Dermatologists are more likely than oncologists to prescribe skin-directed therapies for early-stage cutaneous T-cell lymphoma: a retrospective review

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Abstract

Early-stage cutaneous T-cell lymphoma (CTCL) is managed effectively with skin-directed therapies such as topical medications, phototherapy, and local ionizing radiation. Patients with CTCL often seek care from both dermatologists and oncologists. Our study aimed to compare the frequency that skin-directed treatments were prescribed to patients managed by each of these specialties. Overall, we found there was a statistically detectable relationship between the presence or absence of oncologist involvement and the likelihood that a patient would be prescribed skin-directed therapies (P=0.0003). Of the oncologists included in the study, 66% opted for management revolving around systemic rather than skin-directed therapies. However, when a dermatologist and oncologist worked together in a patient's care, the number of patients receiving skin-directed therapies increased to 100%. Our study suggests that patients with early stage CTCL may benefit from having a dermatologist involved in their care.

Keywords: CTCL, oncology, T-cell lymphoma

Introduction

Cutaneous T-cell lymphoma (CTCL) is a diverse group of non-Hodgkin lymphomas often managed by both dermatologists and medical oncologists. Mycosis fungoides (MF), which comprises approximately half of all CTCLs, is the most common subtype [1]. What drives the progression from early to advanced stage of CTCL is not known. However, it is clear that response to treatment is far superior when CTCL is treated with skin-directed therapy in the early stages of the disease where the 5-year survival can reach up to 90% [2]. Based on the guidelines of stage-based treatment set by the national comprehensive cancer network (NCCN), we retrospectively analyzed the differences in treatment regimen preferences of CTCL between the two specialties at our tertiary care university hospital. According to these guidelines, first line treatment for limited patch/plaque disease should revolve around skin-directed therapies [3]. Indeed, the prognosis in mycosis fungoides has not been shown to improve in patients treated with early radiation and chemotherapy when compared to those treated with conservative topical therapies. These systemic treatments, however, can lead to more serious side effects than skin-directed therapies [4].

Methods

Our goal was to determine whether oncologists were as likely as dermatologists to start skin-directed therapies for early-stage disease. Skin-directed therapy was defined using the NCCN guidelines and included local radiation, phototherapy, and the

Table 1. *Clinical staging criteria taken from the National Comprehensive Cancer Network Guidelines for Mycosis Fungoides/Sezary Syndrome 2020.*

Clinical stage	T (skin)	N (node)	M (visceral)	B (blood involvement)
IA	T1 (patches, papules, and/or plaques covering <10% of body surface area [BSA])	N0 (no abnormal lymph nodes)	M0 (no visceral organ involvement)	B0 or B1 (absent to minor blood involvement: 0-15% of peripheral blood lymphocytes are atypical cells or up to 15% of cells are CD4+CD26- or CD4+CD7-)
IB	T2 (patches, papules, and/or plaques covering ≥ 10% BSA)	N0	M0	B0 or B1
IIA	T1-T2	N1-2 (abnormal lymph nodes Dutch Gr one or 2)	M0	B0 or B1

following topical medications: corticosteroids, imiquimod, mechlorethamine, retinoids, and carmustine. This study was reviewed and approved by our institution's Human Research Protections Office (ID # 19-149). Patients included in our investigation were those that met the criteria of either stage IA, IB, or IIA disease based on NCCN guidelines and who also had a pathologic diagnosis rendered by a dermatopathologist (**Table 1**). Cases were excluded if there was insufficient data to calculate the stage or if the medical records were not available. Group comparisons were made using Fisher's exact test.

Results

Our review identified 72 patients diagnosed between 2009 and 2019 with stage IA-IB or IIA primary cutaneous T-cell lymphoma. Of this population, 31 (43%) patients were diagnosed with stage IA disease, 39 (54%) patients were diagnosed with stage IB disease, and two (3%) patients were diagnosed with stage IIA disease. Of these patients, 51 were managed solely by dermatologists, 9 were managed solely by oncologists, and 12 were co-managed by both specialties. Results of our study showed that in cases of dermatologist-managed early-stage CTCL, all 51 patients were prescribed a regimen that included skin-directed therapy (100%). However, of the nine oncologist-managed cases, only three were prescribed a skin-directed therapy (33%) and all of these three patients were also co-managed with systemic therapy. The remaining 6 patients were placed on regimens that involved systemic therapy in absence of any topical treatment (**Table 2**). **Figure 1** shows the breakdown of therapies assigned to patients stratified by specialist involvement and stage of disease. This figure demonstrates that patients receiving oncologist-driven management are more likely to receive systemic therapies in lieu of skin-directed therapies in both stage IA and stage IB-IIA CTCL. Analysis of the data gathered from the total population studied supports this claim and shows that there is a statistically detectable relationship between the presence or absence of oncologist involvement and

