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Comparison of long-term cosmetic outcomes for different treatments of superficial basal cell carcinoma

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Table II. Provider responses to statement "I feel confident in my ability to diagnose and manage my patients' dermatologic conditions"

Provider response	Preintervention, n = 18	Postintervention, n = 18
Agree, % (n)	16.7 (3)	38.9 (7)
Neither agree nor disagree, % (n)	50 (9)	55.6 (10)
Disagree, % (n)	33.3 (6)	5.6 (1)

more dermatologic care, SAF teledermatology can increase access to improved dermatologic care overall.

The findings of our pilot study indicate that implementation of a teledermatology platform enhances referring provider knowledge and empowers them to provide dermatologic care for their patients. Limitations to this study's validity include small sample size and the fact that the survey knowledge questions were identical before and after the intervention. Further studies with larger cohorts will be needed to capture the benefit of adding access to other educational modalities, such as VisualDx, to the use of teledermatology.

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Girish C. Mohan, MD,[a] Gabriel E. Molina, BA,[a] and Robert Stavert, MD, MBA[b]

From the Department of Dermatology, Beth Israel Deaconess Medical Center, Harvard Medical School, Boston, Massachusetts[a]; and Department of Internal Medicine, Division of Dermatology, Cambridge Health Alliance, Cambridge, Massachusetts[b]

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Correspondence to: Girish Mohan, MD, Department of Dermatology, Beth Israel Deaconess Medical Center, 330 Brookline Ave, Boston, MA 02215

E-mail: girish.mohan@mgh.harvard.edu

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Comparison of long-term cosmetic outcomes for different treatments of superficial basal cell carcinoma

To the Editor: The incidence of basal cell carcinoma (BCC) is rapidly increasing.[1] Because younger patients also develop BCC, cosmetic outcome is becoming more important.[1,2]

During March 2008-August 2010, a total of 601 Dutch patients with one histologically proven primary superficial BCC (sBCC) were included in a randomized controlled trial comparing the effectiveness of methyl aminolevulinate photodynamic therapy (MAL-PDT), imiquimod, and 5-fluorouracil.[3] A detailed description of the study was published previously.[3] Here we report on the cosmetic outcome, evaluated by using a 4-point scale (poor, fair, good, and excellent), 5 years after the initial treatment.[4] The primary outcome was the percentage of patients with a good or excellent cosmetic outcomes 5 years after the initial treatment, judged in live patients by an investigator blinded to treatment allocation.

The cosmetic results were dichotomized into good or excellent and poor or fair. The primary analyses were performed according to the assigned treatment (intention-to-treat analysis). The secondary analyses were performed according to the treatment patients actually received. Patients with a recurrence were retreated and categorized into separate groups (excision or other treatment).

The patient flow chart is presented in Fig 1. The distribution of baseline characteristics was

