Cutaneous manifestations in alcoholic patients. Relation with cirrhosis

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Abstract

Introduction. Prevalence of alcoholism in Hospital Lagomaggiore is high (15 percent of discharges. Detection of such abuse skin markers is essential for early treatment and limitation of negative consequences.
Objectives. To identify cutaneous manifestations in hospitalized alcoholic patients and to carry out a comparative analysis of those with and without liver cirrhosis.
Methods. The study included 69 alcoholic patients accepted in the Internal Medicine Department in a 7-month period. They were assessed by a clinical physician and a dermatologist.
Results. From the total of 69 patients, 42 percent had liver cirrhosis. Average age was 58.2, and 89.8 percent were males. All patients had some skin lesion. The most common were telangiectasias, xeroderma, tinea pedis, palmar erythema, cherry hemangioma, spider nevus, jaundice, among others. The most frequent mouth lesion was gingivitis, followed by candidiasis. We also found hypotrichosis, female pubic hair distribution, and onychomycosis. Comparative analysis of cirrhotic and non-cirrhotic patients showed significant differences ($p<0.05$). The most common lesions in the first group of patients were: jaundice, palmar erythema, purpuric lesions, tinea pedis, hyperpigmentation, spider nevus, female pubic hair distribution, and watch-glass deformity in nails.
Conclusions. All alcoholic patients showed some type of skin lesion, and those with liver cirrhosis most frequently had: jaundice, palmar erythema, purpuric lesions, tinea pedis, hyperpigmentation, spider nevus, female pubic hair distribution, and watch-glass nails ($p<0.05$). Identification of this type of lesion may suggest the presence of liver cirrhosis through cutaneous examination (Dermatol Argent 2009; 15(4):255-259).

Key words: *alcohol cutaneous manifestations, liver cirrhosis, alcoholism.*

Introduction

There are about 2.5 million alcoholics in Argentina, representing about 7 percent of the population. Thereof, 125,000 are alcohol-dependent (85 percent males and 15 percent females).[1]
Use and abuse of alcohol generates multiple medical and social problems, mainly: liver cirrhosis (associated with high morbidity and mortality in marginal urban areas), hepatitis, pancreatitis, cancer, and nutrition deficiencies.[2]
The skin is an extensive and readily accesible organ for any physician, and alcohol abuse may produce various skin manifestations.[3]
The present study was conducted taking into account the high prevalence of alcoholism in our setting (15 percent of discharges) and that recognition of alcohol abuse cutaneous markers may enable early identification and treatment, and thus limit the negative consequences associated with this habit.
The purpose of this work is to establish cutaneous manifestations of alcoholic patients hospitalized in the Internal Medicine Department of Hospital "L. Lagomaggiore", and to conduct a comparative analysis between patients with and without liver cirrhosis.

Reception date: 17/11/08 | **Approval date:** 21/4/09

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Material and methods

A protocolized, descriptive, observational and cross-sectional study was conducted. It included all patients with diagnosis of alcohol abuse admitted in the Internal Medicine Department from February to September 2008. They were assessed by a clinical physician and a dermatologist.

Central tendency and dispersion measurements, Fisher's exact test, chi^2, and Student's t test were used for statistical analysis. Significance criterion was stated for an alpha error lesser than 5 percent.

Results

Sixty nine alcoholic patients were included, of which 42 percent had liver cirrhosis. Mean age ± standard deviation [SD] was 58.2 ± 16.22 years. Of these, 89.8 percent were males. Average daily alcohol intake ± SD was 2.13 ± 1.50 liters, and wine was the most common beverage. 54 percent of patients were currently drinkers. Mean hospital stay ± SD was 18.5 ± 24.08 days. Infections were the main hospitalization cause (44.9 percent) followed by upper digestive bleeding (14.5 percent), uncontrolled cirrhosis (11.6 percent), and acute alcohol intake (5.8 percent).

All patients studied had coexisting morbidity, whereof mainly detected were smoking and anemia (66.7 percent and 56.5 percent, respectively), followed by chronic obstructive pulmonary disease (36.2 percent), hypertension (23.2 percent), diabetes mellitus (18.8 percent), heart failure (15.9 percent), chronic renal failure (13.1 percent), and neoplasias (11.6 percent). In addition, simultaneous use of illegal drugs such as marihuana, cocaine, among others, was assessed, and it was found that 11.6 percent of patients usually consumed some of the above mentioned.

