Acta Dermatovenerol Croat 2014;22(4):259-263 CLINICAL ARTICLE

Specialists are not Qualified Enough to Recognize and Define Dermatologic Diseases

Sibel Dogan, Ferda Artuz

Ankara Numune Training and Research Hospital, Clinic of Dermatology and Venerology, Ankara, Turkey

Corresponding Author
Sibel Doğan, MD
Ankara Numune Training and Research Hospital
Clinic of Dermatology and Venereology
Ülkü Mahallesi Talatpaşa Bulvarı No:5
Altındağ
Ankara
Turkey
sibel.dogan@hacettepe.edu.tr

Received: February 5, 2014
Accepted: September 1, 2014

SUMMARY Dermatology is a specific branch of medicine which includes dermatologic manifestations of systemic underlying diseases as well as primary cutaneous diseases. In this study, specialists' abilities of defining and diagnosing dermatologic diseases were assessed. 381 hospitalized patients who were referred to the Dermatology Clinic were reviewed via electronic medical charts. 121 of the clinicians (31.2%) made a dermatologic definition when referring their patients to dermatology. 136 of the the clinicians (35.1%) made a pre-diagnosis for their patients' dermatologic condition of which 90 (66,2%) were correct and 46 (33,8%) were non-relevant. Internists wrote a definitive dermatologic examination note significantly more often than surgeons (P=0.03). However, there was not a significant difference between internists and surgeons when we compared the ratio of correct and complete dermatologic definitions of patient condition (P=0.503). There was also no difference between surgeons and internists in terms of making a pre-diagnosis, making a correct diagnosis, and making a wrong diagnosis (P>0.05 for each comparison). In conclusion, dermatologic consultations are crucial and necessary for the improvement of patient care and treatment. Specialists lack basic skills to recognize and define dermatologic conditions they are confronted with.

KEYWORDS: specialist; dermatology referral; diagnosis; skill

INTRODUCTION

Dermatology is a specific branch of medicine which includes dermatologic manifestations of systemic underlying diseases as well as primary cutaneous diseases. In our country, and in many others, training in dermatology is limited to medical school graduate programs and is usually not sufficient for medical practice. In this study, we aimed to assess the abilities of specialists in defining and diagnosing dermatologic diseases.

SUBJECTS AND METHODS

381 hospitalized patients who were referred to the Clinic of Dermatology and Venerology of Ankara Numune Training and Research Hospital in 2012-2013 for accompanying or new onset skin conditions were reviewed via electronic medical charts. The electronic referral system used for medical recording of consultations consisted of a section which had to be filled out by the specialist/physician of the patient. This section was expected to contain the patient's demographic data (age, gender), primary diagnosis for the inpatient follow-up at the time, and the reason for dermatologic consultation. Each patient's record was checked to determine whether it included a dermatologic definition for the complaint and/or a dermatologic pre-diagnosis.

Acta Dermatovenerol Croat
2014;22(4):259-263

RESULTS

A total of 381 patient were reviewed. The mean age of patients was 57.2 ± 18.2 years (min: 16, max: 95). Two hundred and two of the patients were female (53%), 179 were male (47%). A wide variety of clinics required consultation for the dermatologic complaints of patients (Table 1) .The most common clinics requiring dermatologic consultation were endocrinology (14.2%), internal medicine (10.0%), infectious diseases (8.7%), orthopedics (8.1), emergency service (6.8%), intensive care unit (6.3%), psychiatry (5.8%), and general surgery (5.2%). The most common diagnosis accompanying inpatient admission was type 2 diabetes mellitus (15.2%, N=58) followed by Behcet's disease and acquired immune deficiency syndrome (AIDS). One hundred and twenty one of the clinicians (31.2%) offered a dermatologic definition when referring their patients to our dermatology clinic. After reviewing the consultation reports, 97 (80.2%) were accepted as completely accurate dermatologic definitions compared to the patient examination by a dermatologist. Therefore, the overall accurate dermatologic definition rate was 25%. The most common dermatologic complaints of the patients used terms such as lesion (25.7%, N=97), eruption (11.5%, N=44), and pruritus/pruritic (11.0%, N=42). These were followed by wound, tinea pedis, Behcet's disease, and diabetic foot which were both used as undecisive terms and diagnosis of the referred patients. 136 of the the clinicians (35.1%) made a pre-diagnosis for their patients' dermatologic condition of which 90 (66.2%) were correct and 46 (33.8%) were non-relevant. As a result, only 23.2% of the patients with dermatologic complaints were able to get a correct dermatologic diagnosis when examined by their primary specialists (Table 1).

