Table II. Risk factors for the local recurrence of primary DFSP after Mohs micrographic surgery

Factors	Univariate analysis OR (95% CI)	*P* value	Multivariate analysis OR (95% CI)	*P* value
Age at diagnosis > 30 y	1.141 (0.263-7.604)	.680	1.199 (0.922-1.559)	.175
Years from presentation to diagnosis > 20 y	6.400 (1.049-39.064)	.073	1.063 (0.956-1.183)	.257
Size > 5 cm	6.115 (1.230-30.409)	.043	1.123 (0.893-1.413)	.320
Location				
Trunk	1		1	
Head, face, neck	5.444 (0.874-33.924)	.099	9.036 (0.966-84.558)	.544
Extremity	2.042 (0.211-19.798)	.564	0.452 (0.015-13.812)	.649
Male sex	1.750 (0.326-9.389)	.700	0.709 (0.102-4.930)	.728
Histology, FS-DFSP	9.167 (1.771-47.44)	.030	13.419 (1.883-95.613)	.010

CI, Confidence interval; *DFSP*, dermatofibrosarcoma protuberans; *FS-DFSP*, dermatofibrosarcoma protuberans with fibrosarcomatous change; *OR*, odds ratio.

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Correspondence to: Yi Ji, MD, PhD, Division of Oncology, Department of Pediatric Surgery, West China Hospital of Sichuan University, #37 Guo-Xue-Xiang, Chengdu, 610041, China

E-mail: jijiyuanyuan@163.com

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A survey-based study of diagnostic and treatment concordance in standardized cases of cellulitis and pseudocellulitis via teledermatology

To the Editor: Hospital admissions in which cellulitis was the primary admitting diagnosis cost $3.7 billion in 2013.[1] Cellulitis is misdiagnosed in 30% of cases, and dermatology consultation can reduce these errors.[2] Teledermatology may offer a novel solution to overcome access problems within hospitals.[3]

We presented deidentified clinical images, case histories, and physical examination findings to dermatologists and asked them to differentiate cellulitis from pseudocellulitis. Each case presentation was followed by questions on diagnosis, workup, management, and comfort with teledermatology. After institutional review board exemption, the Scientific Committee for the Society of Dermatology Hospitalists approved the study to be sent to members with interest in cellulitis. Concordance was measured by Fleiss's κ, and bivariate linear regression was performed to examine the association between comfort with managing the cases and independent variables.

Participants were, on average, 6 years postresidency (range: 2-11 years, standard deviation [SD]: 3) and were seeing 340 inpatient consults per year (range: 30-1000, SD: 299), of which an estimated 38 (range: 3-100, SD: 35) were specifically cellulitis/pseudocellulitis.

There was moderate agreement in differentiating cellulitis from pseudocellulitis and antibiotic use recommendations ($\kappa = 0.52 \pm 0.05$ and 0.42 ± 0.05, respectively), fair agreement in the decision to discharge the patient ($\kappa = 0.32 \pm 0.05$), and slight agreement in the need for additional workup and skin biopsy ($\kappa = 0.09 \pm 0.05$ and 0.12 ± 0.05, respectively). The κ values measure interrater reliability and range from -1 to +1; thus, a κ of 0.52

Table I. Percent agreement with final diagnosis and antibiotic use by final diagnosis

Case number	Final diagnosis	Percent agreement with final diagnosis	Percent agreement with antibiotic use (agreement to continue or to stop if deemed unnecessary)
1	Lymphatic rubor	80	73
2	Stasis dermatitis	100	100
3	Allergic contact dermatitis	40	33
4	Lipodermatosclerosis	93	87
5	Lymphedema	100	93
6	Cellulitis	100	100
7	Erythema nodosum	47	27
8	Hematoma	73	33
9	Cellulitis	87	87
10	Gram-negative toe web infection	100	60
11	Herpes zoster	100	100
12	Gout	100	87
13	Superficial venous thrombosis/ thrombophlebitis	87	79
Mean		85	74

represents 52% agreement. Comfort with managing the case via teledermatology was inversely associated with number of years postresidency and cellulitis- and pseudocellulitis-specific consult volumes seen per year (correlation coefficient = -0.81, -0.40, and -0.46, respectively). Comfort with managing the case was associated with increased antibiotic stewardship (decision to appropriately stop antibiotics when they are not needed, correlation coefficient = 0.37). Percent agreement with final diagnosis and antibiotic use by diagnosis was measured (Table I).

Although dermatologists believe the criterion standard for diagnosis of cellulitis to be their evaluations, responses often disagree with those of other specialists, making accuracy hard to define. The evaluation of cellulitis by dermatologists holds the potential to change management and minimize inpatient hospitalization.[1] We found the highest agreement for what we believe to be the most important outcomes: diagnosis, discharge, and antibiotic management plans. The agreement rates for biopsy and laboratory workup were low; these likely relate to practice differences and do not necessarily reflect a challenge unique to teledermatology. Furthermore, studies evaluating in-person management of cellulitis found marked variability, suggesting that differences in management are not unique to teledermatology.[4] We also found that comfort with managing cases by teledermatology inversely correlated with experience, which could support data that newer dermatologists with teledermatology experience in residency are more comfortable with telemedicine.[5] Conversely, the data may suggest that dermatologists with more seniority or higher volumes have seen atypical cases that reduce their comfort with the limited data presented. A main limitation is that we surveyed a group of dedicated hospitalist dermatologists interested in cellulitis, and these findings may not be generalizable to all dermatologists.