Some type of cutaneous lesion was found in 100 percent of the patients, most frequently: telangiectasias (72.5 percent; 95 percent confidence interval [95% CI]: 60.38-82.54) (**Figure 1**), xeroderma (65.2 percent; 95% CI: 52.79-76.29), tinea pedis (63.8 percent; 95% CI: 51.31-75.00), palmar erythema (59.4 percent; 95% CI: 46.92-71.09) (**Figure 2**), cherry hemangioma (56.5 percent; 95% CI: 44.04-68.42), spider nevus (50.7 percent) and jaundice (49.3 percent). Also observed were hyperpigmentation (43.5 percent) mainly on photoexposed areas (face, V neckline, dorsum of hands, forearms, legs and dorsum of feet), and facial erythema (36.2 percent). 34.8 percent of patients referred itching, and 29 percent had photosensitivity. Less frequent were purpuric lesions (26.1 percent), pellagra and hypopigmentation, each 18.8 percent, and finally skin neoplasias in 4.3 percent of the cases. Hair and nails were assessed in 57 patients, where hair alterations appeared in 82.60 percent (95% CI: 71.59-90.68), with 84.2 percent hypotrichosis (95% CI: 72.13-92.52) and 61.4 percent female pattern hair distribution (95% CI: 47.57-74.00). 82.6 percent (95% CI: 71.59-90.68) had ungular lesions; the most common ones were onychomycosis (73.7 percent) and Terry's nails (49.1 percent) (**Figure 3**). Watch-glass deformity in nails was also found (15.8 percent).

The most frequent mouth lesion was gingivitis (80.7 percent; 95% CI: 68.09-89.95) (**Figure 4**), seconded by candidiasis (38.6 percent;

Figure 1. *Jaundice, spider nevus, telangiectasias and purpura.*

Figure 2. *Palmar erythema.*

95% CI: 26.00-52.43) (**Figure 5**); angular cheilitis was less frequent (15.8 percent) (**Table 1**). Comparative analysis of patients with and without liver cirrhosis showed significant differences in skin, hair, and nails. In skin, jaundice (75.86 percent vs. 30 percent), palmar erythema (82.7 percent vs. 42.5 percent), purpuric lesions (44.82 percent vs. 12.5 percent), as well as tinea pedis (79.31 percent vs. 47.5 percent), hyperpigmentation (62.06 percent vs. 30 percent) and spider nevus (65.5 percent vs. 40 percent) were significantly more frequent in cirrhotic than non-cirrhotic patients ($p<0.05$). Likewise, watch-glass deformity in nails (25.92 percent vs. 6.66 percent), and female pattern hair distribution (85.18 percent vs. 40 percent) were more frequent in the first group of patients ($p<0.05$) (**Table 2**).

TABLE 1. SKIN, MUCOSA, AND ADNEXAL LESIONS.

	N	%
Skin	**69**	**100**
Telangiectasias	50	72.5
Xeroderma	45	65.2
Infections	44	63.8
Palmar erythema	41	59.4
Cherry hemangioma	39	56.5
Spider nevus	35	50.7
Jaundice	34	49.3
Hyperpigmentation	30	43.5
Facial erythema	25	36.2
Itching	24	34.8
Photosensitivity	20	29
Purpuric lesions	18	26.1
Pellagra	13	18.8
Hypopigmentation	13	18.8
Neoplasias	3	4.3
Hair	**57**	**82.60**
Hypotrichosis	48	84.2
Hair distribution	35	61.4
Hypertrichosis	5	8.8
Nails	**57**	**82.60**
Onychomycosis	42	73.7
Terry's nails	28	49.1
Watch-glass deformity	9	15.8
Mouth	**57**	**82.60**
Gingivitis	46	80.7
Candidiasis	22	38.6
Angular cheilitis	9	15.8

Comments

Alcoholic beverage consumption is part of our culture, increased by its low cost and social acceptance. In addition, the beneficial cardiovascular effects of moderate alcohol consumption have stimulated it.[3,4]