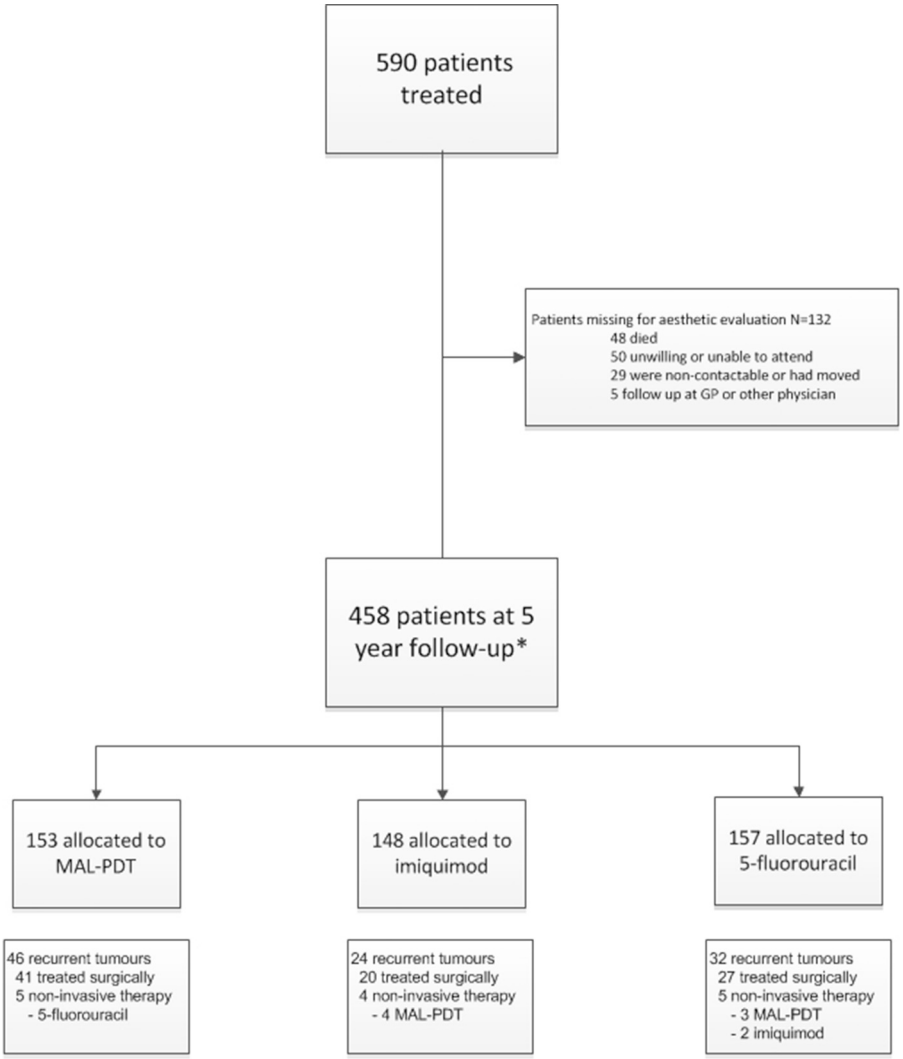

Fig 1. Flow chart of patient population. *Cosmetic evaluation occurred 5 years after receiving topical treatment for superficial basal cell carcinoma, according to intention-to-treat analysis. *GP*, General practitioner; *MAL-PDT*, methyl aminolevulinate photodynamic therapy.

similar among treatment groups, except for tumor size, which was smallest in the MAL-PDT group (Table I).

In the primary analysis, good and excellent cosmetic results were found in 89.5% (137/153) of the patients with sBCCs allocated to the MAL-PDT group, 81.8% (121/148) allocated to the imiquimod group, and 84.7% (133/157) allocated to the 5-fluorouracil group (Table II). The relative risks (RRs) for fair or poor outcome were 0.91 (95% confidence interval [CI] 0.83-1.00, $P = .03$) for the imiquimod treatment and 0.95 (95% CI 0.87-1.03, $P = .11$) for the 5-fluorouracil treatment when compared with MAL-PDT.

In the secondary analysis including only recurrence-free tumors, cosmetic outcomes were rated as good or excellent in 96.3% (105/109) of the patients with sBCCs after MAL-PDT treatment, 83.1% (103/124) after imiquimod treatment, and 87% (107/123) after 5-fluorouracil treatment. RR values indicated a decreased probability of good or excellent cosmetic outcome after imiquimod or 5-fluorouracil treatment compared with MAL-PDT (Table II). All 3 noninvasive options yielded a better cosmetic outcome than retreatment of recurrent BCC with excision or an alternative treatment, with a good or excellent cosmetic result in 75% (66/88) and 71.4% (10/14), respectively. Dichotomization of the results into excellent versus nonexcellent (ie, good, fair, and poor) showed similar results.

The results of our study show that MAL-PDT has a statistically significant better cosmetic outcome than imiquimod or 5-fluorouracil therapy for the treatment of sBCC at 5 years posttreatment in

Table I. Patient and tumor baseline characteristics according to treatment assigned by randomization

Characteristics	Total, N = 458	PDT, n = 153	Imiquimod, n = 148	5-FU, n = 157
Sex, n (%)				
Male	231 (50)	74 (48)	79 (53)	78 (50)
Female	227 (50)	79 (52)	69 (47)	79 (50)
Age, y, median (range)	62 (26-86)	62 (26-86)	62 (30-82)	64 (37-86)
Fitzpatrick skin type, n (%)				
I	110 (24)	41 (27)	38 (26)	31 (20)
II	278 (61)	87 (57)	84 (57)	107 (68)
III	20 (4)	6 (4)	8 (5)	6 (4)
Not recorded	50 (11)	19 (12)	18 (12)	13 (8)
Tumor size at diagnosis, mm^2, median (range)	57 (5-1413)	50 (5-1382)	63 (5-1413)	63 (9-942)
Tumor location, n (%)				
Head/neck	58 (13)	17 (11)	14 (10)	27 (17)
Trunk	282 (62)	93 (61)	98 (66)	91 (58)
Upper extremities	57 (12)	20 (13)	17 (12)	20 (13)
Lower extremities	61 (13)	23 (15)	19 (13)	19 (12)

Table II. Association of treatment of primary superficial basal cell carcinoma with good or excellent cosmetic outcome