The most common dermatologic diagnoses were tinea pedis (7.6%, N=29) and contact dermatitis (6.0%, N=23). The most common missed dermatosis which was not denoted on the consultation report complaint section was tinea unguium; it was a secondary diagnosis in 2.8% of the patients (N=11). The dermatologic diagnoses which were recognized by primary clinicians were tinea pedis (N=19), tinea unguium (N=10). Behcet's disease (N=9), diabetic foot (N=6), urticaria (N=5), adverse cutaneous drug reaction (N=4), stasis dermatitis (N=4), zona zoster (N=4), herpes labialis (N=3), tinea cruris (N=3), intertrigo (N=3), and callus (N=2). The diagnoses which were referred with inaccurate pre-diagnoses were contact dermatitis (N=5) (drug eruption, cellulitis), seborrheic keratoses (N=4) (melanoctic nevi, tumur, squamous cell carcinoma), cellulitis (contact dermatitis, stasis dermatitis, drug eruption) (N=4), tinea pedis (N=2) (eczema), candidiasis (N=3) (contact dermatitis, urticaria), alopecia areata (telogen effluvium), basal cell carcinoma (basal cell carcinoma) (herpes), traumatic bullae (drug eruption), psoriasis (contact dermatitis), recurrent aphtous stomatitis (Behcet's disease), stasis dermatitis (cellulitis), Kaposi sarcoma (benign epithelial tumour), pruritic plaques and papules of pregnancy (PUPPP) (urticaria), miliaria rubra (drug eruption), pyoderma (eczema), adverse cutaneous drug reaction (eczema, contact dermatitis), erythema anulare centrifigum (urticaria), zona zoster (cellulitis), paronychia (eczema), diaper dermatitis (eczema), rosacea (flushing), cutaneous metastasis (epithelial proliferation), and hidradentitis suppurativa (acne) (Table 2).

Comparisons made according to branches of specialists revealed internists indicated the anatomic site of dermatologic condition significantly more than surgical branch clinicians (surgeons) (P=0.001). Internists wrote a definitive dermatologic examination note significantly more than surgeons (P=0.03). However, there was no significant difference between internists and surgeons when we compared the ratio of accurate dermatologic definition of patient condition (P=0.503). There was also no difference between surgeons and internists in terms of making a pre-diagnosis, making a correct diagnosis, and making a wrong diagnosis (P>0.05 for each comparison).

DISCUSSION

Dermatology is one of the most visited clinics on both an outpatient and inpatient basis. The percentage of emergency admissions for a dermatologic complaint accounts is 2.1-3.0% (1,2). Nahass *et al.* found a prevalence of 35.9% of cutaneous findings and 22.5% primary cutaneous disorders in hospitalized patients (3). The rate of inpatient consultation of Dermatology Clinic is 120-150 per month at our hospital, which is a tertiary center with a capacity of 1440 inpatients. Cutaneous examination is almost always a part of routine physical examination in every branch of medicine. Most specialists who have the option refer their patients to a dermatologist, but it is often not possible for many primary practitioners, which is where having basic dermatologic skills becomes more important.

Most diagnoses which are generally referred to dermatologists are specific cutaneous diseases, as also seen in our study (3,4). Tinea pedis and contact dermatitis were the most common dermatological disorders, which agrees with previous studies (5,6). In fact, this particular profile of patients occupied the most bedside time of consultant dermatologists. Dermatologic consultation changed the dermatologic

Acta Dermatovenerol Croat
2014;22(4):259-263

Table 1. Referral clinics and their rates of dermatologic definition, pre-diagnosis, and accurate diagnosis