Several questionnaires are used for alcoholism diagnosis (CAGE, Audit, Malt), as well as analytical parameters (GGT, ASAT, ALAT, MCV) and physical signs/symptoms (parotid hypertrophy, gynecomastia, anorexia, tremor, memory disorders).[3] Skin lesions may be specific of alcohol abuse (telangiectasias, liver palm, flushing, Terry's nails, red lunula, hyperpigmentation), a consequence of alcohol-induced diseases (pellagra, porphyria cutanea tarda, infections, pancreatitis), or primary cutaneous manifestations exacerbated by alcohol abuse, such as psoriasis and rosacea.[5] The obtained data show that all alcoholic patients had some type of skin lesion. Most frequent among them were vascular lesions such as telangiectasia, cherry hemangioma, and spider nevus, consistent with the literature.[3,5,6] These lesions

Figure 3. *Watch-glass deformity in nails.*

Figure 4. *Gingivitis.*

are produced by peripheral vasodilation induced by ethanol plus a direct central vasomotor effect, as well as the existence of estrogen metabolism alterations.[3,5] An additional vascular lesion associated with alcohol abuse, and mainly present in liver cirrhosis patients, is palmar erythema or liver palm. It appears as localized erythema of the thenar and mainly the hypothenar eminence, or as hot erythema of the whole palm surface. It is also found in pregnancy and leukemia, and may appear as a familial trait without underlying disease. It has been associated with estrogen metabolism alterations caused by liver disease. However, since it may also develop in patients without liver disease or with chronic inflammatory diseases, the pathogenesis of the vascular abnormality is still unknown. In our case, palmar erythema showed statistically significant differences between patients with (82.75 percent) and without (42.5 percent) liver cirrhosis, p = 0.007.

Another frequent lesion in our series was xeroderma (65.2 percent) which may mainly be related to nutrition deficits, among other causes. It is commonly known that alcohol abusing persons have higher incidence of skin infections due to cell-based and humoral immunosuppression, nutrition deficiencies, and a higher incidence of trauma. About 30-35 percent of alcoholics have superficial fungal infections (tinea pedis, onychomycosis, pitiriasis versicolor).[3,5] In our study, said percentage is doubled, with 63.8 percent of tinea pedis and 73.7 percent of onychomycosis. Some long-term alcohol liver disease patients, mainly cirrhotics, have hyperpigmentation of unknown origin. Ultrastructure studies have shown melanin excess inside giant melanosomas in epidermal cells of alcoholic patients. We found hyperpigmentation in 43.5 percent of patients, mainly located on photoexposed areas such as facial area, V-neckline, dorsum of the hands, forearms, legs and dorsum of feet, as well as palm and finger folds. When comparing such manifestation in patients with (62.06 percent) vs. without (30 percent) liver cirrhosis, we noted significant differences, p = 0.0079. There appear oral mucosa changes in people consuming alcohol; however, none is specific, and relate, among other factors, to oral cavity hygiene deficit.

Figure 5. *Candidiasis.*

Nails in alcoholics may show a great range of alterations, or be completely normal. Most ungular changes are nonspecific. The most typical lesion is "Terry's nails" found in about 80 percent of cirrhotic patients.[3,5] One or several nails may be affected, and clinically appear with white proximal two third of the

TABLE 2. COMPARISON OF SKIN, MUCOSA, AND ADNEXAL LESIONS IN PATIENTS WITH AND WITHOUT LIVER CIRRHOSIS.

	With cirrhosis		Without cirrhosis		p
	N	%	N	%	
Skin	**29**	**100**	**40**	**100**	
Spider nevus	19	65.51	16	40	0.03
Cherry hemangioma	20	68.96	19	47.5	0.07
Facial erythema	10	34.48	15	37.5	0.07
Palmar erythema	24	82.75	17	42.5	0.0007
Telangiectasias	24	82.75	27	67.5	0.154
Jaundice	22	75.86	12	30	0.00016
Itching	11	37.93	13	32.5	0.64
Hyperpigmentation	18	62.06	12	30	0.0079
Hypopigmentation	3	10.34	10	25	0.12
Purpuric lesions	13	44.82	5	12.5	0.0025
Photosensitivity	10	34.48	10	25	0.391
Pellagra	8	27.58	5	12.5	0.113
Xeroderma	22	75.86	23	57.5	0.113
Infections	23	79.31	19	47.5	0.0075
Neoplasias	3	10.34	0		
Hair	**27**	**93.1**	**30**	**75**	
Hypertrichosis	2	7.4	3	10	0.729
Hypotrichosis	23	85.18	25	83.33	0.848
Female hair distribution	23	85.18	12	40	0.00046
Nails	**28**	**96.55**	**29**	**72.5**	
Terry's nails	14	51.85	14	46.66	0.695
Watch-glass deformity	7	25.92	2	6.66	0.046
Onychomycosis	22	81.48	20	66.66	0.2
Mouth	**27**	**93.1**	**30**	**75**	
Angular cheilitis	4	14.81	5	16.66	0.848
Gingivitis	22	81.48	24	80	0.887
Candidiasis	12	44.44	10	33.33	0.389