Analysis type, treatment group	Value, % (n)	RR (95% CI)	*P* value		
Primary					
Photodynamic therapy	89.5 (137/153)	1 (reference)	-		
Imiquimod	81.8 (121/148)	0.91 (0.83-1.00)	.03		
5-Fluorouracil	84.7 (133/157)	0.95 (0.87-1.03)	.11		
	Value, % (n)	**RR (95% CI)**	***P* value**	**RR (95% CI)**	***P* value**
Secondary					
Photodynamic therapy	96.3 (105/109)	1.28 (1.13-1.46)	<.001	1 (reference)	-
Imiquimod	83.1 (103/124)	1.11 (0.96-1.28)	.08	0.86 (0.79-0.94)	<.001
5-Fluorouracil	87.0 (107/123)	1.16 (1.01-1.33)	.01	0.90 (0.84-0.98)	.006
Surgical excision	75.0 (66/88)	1 (reference)	-		
Other	71.4 (10/14)	0.95 (0.67-1.36)	.38		

A RR <1 indicates decreased probability of good or excellent cosmetic outcome. A RR >1 indicates increased probability of good or excellent cosmetic outcome.
CI, Confidence interval; *RR*, relative risk.

recurrence-free patients. However, in cases of treatment failure, which occurred more frequently after treatment with MAL-PDT (5-year probability of tumor-free survival in MAL-PDT vs imiquimod and 5-fluorouracil, 62.7% [95% CI 55.3-69.2%] vs 80.5% [95% CI 74.0-85.6%] and 70.0% [95% CI 62.9-76.0%]),[5] retreatment with surgical excision was associated with a lower chance of good or excellent cosmetic outcomes. The net effect is that there are no significant differences in cosmetic results among MAL-PDT, imiquimod, and 5-fluorouracil when taking risk for recurrence into account. In combination with the higher effectiveness, the view of the authors is to still consider 5% imiquimod cream as first choice noninvasive treatment option for most cases of primary sBCC.

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Maud H. E. Jansen, MD,[a,b] Fabienne H. J. Koekelkoren, MD,[a] Patty J. Nelemans, PhD,[c] Aimee H. M. M. Arits, PhD,[a,b,d] Marieke H. Roozeboom, PhD,[e] Nicole W. J. Kelleners-Smeets, PhD,[a,b] and Klara Mosterd, PhD[a,b]

From the Department of Dermatology,[a] GROW School for Oncology and Developmental Biology,[b] and Department of Epidemiology,[c] Maastricht University Medical Centre, Maastricht, the Netherlands; Department of Dermatology, Catharina Hospital, Eindhoven, the Netherlands[d]; and Department of Dermatology, Elkerliek Hospital, Helmond, the Netherlands[e]

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Correspondence to: Maud H. E. Jansen, MD, Department of Dermatology, Maastricht University Medical Center, azM, P. Debyelaan 25, 6229 HX Maastricht, the Netherlands, PO box 5800, 6202 AZ Maastricht, the Netherlands

E-mail: maud.jansen@mumc.nl

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Knowledge of melanoma and nonmelanoma skin cancer among general dermatology patients

To the Editor: More than 5 million skin cancers are treated in the United States each year. Government agencies have highlighted the provider's role in educating patients about skin cancer. In response, efforts have focused predominantly on behavioral changes—in particular, sun-safe practices—rather than education. These behavioral programs include sun safety campaigns, installation of public sunscreen dispensers, and tanning bed restrictions. Although the literature shows these behavior-driven efforts are beneficial to patients, improvements in behavior have not translated into improvements in patient knowledge. Knowledge gaps have been documented in minority populations,[1] school populations,[2] outdoor workers,[3] and various international communities.[4] Data from the transplant population demonstrates that skin cancer education can effectively change preventive behavior[5]; those who were educated about skin cancer were more likely to practice safe sun behaviors and had decreased sun-related hyperpigmentation, signifying that improvements in education are related to improvements in behavior. A focus on

Table I. Skin cancer knowledge scores

Question	Answered correctly, %*
Most common skin cancer	
Basal cell carcinoma	23.4
Squamous cell carcinoma	8.1
Melanoma	26.7
Equally common	8.4
Don't know	32.3
Skin cancer associated with moles	
Basal cell carcinoma	11.4
Squamous cell carcinoma	4.8
Melanoma	29.3
Equally	11
None	4.4
Don't know	38.1
Clinical presentation of most dangerous skin cancer	
Rough scaly patch	9.9
Small pearly bump	4.4
Large red bump	3.7
Large irregular mole	46.9
Don't know	33.7
Most dangerous type of skin cancer	
Basal cell carcinoma	5.9
Squamous cell carcinoma	4.4
Melanoma	41.4
Equally dangerous	15.8
Don't know	31.9
Skin cancer most likely to metastasize	
Basal cell carcinoma	5.9
Squamous cell carcinoma	4.0
Melanoma	34.1
Equally likely	13.2
Don't know	41
Personal history of skin cancer increases your risk of skin cancer	
True	84.2
False	11.0
Family history of skin cancer increases your risk of skin cancer	
True	81.7
False	16.1

*Percent answered correctly out of the total number of surveys with the question answered. Questions that were skipped by participants were not included.