ORIGINAL ARTICLE
DOI: 10.4274/eamr.galenos.2021.57442

Do Dermatological Diseases Cause Disability? A Single Tertiary Center Experience

Ağaoğlu et al. Dermatological Diseases and Disability

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07.07.2021
28.11.2021

ABSTRACT
Introduction: Chronic skin diseases can affect the quality of life negatively. They may cause impairment of work productivity and have a socioeconomical burden. In this study, we aimed to evaluate patients who applied to our hospital for the determination of disability due to chronic skin diseases.
Methods: We retrospectively evaluated the patients who were given a disability rate by our department between 2008-2018. Demographic features of the patients, diagnosis of the skin disease, involved areas of the body and accompanying comorbidities were recorded. Skin diseases were classified and rates of disabilities were determined according to the Ministry of Family, Labour and Social Services and the Ministry of Health's disability assessment scale for adults.
Results: A total of 137 patients included in the study. Eighty-two (59.8%) of the patients were male and 55 (40.1%) were female. The mean rate of disability due to skin diseases was 11.31±10.91. The mean rate of disability was 12.0 for male patients and 10.2 for female patients. The most common diseases causing disability were inflammatory skin diseases (22.6%), skin manifestations of autoimmune and systemic skin diseases (18.9%), skin tumors (16.7%) and eczema group (11.6%). Psoriasis vulgaris was the most common (96.6%) inflammatory skin disease. Of the skin manifestations of autoimmune and systemic skin diseases, Behçet's disease (34.6%) accounted for the majority of the patients, while autoimmune bullous diseases had the highest rate of disability. Malignant melanoma had the highest disability rates among skin tumors. Among the eczema group, patients with contact dermatitis (62.5%) had the highest rate of disability. Patients with genetic skin diseases such as ichthyosis, epidermolysis bullosa and lipoid proteinosis had the highest rate of disability in overall.
Conclusion: Chronic skin diseases may cause disability as well as a decrease in quality of life. Patients with chronic skin disease should be evaluated with their psychological and occupational aspects.
Keywords: Skin diseases, disability, quality of life

INTRODUCTION

Skin diseases are very common and can affect individuals of all ages worldwide. Globally, skin conditions were reported the fourth leading cause of all human diseases. Although many of the skin diseases are not life-threatening, they may result in a significant burden on the quality of life, including psychosocial and economic impacts. The presence of skin diseases on visible areas of the body often lead to decreased self-confidence and social withdrawal. Symptoms such as pruritus, pain and fatigue due to the chronic dermatoses can also decrease the quality of life of the patients (1-4).

Occupational dermatoses also have a significant economic burden to the health care providers. Occupational dermatoses cause decreased work productivity and loss of work occasionally. Both the physical disability and cost of treatment contribute to the economic burden on society (4,5).

In this study, we aimed to evaluate patients who applied to our hospital for the assessment of disability due to chronic skin diseases.

METHODS

We included patients with any skin disease who were admitted for the determination of disability due to chronic skin diseases to the health board of our hospital between 2008-2018. Patient files were evaluated retrospectively. Demographic features (age and gender) of the patients, the diagnoses of the skin diseases, involved areas of the body, accompanying comorbidities and disability rates given by our department were recorded.

Skin diseases were classified according to the Ministry of Family, Labour and Social Services and Ministry of Health's disability assessment scale for adults. Psoriasis vulgaris (PV) and lichen planus were evaluated in the inflammatory skin diseases group; while Behçet's disease (BD), connective tissue diseases, vasculitis, autoimmune bullous diseases, pyoderma gangrenosum and chronic graft-versus-host disease (GVHD) were included in the skin manifestations of immune and autoimmune systemic diseases. Hypertrophic scars and hemangiomas were classified in benign skin tumors, while malignant melanoma and squamous cell carcinoma were classified in malignant skin tumors. Contact dermatitis, atopic dermatitis and seborrheic dermatitis were grouped in the eczema group (6).

The study protocol was approved by xx Ethics Committee (approval number: 310, date: 25.12.2018).

Statistical Analysis

SPSS 22.0 software was used for data analysis. Continuous quantitative data were expressed as n, mean and standard deviation and qualitative data were expressed as n and median.

RESULTS

A total of 137 patients included in the study. Eighty-two (59.8%) of the patients were male and 55 (40.1%) were female. The mean age of the patients was 40.75±14.06 (range:6-71). The mean rate of disability due to the skin diseases was 11.31±10.91. The mean rate of disability was 12% for male patients and 10.2% for female patients. Of the total percent disability, the most common diseases were inflammatory skin diseases (22.6%), skin manifestations of autoimmune and systemic skin diseases (18.9%), skin tumors (16.7%) and eczema group (11.6%). Thirty (96.6%) of 31 patients with inflammatory skin disease were PV. The most common comorbidities accompanying with PV were psoriatic arthritis (20%) and psychiatric disorders (16.6%). Persistent depressive disorder (dysthymia) was recorded as the most common (50.0%) psychiatric disorder in psoriasis patients.