Inpatient clinic	Total (N, %)	Dermatologic definition (defined/not defined, %)	Prediagnosis (N, %)	Accurate diagnosis (N, %)
Endocrinology	54 (14.2)	17/37 (31.5)	27 (50.0)	22 (40.7)
Internal medicine	38 (10.0)	13/25 (34.2)	15 (39.5)	9 (23.7)
Infectious disease	33 (8.7)	17/16 (51.5)	10 (30.3)	7 (21.2)
Orthopedics	(31 8.1)	4/27 (12.9)	9 (29.0)	6 (19.4)
Emergency service	26 (6.8)	15/11 (57.7)	9 (34.6)	7 (26.9)
Intensive care unit	24 (6.3)	9/15 (37.5)	4 (16.7)	2 (8.3)
Psychiatry	22 (5.8)	8/14 (36.3)	7 (31.8)	4 (18.2)
General surgery	20 (5.2)	6/14 (30.0)	10 (50.0)	10 (50.0)
Neurology	15 (3.9)	4/11 (26.7)	6 (40.0)	3 (20.0)
Neurosurgery	14 (3.7)	4/10 (28.6)	3 (21.4)	0 (0.0)
Nephrology	14 (3.7)	4/10 (28.6)	3 (21.4)	1 (7.1)
Urology	14 (3.7)	1/13 (7.1)	7 (50.0)	3 (21.4)
Rheumatology	12 (3.1)	6/6 (50.0)	3 (25.0)	1 (8.3)
Gynecology	11 (2.9)	5/6 (45.5)	5 (45.5)	3 (27.3)
Physical therapy	8 (2.1)	4/4 (50.0)	4 (50.0)	2 (25.0)
Gastroenterology	7 (1.8)	0/7 (0.0)	3 (42.9)	3 (42.9)
Bone marrow unit	7 (1.8)	2/5 (28.6)	2 (28.6)	2 (28.6)
Ophtalmology	6 (1.6)	1/5 (16.7)	2 (25.0)	2 (33.3)
Hematology	5 (1.3)	4/1 (80.0)	2 (40.0)	1 (20.0)
Plastic surgery	5 (1.3)	1/4 (20.0)	2 (40.0)	1 (20.0)
Cardiology	4 (1.0)	1/3 (25.0)	1 (25.0)	1 (25.0)
Otorhinolaringology	4 (1.0)	2/2 (50.0)	1 (25.0)	0 (0.0)
Medical oncology	4 (1.0)	1/3 (25.0)	0 (0.0)	-
Radiation oncology	2 (0.5)	1/1 (50.0)	0 (0.0)	-
Burn unit	1 (0.3)	0/1 (0.0)	1 (100.0)	0 (0)

diagnosis and treatment in more than 2/3 of the patients, and the physicians' evaluations revealed that the dermatologic consultation greatly aided in diagnosis and/or treatment of dermatologic diseases independently from disease at admission (7,8). This was also shown in our study, where 75% of patients who

Acta Dermatovenerol Croat
2014;22(4):259-263

Table 2. Common correct and missed diagnoses of non-dermatologists

Inpatient clinic	Correct diagnosis	Missed diagnosis
General surgery	Tinea pedis, intertrigo, urticaria, zona zoster, cutaneous herpes, psoriasis	Leucocytoclastic vasculitis, tinea unguium, decubitus, contact dermatitis, lichen simplex chronicus, oral aphtae, pityriasis rosea, adverse cutaneous drug reaction
Gastroenterology	Nummular dermatitis, diabetic foot, Behcet's disease	Pemphigus vulgaris, decubitus, intertrigo
Endocrinology	Tinea pedis, tinea cruris, tinea unguium, diabetic foot	Soft fibrom, acanthosis nigricans, stasis dermatitis, Kaposi sarcoma, verruca vulgaris, contact dermatitis, tinea corporis, pigmented BCC, callus, seborrheic keratosis, urticaria, lymphedema, lichen simplex chronicus, erythema anulare centrifigum, necrobiosis lipoidica
Ophtalmology	Behcet's disease	Zona zoster, acne vulgaris, seborrheic keratosis
Bone marrow transplant unit	Tinea unguium, zona zoster	Steroid induced acne, tinea pedis, intertrigo, erythema anulare centrifigum
Obstetrics&gynecology	Pediculosis capitis, oral aphtae	Lichen sclerosus , herpes, pruritic urticarial papules and plaques of pregnancy, miliaria
Emergency service	Intertrigo, zona zoster, erythema multiforme, stasis dermatitis	Disseminated intravascular coagulation (DIC), varicella zoster, contact dermatitis, pyoderma, cutaneous herpes, decubitus, diaper dermatitis, cutaneous vasculitis, cellulitis, adverse cutaneous drug reaction, BCC
Internal medicine	Behcet's disease, stasis dermatitis, tinea corporis	Seborrheic keratosis, pustular drug eruption, tinea pedis, candidiasis, pemphigus vulgaris, dishydrotic eczema, lichen simplex chronicus, BCC, granuloma annulare, cellulitis
Infectious diseases	Tinea pedis, Kaposi sarcoma, tinea unguium	Adverse cutaneous drug reaction, panniculitis, Sweet's syndrome, psoriasis, urticaria, candidiasis, BCC, hidradenitis suppurativa, cutaneous vasculitis, cutaneous metastasis

