage (%)
Bacterial infection (n=23)		
Impetigo	3	13
Erythrasma	2	8.6
Trichomycosis axillaris	15	65.2
Paronychia	2	8.6
Pitted keratolysis	1	4.3
Fungal infections (n=47)		
Pityriasis versicolor	20	42.5
Candidiasis	8	17
Pityrosporum folliculitis	1	2.1
Onychomycosis	11	23.4
Dermatophytosis	7	14.8
Viral infection (n=9)		
Warts	6	66.7
Herpes	3	33.3

Table 5: Details of dermatoses in alcohol dependent cases.

Dermatoses	Frequency	Percentage (%)
Nutritional dermatoses (n=14)		
Pellagra/pellagroid dermatoses	8	57
Glossitis	5	36
Angular dermatoses	1	7
Hair dermatoses (n=44)		
Androgenetic alopecia	39	88.63
Pediculosis	2	4.5
Alopecia Areata	3	6.81
Eczematous dermatoses (n=8)		
Contact dermatitis	3	37.5
Nummular eczema	4	50
Asteatotic eczema	1	12.5
Oral mucosal changes (multiple conditions in single patient) (n=199)		
Dental Caries	128	64.3
Bluish pigmentation	101	50.7
Oral Candidiasis	4	2.01
Glossitis	4	2.01
Pigmentary disorders (n=199)		
IGH	51	25.6
Vitilligo	4	2.01
Diffuse pigmentation	5	2.51
Melasma	15	7.53
Knuckle pigmentation	7	3.51
Macular amyloidosis	8	4.02

Table 6: Mean values of duration and quantity of alcohol consumed and SADQ score in study participants.

Parameter	Minimum	Maximum	Mean±SD
Duration of alcohol consumption	3 years	50 years	21.4±9.69
Quantity of alcohol consumed	15 g	801 g	164.1±109.7
SADQ score	1	60	25.3±13.45

On applying independent sample T test, the difference between means of alcoholic patients with skin disease and those without, for duration of drinking (p value=0.94) and severity of alcohol dependence (p value=0.8) was not significant. However, on analyzing the quantity of alcohol consumed in the two groups the difference between the means was significant (p value=0.05).

DISCUSSION

Alcohol induced cutaneous manifestations are emerging as a useful marker of alcoholism detectable at an early and possibly reversible stage of the disease, thus becoming substantially important to dermatologists and general practitioners.⁵ The present study was designed to assess the various cutaneous manifestations of alcohol dependence. The ages ranged from 23 to 71 years with a mean of 43 years indicating that patients with alcohol dependency predominantly presented around middle age, a fact that coincides with other surveys.^{6,7}

Pellagra was the most common manifestation of nutritional deficiency with a total of 8 patients having gross dermatitis or early pellagroid lesions. All of them were malnourished and had skin lesions that varied from erythematous-violaceous, edema, sometimes with blisters and/or hemorrhagic suffusions, hyperpigmentation with mild desquamation and atrophy (always located in exposed areas). The prevalence of pellagra worldwide is unknown with groups of at-risk populations like alcoholics, food faddists etc. having a greater prevalence.⁸ In our study prevalence of fungal infections was the highest among all the infections at 21.6% (43 patients)

In this group the commonest was pityriasis versicolor with 20 out of 199 patients being affected contributing to 46.5% of fungal infections and almost 27% of the total infections. Significantly, many of them had extensive type pityriasis versicolor. This may be due to the suppressive effect of alcohol on the immune system, which favours for the transformation of yeast, which is a normal commensal in humans to the pathogenic mycelia forms.⁹ In a study by Rao, the prevalence was 10%. This may be due to the difference in the population characteristics.⁶ Bacterial infections were seen in 23 out of 199 of alcohol dependent patients studied with a prevalence of 11.5% which was slightly higher than that observed by Rao (9%) and lower than the prevalence observed by Sharma et al (14.3%) (5, 6).⁶ The commonest bacterial infection was trichomycosis axillaris seen in 15 patients (prevalence of 7.5%) and comprising one fifth of all infections. Together with erythrasma (2 patient) and pitted keratolysis (1 patient), infections by corynebacteria contributed to

78% of all bacterial infections. These can be attributed to the poor general hygiene of alcohol dependent patients and the associated hyperhidrosis.¹⁰ Other infections observed were impetigo (3 patients) and paronychia in two patients. There are no studies describing the prevalence of these in alcoholics. Viral infections seen in a total of 9 patients were of two types: Herpes infections and warts. All 3 patients had genital herpes while among the 6 with warts, 3 had genital warts and the rest had plane or plantar warts. Prevalence rates of genital herpes and warts in STD clinics in India are 11% and 12% respectively.¹¹ While in our study; the prevalence of both was 1.5%. Again, this prevalence is much lesser than that observed in a study by Sharma, et al., i.e. 9%.⁵

Infestations in the form of scabies and pediculosis were also seen (2 patients each) (2% of the total population of alcohol dependent patients) which is not in accordance with other studies.^{5,6} The prevalence of these is expected to be influenced by socioeconomic status, hygiene and other factors which were not part of this study. In our study, 38 patients had different forms of seborrheic dermatitis from mild dandruff to involvement of the face and other areas. Among the alcoholic patients, 15 reported that the condition worsened during periods of higher alcohol consumption. During the hospitalization there was a clinical improvement in most patients, probably due to an improvement in personal hygiene habits normally compromised in alcoholic patients, and alcoholic abstinence. This data agrees with Kostovick et al, Rao et al, Rosset et al, and Parish et al, who claim that seborrheic dermatitis may be aggravated by alcohol consumption.^{4,5,7}

Oral mucosal pigmentation, androgenetic alopecia, xerosis, idiopathic guttate hypo melanosis and cherry angiomas were some of the other cutaneous manifestations seen. Nail changes specific to ALD and otherwise was seen in our population of alcohol dependent patients. Patients with alcohol abuse also had sexually transmitted infections and they are susceptible for the same due to their high-risk behaviour.

Analysis was carried out on different variables of alcohol dependency. Only quantity of alcohol consumed seemed to affect the presence of skin disease in alcohol dependent patients as there was a significant difference in grams of alcohol dependent patients as there was a significant difference in grams of alcohol ingested per day between those who had cutaneous manifestations and those without. Future studies on larger population of alcohol dependent patients need to be carried out to establish the same. Duration of drinking and severity of alcohol dependence did not play a role. Hence, cutaneous

manifestations are a significant pointer to underlying, perhaps undetected problem of alcohol dependency and an awareness of these signs is imperative to alter a dermatologist to problems of alcohol abuse even in a busy clinic.

CONCLUSION

Age does not play a role in the prevalence of skin disease as the mean ages in both groups of alcohol dependent patients with and without cutaneous findings were similar. Alcoholic liver disease is seen in mild to severe forms in half of the alcohol dependent population. This probably contributes to the presence of cutaneous findings. In this group, pityriasis versicolor is the most prevalent contributing to more than a quarter of all infections. This is followed by onychomycosis (>20%). Another prevalent cutaneous finding is seborrheic dermatitis with almost 20% having varied forms. Quantity of alcohol consumed per day appears to play a role in cutaneous manifestations. Increased prevalence of skin disease seems to be associated with larger quantities of alcohol per day. Duration of alcohol consumption and severity of dependence does not seem to be contributory to cutaneous disease.

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Ethical approval: The study was approved by the institutional ethics committee

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