Table 2. *Patients seen by a dermatologist were always prescribed skin-directed therapies in early stage cutaneous T-cell lymphoma (stages IA-IB/IIA), while patients seen by only an oncologist were prescribed skin-directed therapies three out of 9 times.*

Provider (N=72)	Skin directed therapies	No skin directed therapies
Dermatologist	51	0
Oncologist	3	6
Both	12	0

whether a patient would be prescribed skin-directed therapy (P=0.0003). This claim holds true with individual examination of the staging groups as well. There was a statistically detectable difference in how often a patient was prescribed skin-directed therapy and the presence or absence of oncologist involvement in their care in both stage IA patients (P=0.0125) and stage IB-IIA patients (P=0.0268). All P values for this study were derived using Fisher's exact test. Limitations identified in our study included the retrospective design, small sample size, and single academic center source.

Discussion

In this study, we found that patients with a confirmed diagnosis of early-stage cutaneous T-cell lymphoma were treated with recommended skin-directed therapy less frequently when they were managed by oncologists compared with patients managed by dermatologists. The vast majority of primary CTCL subtypes exhibit a chronic, indolent disease course

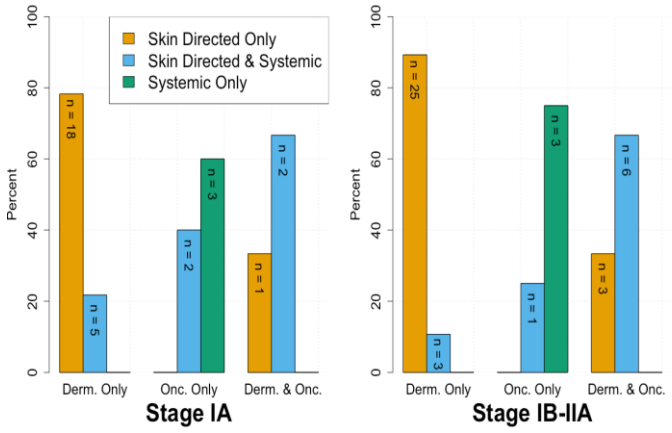

Figure 1. *Percent of providers to prescribe skin-directed only, skin-directed and systemic, and systemic only therapies in stage IA and stage IB-IIA cutaneous T-cell lymphoma.*

with involvement limited to the skin. Research has shown no significant difference in life expectancy between stage IA patients and the general population., It is believed that only 10-20% of patients with stage IA CTCL will ultimately develop a systemic lymphoma [5-6]. Given the excellent prognosis associated with early-stage CTCL, the goal of therapy is attaining maximum symptomatic management while avoiding the adverse effects invariably associated with systemic therapy. The largest study on the efficacy of topical corticosteroids was completed by Zackheim with a treatment population of greater than 200. He reported partial-to-complete remission in over 90% of stage T1 MF patients and over 80% of stage T2 MF patients; all were treated with largely high-potency, class I topical corticosteroids [7]. In advanced CTCL, topical corticosteroids additionally provide symptomatic benefit and should be considered for use in all stages of disease [6]. Topical chemotherapies, such as mechlorethamine are another highly studied modality of treatment in CTCL, with Lessin et al. describing topical gel mechlorethamine achieving clinical remission in 58.5% in patients with stage I disease and 44.2% with stage II disease after 26 weeks of therapy [8]. Multiple other topical treatment options available, including carmustine, retinoids, and bexarotene have been studied and show efficacy in early CTCL [2].

Conclusion

First line treatment for limited patch/plaque disease revolves around skin-directed therapies [3]. The prognosis in mycosis fungoides is not improved in patients treated with early ionizing radiation and chemotherapy when compared to those treated with conservative topical therapies. However, chemotherapy can lead to more serious side effects than skin-directed therapies [4]. In early disease, goals of therapy should include improved quality of life, decreased skin burden of disease, and prevention of disease progression. Step-wise trials of skin-directed therapies should be the first approach for early-stage cutaneous T-cell lymphoma. Our findings suggest that early-stage CTCL patients may benefit from having a dermatologist involved in their care.

Potential conflicts of interest

The authors declare no conflicts of interest.

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