We thank the Scientific Committee of the Society of Dermatology Hospitalists for reviewing and approving our study.

Collaborators: Adela R. Cardones, MD, Arturo R Dominguez, MD, Alisa N. Femia, MD, Jesse J. Keller, MD, Daniel Li, BS, Sahand Rahnama-Moghadam, MD, Sabrina Newman, MD, Megan H. Noe, MD, MPH, MSCE, Tejesh Patel, MD, Kanade Shinkai, MD, PhD, Michi M. Shinohara, MD, and Lucia Seminario, MD, PhD.

Abraham M. Korman, MD,[a] Daniela Kroshinsky, MD, MPH,[b] Adam B. Raff, MD, PhD,[b] Arash Mostaghimi, MD, MPA, MPH,[b] Robert G. Micheletti, MD,[c] Misha Rosenbach, MD,[c] and Benjamin H. Kaffenberger, MD,[a] on behalf of the Society of Dermatology Hospitalists Scientific Task Force on Cellulitis[‡]

From the Division of Dermatology, Department of Internal Medicine, The Ohio State University, Columbus, Ohio[a]*; Department of Dermatology, Massachusetts General Hospital, Harvard Medical School, Boston, Massachusetts*[b]*; and Department of Dermatology, Perelman School of Medicine, University of Pennsylvania, Philadelphia.*[c]

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Reprint requests: Benjamin H. Kaffenberger, MD, 1328 Dublin Rd, Ste 100, Columbus, OH 43215

E-mail: Benjamin.Kaffenberger@osumc.edu

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Home-based contact immunotherapy with diphenylcyclopropenone improves compliance with the recommended follow-up for patients with alopecia areata: A retrospective cohort study

To the Editor: Contact immunotherapy (CI) is widely used to treat extensive alopecia areata (AA).[1] However, it requires administration every 1 to 2 weeks, imposing temporal and financial burdens on patients.[2,3] We previously introduced home-based CI to reduce these burdens and it was as effective and safe as the clinic-based treatment.[4] Herein we analyze whether the home-based treatment improves follow-up compliance compared with the clinic-based treatment.

We reviewed the medical records of 840 patients with AA who underwent CI using diphenylcyclopropenone between May 1995 and March 2018. We collected data regarding the patients' sex, age, date of switching to home-based treatment, and date of the last visit. We recorded the roadway distance from patients' residences to the clinic using an Internet map service (https://maps.naver.com). Of the 840 patients, 66 switched to home-based treatment, of whom 15 were excluded owing to incomplete or missing data in the medical records or remaining unmatched in the 1:3 randomized matching (by age and sex). Finally, 51 patients who switched treatments (switched group) and 153 patients who did not switch treatment (unswitched group) were included in the analysis.

In the Kaplan-Meier analysis, the rate for loss to follow-up (no revisits in >180 days) was significantly lower in the switched group (Fig 1). In the incremental area under the curve analysis according to visiting distance (full data not shown), >35 km (>21.75 mi) was the best predictor of loss to follow-up (hazard ratio coefficient, 1.574; 95% confidence interval, 1.092-2.270; incremental area under the curve, 0.549). A Kaplan-Meier analysis was performed for the 4 subgroups (Fig 2) derived from the 2 groups by the 35-km distance. In the unswitched group, the subgroup with a visiting distance >35 km had a significantly higher loss-to-follow-up rate. However, in the home-based treatment group, the loss-to-follow-up rate did not increase even with greater distances. Therefore, >35 km may be the optimal distance for recommending home-based treatment to reduce the possibility of loss to follow-up.

We demonstrated the advantage of home-based CI for follow-up compliance. The switched group had a lower loss-to-follow-up rate and maintained follow-up even with greater visiting distances.

Prolonged treatment is often required in AA management. Diphenylcyclopropenone maintenance treatment reduces the recurrence rate[5]; however, long-term treatment requires strong patient compliance. Factors that reduce the compliance rate include adverse effects and lower treatment response, but temporal and financial burdens are also important contributors.[4] Home-based treatment may effectively reduce these burdens and assist in maintaining both treatment and compliance.

Generally, the possibility of loss to follow-up increases with long visiting distances that require more time to visit the clinic. Home-based treatment reduces these burdens more effectively with greater visiting distances. We proposed the concept of an optimal distance to actively consider a home-based treatment. Establishing optimal distances for each clinic can help in deciding the appropriate treatment method. Limitations of this study include the small sample size and retrospective design.

In conclusion, home-based treatment improves the follow-up compliance of patients treated with CI.