nail, and pink distal one third of the nail. This alteration may result from reduced capillary blood flow to the ungular bed caused by excessive growth of connective tissue. "Watch-glass deformity" in nails may appear in 10-15 percent of cirrhotic patients. The pathogenesis is unclear, but has been related to peripheral blood flow increase with finger arteriovenous anastomosis dilation and increase of ungular bed connective tissue.

In contrast with the above mentioned, in our study Terry's nails appeared in a similar percentage in cirrhotic (51.8 percent) and non-cirrhotic (46.7 percent) patients, but watch-glass deformity in nails showed a statistically significant difference in patients with and without cirrhosis ($p = 0.046$).

Finally, we found that 84.2 percent of patients had hypotrichosis, and 61.4 percent had pubic hair changes with female distribution. This last finding showed statistically significant differences between patients with (85.18 percent) vs. without (40 percent) cirrhosis. Both are clinical manifestations of hyperstrogenism caused by alcoholic liver disease.

In conclusion, 100 percent of hospitalized patients with history of alcohol abuse had skin lesions, most frequently: telangiectasias, xeroderma, tinea pedis, palmar erythema, cherry hemangioma, spider nevus, and jaundice. The most common mouth lesions were gingivitis and then candidiasis; and hair and nails showed hypotrichosis, female hair distribution and onychomycosis.

In alcoholics with liver cirrhosis, the most significant lesions were: jaundice, palmar erythema, purpuric lesions, hyperpigmentation and spider nevus, as well as female hair distribution, watch-glass deformity in nails, and tinea pedis ($p<0.05$). These signs and symptoms must be taken into account for early diagnosis of liver cirrhosis in alcoholic patients.

References

1. Comisión Nacional sobre Alcoholismo, 1999. Health I.G. Consultora Periodística (http://www.info-medica.wdc.com.ar).
2. Chou S, Grant B, Dawson D. Medical consequences of alcohol consumption. Alcohol Clin Exp Res 1996; 20:1423-1429.
3. Molina Bermejo M, Reyes Fernández N. Manifestaciones cutáneas y consumo de alcohol. FMC 2004; 11:183-191.
4. San Molina L. ¿Tiene el alcohol algún efecto beneficioso? Med Clin 1996; 107:655-659.
5. Smith K, Fenske N. Cutaneous manifestations of alcohol abuse. J Am Acad Dermatol 2000; 43:1-16.
6. Fantóbal A, Amaro P. Manifestaciones cutáneas de las enfermedades gastrointestinales. Gastr Latinoam 2005; 16:39-57.
7. Disotuar I, Martínez Jiménez A, Aguilar Medina J, González Rodríguez M. Pesquisaje de Alcoholismo en un Área de Salud. Rev Cubana Med Gen Integr 2001; 17:62-67.
8. Guardia Serecigni J, Jiménez-Arriero M, Pacual P, Flórez G, Contel M. Alcoholismo:Guías clínicas basadas en la evidencia científica. Socidrogalcohol 2007, 2nd edition.
9. Martín Centeno A, Rojano Capilla P. Conceptos y anamnesis del consumo de alcohol en la consulta de atención primaria. Medicina General 2000; 29:975-962.
10. Almocacid C, Gil L. Alcoholismo en atención primaria. In: http://www.udomtyc.org/descarga/sesiones/2003y4/Alcoholismo.pdf. Accessed December 12, 2008.
11. Higgins EM, du Vivier AW. Alcohol abuse and treatment resistance in skin disease. J Am Acad Dermatol 1994; 30:1048.
12. Higgins EM, du Vivier AW. Alcohol and the skin. Alcohol 1992; 27:595-602.
13. Sarkany I. The skin-liver connection. Clin Exp Dermatol 1988; 13:152-159.
14. Shellow WVR. The skin in alcoholism. Int J Dermatol 1983; 22:506-510.
15. Woeber k. The skin in diagnosis of alcoholism. Ann N Y Acad Sci 1975; 252:292-295.
16. Burton JL, Kirby J. Pigmentation and biliary cirrhosis. Lancet 1975; 1:458-459.