were not diagnoses or were misdiagnosed for their dermatologic conditions were diagnosed and treated after dermatologic consultation.

Most of the specialists who were able to diagnose dermatologic diseases were the ones who follow-up the patients with a diagnosis with a dermatologic aspect and became familiar with it. For example, endocrinologists were able to diagnose tinea pedis and diabetic foot. We think that the accuracy of dermatologic diagnosis by specialist does not reflect a basic dermatological skill-level, but occurs only when particular overlapping diseases between the branches exist. In fact, there was no difference between internists and surgeons in their dermatologic skills of recognizing, defining, and diagnosing at all. In several studies which were made to assess non-dermatologists abilities, a moderate 44.0-51.1% rate of correct diagnosing was achieved among internists and general practitioners (9,10). Although this was much lower among specialists in this study, dermatologic diseases of hospitalized patients can be more complicated and thus harder to diagnose than common dermatologic diseases.

CONCLUSION

Dermatologic consultations are crucial and necessary for the improvement of patient care and treatment. Specialists lack basic skills to recognize and define dermatologic conditions they are confronted with. Serious postgraduate programs which include current basic knowledge on common dermatologic diseases and crucial rare dermatoses for urgent referral are mandatory to deal with this issue in tertiary medical centers.

References

1. Wang E, Lim BL, Than KY. Dermatological conditions presenting at an emergency department in Singapore. Singapore Med J 2009;50:881-4.
2. Kim JY, Cho HH, Hong JS, Jin SP, Park HS, Lee JH, *et al.* Skin conditions presenting in emergency room in Korea: an eight-year retrospective analysis. J Eur Acad Dermatol Venereol 2013;27:479-85.
3. Nahass GT, Meyer AJ, Campbell SF, Heaney RM. Prevalence of cutaneous findings in hospita-

lised medical patients. J Am Acad Dermatol. 1995;33:207-11.

4. Penate Y, Guillermo N, Melwani P, Martel R, Borrego L. Dermatologists in hospital wards: an 8-year study of dermatology consultations. Dermatology 2009;219:225-31.
5. Maza A, Berbis J, Gaudy-Marqueste C, Morand JJ, Berbis P, Grob JJ, *et al.* Evaluation of dermatology consultations in a prospective multicenter study involving a French teaching hospital. Ann Dermatol Venereol 2009;136:241-8.
6. Fischer M, Bergert H, Marsch WC. The dermatologic consultation. Hautarzt 2004;55:543-8.
7. Walia NS, Deb S. Dermatology referrals in the hospital setting. Indian J Dermatol Venereol Leprol 2004;70:285-7.
8. Mancusi S, Festa Neto C. Inpatient dermatological consultations in a university hospital. Clinics (Sao Paulo) 2010;65:851-5.
9. Moreno G, Tran H, Chia AL, Lim A, Shumack S. Prospective study to assess general practitioners' dermatological diagnostic skills in a referral setting. Australas J Dermatol 2007;48:77-82.
10. Antic M, Conen D, Itin PH. Teaching effects of dermatological consultations on nondermatologists in the field of internal medicine. A study of 1290 inpatients. Dermatology 2004;208:32-7