In the immune and autoimmune skin diseases group, BD (34.6%) constituted the majority of the patients, while the highest rate of disability was given to the autoimmune bullous diseases. Eye involvement was noted in 5 (55.5%) of the patients with BD. While 4 (44.4%) of the patients with BD had oral ulcers, 3 (33.3%) had both oral and genital ulcers. The most common comorbidities accompanying patients with BD were adjustment disorder (44.4%)

and Crohn's disease (33.3%). Among the connective tissue diseases, 4 (66.6%) of the patients were cutaneous lupus erythematosus, while dermatomyositis and antiphospholipid antibody syndrome were recorded, each in one patient. Adjustment disorder was noted in 2 (50.0%) of the patients with cutaneous lupus erythematosus. Of the autoimmune bullous diseases, all of the patients were pemphigus vulgaris. Malignant skin neoplasms (6 patients) had the highest disability rates among skin tumors. Four (66.6%) of the patients had malignant melanoma and 2 (33.3%) of the patients had squamous cell carcinoma. Among the eczema group, patients with contact dermatitis (62.5%) accounted the majority of the patients (Table-1). Six (60.0%) of the patients with contact dermatitis had hand involvement.

Patients with genetic skin diseases such as ichthyosis, epidermolysis bullosa (EB) and lipoid proteinosis had the highest rate of disability in overall. After those with genetic skin diseases, patients with mycosis fungoides (MF) had the highest rate of disability in the less common diseases group (Table-2).

DISCUSSION

Several studies focused on the clinical outcomes of dermatological diseases, however the economic and psychosocial aspects of the chronic dermatoses are poorly described. The direct cost of skin diseases are defined as medical care or hospitalization, while indirect costs to the society comprise sick leave, loss of productivity at work, impairment and unemployment (7-9). Patients with chronic dermatoses often experience reduced working capacity due to the physical disability (4).

Psoriasis is a common chronic skin disease characterized with itching, scaling and disfiguring skin changes (10). There are many studies that revealed psoriasis negatively affects both the quality of life and work productivity (11-14). In a study of 369 severe psoriasis patients, approximately 60% of employed patients declared that they had reduced working capacity, and 34% of the patients who were not working indicated that the reason was due to psoriasis (11). Chan et al. (12) reported that 38% of the patients with psoriasis having difficulties to find a job, while 19% of the patients had impairment at work. Additionally, it was shown that the annual income from employment had decreased in patients with psoriasis compared to the normal population (14). In our study, the majority of the patients who applied for the assessment of disability were diagnosed with PV (21.8%).

It is also well known that psychosocial impacts of psoriasis decrease the quality of life. Patients with psoriasis often suffer from feelings of embarrassment, low self-esteem and fear of stigmatization. Accompanying psoriatic arthritis also increase the impairment and the functional impairment constitute a significant burden on patients' lives. Patients with psoriatic arthritis often experience chronic pain, fatigue and functional limitations which may predispose to psychiatric disorders (15). There are many studies revealed that patients with psoriasis are more susceptible to psychiatric disorders such as depression, anxiety and adjustment disorders (4,10,16,17). In our study, we detected psoriatic arthritis (20%) and psychiatric disorders (16.6%) as the most common comorbidities in psoriasis patients. Additionally persistent depressive disorder (dysthymia) was the most frequent psychiatric disorder in our psoriasis patients.

In our study, BD constituted the majority of the patients in the immune and autoimmune skin diseases group. BD is a chronic, inflammatory disorder characterized by mucocutaneous ulcers and the multisystemic involvement of ocular, musculoskeletal, vascular, gastrointestinal and central nervous systems. In BD, recurrent painful mucocutaneous ulcers and arthritis limit the daily life, however ocular, vascular and neurologic involvements increase morbidity and mortality (18). Epidemiological studies have shown that Turkey has the highest prevalence rate of BD in the world (19,20). Sut et al. (20) had evaluated the direct and indirect costs of the BD, and reported that indirect costs accounted for 32% of the total cost. Additionally, lost workdays were noted in 51 (43%) of the patients and those with

ocular, vascular, neurological involvement had the highest rate of workday loss. Mumcu et al. (21) had reported that the impairment of daily activities were observed more prominently in patients with musculoskeletal involvement, while ocular involvement was found to be associated with decreased working hours. In our study, ocular disease was the most common systemic involvement in BD who applied for the assessment of disability.

Autoimmune bullous dermatoses are a group of disorders affecting the skin and mucous membranes. It is well documented that these group of diseases generally cause great impairment on quality of life. Painful mucocutaneous blisters and erosions lead to productivity loss of the patients (22,23). Brodzsky et al. (24) emphasized that pemphigus patients generally experience a temporary or permanent decrease in working ability. In another study, Heelan et al. (22) reported that approximately 50% of the patients with autoimmune bullous dermatoses were unemployed. In our study, in the immune and autoimmune skin diseases group, patients with pemphigus had higher rate of disability compared to the other diseases.

