Outpatient dermatology consultation impacts the diagnosis and management of pediatric oncology patients: A retrospective study



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Background: The impact of dermatology consultation on the care of children with oncologic conditions is unknown.

Objective: To review outpatient dermatology visits and the resulting impact on diagnosis and management of pediatric oncology patients.

Method: Retrospective review of pediatric oncology patients with outpatient dermatology visits at a tertiary care center from 2008 to 2015.

Results: The most common dermatologic diagnoses in 516 patients were skin infections (21.3%) and nonmalignant skin eruptions (33.4%). A diagnosis of significant impact (ie, malignancy, adverse cutaneous drug reaction, graft-versus-host disease, varicella-zoster virus, or herpes simplex virus infection), was made at the dermatology clinic in 14.7% of visits. Consultation resulted in a change in diagnosis in 59.8% of patients, change in dermatologic management in 72.4% of patients, and change in management of noncutaneous issues in 12.4% of patients.

Limitations: The use of electronic medical records, the nongeneralizable study population, and the retrospective design represent potential limitations.

Conclusion: Outpatient dermatology consultation can affect the care of pediatric oncology patients with respect to diagnosis and treatment of skin conditions and management of nondermatologic issues. (J Am Acad Dermatol 2017;77:879-85.)

Key words: epidemiology; management; outpatient visits; pediatric oncology; treatment.

dvances in oncologic therapy have reduced mortality rates from primary disease.¹ Correspondingly, reactions and complications from cancer therapy have increased, as has the need for long-term surveillance for secondary neoplasms, especially in pediatric patients.¹⁻⁴

Abbreviations used:GVHD:graft-versus-host diseaseHSCT:hematopoietic stem cell transplantHSV:herpes simplex virusVZV:varicella zoster virus

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There are limited data on the impact of dermatology involvement on the care of these children. Prior studies of the epidemiology of skin conditions and the role of dermatologists in the care of pediatric patients were not specific to the pediatric oncology population.⁵⁻⁷

The objectives of this study were to determine the

characteristics of outpatient dermatology visits and the resulting impact on diagnosis and management of pediatric oncology patients.

METHODS Overview

The medical records of all patients with a Dana-Farber Cancer Institute medical record number and a dermatology clinic visit at Boston Children's Hospital from 2008 to 2015 were retrospectively reviewed for demo-

graphic and medical information. Inclusion criteria included an oncologic diagnosis and/or diagnosis requiring a hematopoietic stem cell transplant (HSCT) and a dermatology visit from 2008 to 2015. Exclusion criteria included the absence of a dermatology visit after an oncologic diagnosis was made. Institutional review board approval was obtained through the Boston Children's Hospital (P00016307).

Data collection

Each medical record was reviewed for demographic and clinical information, including age, sex, race, distance from home to hospital, and cancer type and therapy. Dermatologic assessment and management, including treatment and procedures, were recorded from up to 4 visits for unique dermatology complaints in each patient. When there were multiple cutaneous findings (eg, atopic dermatitis or molluscum contagiosum), all diagnoses were included.

If available, preliminary assessment and management of the skin condition by the referring oncologist were recorded. Time from referral by the oncology service to the dermatology clinic appointment was recorded.

Study definitions

Change in diagnosis was defined as discordance between dermatology and oncology assessment of the skin condition. Oncology referrals for routine skin surveillance, in which the dermatologist

CAPSULE SUMMARY

- Pediatric oncology patients develop skin conditions, including drug eruptions, graft-versus-host disease, cutaneous infection, and malignancy.
- Outpatient dermatology consultation resulted in a change in diagnosis in 59.8% of clinic visits and change in management in 72.4% of clinic visits.
- Dermatology consultation affects the care of pediatric oncology patients.

documented benign melanocytic nevi, were categorized separately as *skin surveillance*.

Change in dermatologic management was defined as the addition, withdrawal, or change in dose of topical or systemic medication for a dermatologic condition. Change in medical management was defined as the addition, withdrawal, or change in

> dose of a systemic medication or procedure for a nondermatologic condition. When the oncologist documented a need for dermatology consultation regarding medications or procedures for nondermatologic issues, we categorized the subsequent dermatology visit as leading to a change in medical management. Changes in dermatologic and medical management were examined for all referrals from the oncology service.

Diagnoses of significant impact were defined as adverse cutaneous drug reaction, cutaneous malignancy, herpes simplex virus (HSV) or varicella-zoster virus (VZV) infection, and graft-versus-host disease (GVHD) because of their potential for altering oncologic therapy.

Data analysis

Descriptive statistical analysis was performed with categorical data provided as frequencies and percentages and continuous data provided as means with standard deviations, and median values with ranges. Comparative statistical analysis was performed by using an unpaired t test and 2-tailed Fisher's test, utilizing GraphPad software (GraphPad Software, La Jolla, CA).

RESULTS

There were 1001 unique pediatric oncology patients seen by dermatologists from 2008 to 2015. The method of cohort selection is demonstrated in Fig 1. The medical records of 516 patients who met the inclusion and exclusion criteria were reviewed for demographic and clinical information. The medical records of 251 oncology patients with a documented oncology referral and a subsequent dermatology clinic visit were reviewed for the impact of dermatology consultation on diagnosis and treatment.

Demographic features

The demographic features of pediatric oncology patients seen in the dermatology clinic from 2008 to

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