Recent studies showed that the annual incidence of malign skin tumors including malignant melanoma and non-melanoma skin cancers continue to increase. Given the loss of productivity, sick leave and early retirement due to skin cancers, it remain a significant economic burden to society (25,26). Most of the cases of melanoma are diagnosed at younger ages compared to the non-melanoma skin cancers and as the survival rates are increasing due to the early detection. This may lead to an increase some of challenges such as work disability, changing jobs and psychosocial problems in younger population (27,28). In our study, malignant skin tumors had higher disability rates compared to the benign skin neoplasms. Additionally, patients with malignant melanoma had higher disability rates than patients with squamous cell carcinoma.

The personal and social outcomes of occupational contact dermatitis are work-related disability, reduced quality of life, increased health care costs and sometimes job change. Hand eczema constitutes approximately 80% of the occupational contact dermatitis (29). In a study of Meding et al. (30), they found that construction workers had a higher risk of disability pension due to eczema. In a long term follow up study of occupational hand eczema patients, it is reported that 34% of the patients had changed their occupation, while 25% of the patients had experienced unemployment or early retirement (31). Although the occupations of the patients could not be evaluated in our study, hand eczema was found the most common (60%) involvement in eczematous dermatitis patients who applied for a disability rate.

As many of the genodermatoses persist throughout life, they have substantial physical and socioeconomical burden both on patient and on their families. It is well documented that genetic skin diseases such as EB and ichthyosis negatively affect the quality of life (32-35). Tabolli et al. (32) showed that the physical disability in EB cause more impairment than other dermatological diseases. Additionally, it has been shown that absenteeism in the workplace and daily time for skin care has a significant burden on the ichthyosis patients' lives (33). Our study also showed that patients with EB and ichthyosis had the highest rate of disability.

MF is the most common form of cutaneous T-cell lymphomas. Even for patients in early stages, the disease may directly affect the quality of life. Patients with MF often experience limitation in daily activities, disturbed body perception, sleep disturbances and psychosocial stress (36-38). In a study of Demierre et al. (37), they reported that 94% of the patients with cutaneous T-cell lymphoma were worried about their disease and 55% of the patients declared that the disease interfere with their job capability which resulted in missed work days. The chronic course of the disease constitute also a substantial financial burden both for patients and societies. Although we have small number of patients with MF in our study, the disability rates of the patients were found to be high.

To the best of our knowledge, this is the first study evaluating the disability related to dermatological diseases in our country. The limitations of our study are being a retrospective design and the small number of patients who had been admitted for the assessment of disability rate to our hospital.

CONCLUSION

Our study demonstrates that chronic skin diseases may cause disability and have a socioeconomical burden. Since the psychological comorbidities often accompany skin diseases, the burden of the skin diseases may increase indirectly. Therefore, chronic skin diseases should be evaluated with their economic and psychological consequences as well as their physical outcomes.

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Table 1: The distribution of the disability rates in the most common disease groups

Disease groups (the most common)			Number of patients n (%)	Mean rate of disability
Inflammatory skin diseases	Psoriasis vulgaris		30 (96.7%)	12.5
	Lichen planus		1 (3.3%)	5.0
Skin manifestations of immune and autoimmune systemic diseases	Behçet's disease		9 (34.6%)	15.0
	Connective tissue diseases		6 (23.0%)	13.3
	Vasculitis		5 (21.7%)	8.0
	Autoimmune bullous diseases (Pemphigus)		3 (11.5%)	30.0
	Pyoderma gangrenosum		2 (7.6%)	5.0
	Chronic GVHD		1 (4.3%)	10.0
Skin tumors	Benign skin neoplasms	Hypertrophic scar	12 (52.1%)	5.4
		Hemangioma	5 (21.7%)	8.0
	Malignant skin neoplasms	Malignant melanoma	4 (17.3%)	15.0
		Squamous cell carcinoma	2 (8.6%)	10.0
Eczematous dermatitis	Contact dermatitis		10 (62.5%)	7.0
	Atopic dermatitis		3 (18.7%)	3.3
	Seborrheic dermatitis		3 (18.7%)	1.6

GVHD: Graft versus host disease

Table 2: The distribution of the disability rates in the less common disease groups

Disease groups (the less common)		Number of patients n (%)	Mean rate of disability
Genetically transmitted skin diseases	Ichthyosis	3 (37.5%)	40.0
	Keratoderma	2 (25.0%)	17.5
	Epidermolysis bullosa	1 (12.5%)	40.0
	Neurofibromatosis	1 (12.5%)	10.0
	Lipoid proteinosis	1 (12.5%)	30.0

Sebaceous, eccrine and apocrine gland diseases	Acne vulgaris	3 (42.8%)	11.6
	Hidradenitis suppurativa	2 (28.5%)	15.0
	Rosacea	1 (14.2%)	5.0
	Hyperhidrosis	1 (14.2%)	10.0
Pigmentation disorders	Vitiligo	5 (100.0%)	12.0
Skin diseases with psychiatric etiology	Prurigo	2 (100.0%)	2.5
Skin diseases associated with hair follicle	Alopecia universalis	2 (100.0%)	10.0
Skin diseases due to microbial agents	Cutaneous tuberculosis	2 (100.0%)	2.5
Cutaneous leukemia and lymphomas	Mycosis fungoides	2 (100.0%)	25.0
Other skin diseases		13 (9.4%)	5.3