

ORIGINAL ARTICLE

Physicians involved in the care of patients with high risk of skin cancer should be trained regarding sun protection measures: evidence from a cross sectional study

M Thomas,[†] E Rioual,[‡] H Adamski,[‡] A-M Roguedas,[§] L Misery,[§] M Michel,[¶] F Chastel,^{**} J-L Schmutz,^{**} F Aubin,^{††} M-C Marguery,[†] N. Meyer^{†,*}

[†]Dermatology Department, Paul Sabatier – Toulouse 3 University and University Hospital of Toulouse, Toulouse, France

[‡]Dermatology Department, University Hospital of Rennes, Rennes, France

[§]Dermatology Department, Bretagne Occidentale University and University Hospital of Brest, Brest, France

[¶]Dermatology Department, University Hospital of Caen – Clemenceau Hospital, Caen, France

^{**}Dermatology Department, University Hospital of Nancy, Nancy, France

^{††}Dermatology Department, University Hospital of Besançon, Besançon, France

*Correspondence: N Meyer. E-mail: meyer.n@chu-toulouse.fr

Abstract

Background Knowledge, regarding sun protection, is essential to change behaviour and to reduce sun exposure of patients at risk for skin cancer. Patient education regarding appropriate or sun protection measures, is a priority to reduce skin cancer incidence.

Objective The aim of this study was to evaluate the knowledge about sun protection and the recommendations given in a population of non-dermatologists physicians involved in the care of patients at high risk of skin cancer.

Materials and methods This study is a cross-sectional study. Physicians were e-mailed an anonymous questionnaire evaluating the knowledge about risk factors for skin cancer, sun protection and about the role of the physician in providing sun protection recommendations.

Results Of the responders, 71.4% considered that the risk of skin cancer of their patients was increased when compared with the general population. All the responders knew that UV-radiations can contribute to induce skin cancers and 71.4% of them declared having adequate knowledge about sun protection measures. A proportion of 64.2% of them declared that they were able to give sun protection advices: using sunscreens (97.8%), wearing covering clothes (95.5%), performing regular medical skin examination (91.1%), to avoid direct sunlight exposure (77.8%), avoiding outdoor activities in the hottest midday hours (73.3%) and practising progressive exposure (44.4%).

Conclusion Non-dermatologist physicians reported a correct knowledge of UV-induced skin cancer risk factors. The majority of responders displayed adequate knowledge of sun protection measures and declared providing patients with sun protection recommendation on a regular basis. Several errors persisted.

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Keywords

melanoma, prevention and education, skin neoplasms, sun protection, suncreening agents, ultraviolet rays

Conflict of interest

None declared.

Introduction

Skin cancers, including non-melanoma skin cancer and melanoma, are the most frequent cancers in adults. In France, the standardized yearly incidence of squamous cell carcinoma (SCC) and Basal Cell Carcinoma (BCC) was estimated at 10/100 000 and 70/100 000 respectively.¹ In Europe, 35 000 cases of melanoma were diagnosed and 9000 deaths were caused by melanoma in the

year 2000.² The incidence of melanoma increases faster than any other malignancy.³ Skin cancers require efficient screening and prevention programmes.

One of the most important environmental factors associated with skin cancers is ultraviolet radiation (UV).⁴⁻⁶ The incidence of skin cancer has risen significantly over the past 30 years, in part because of a rise in intentional and recreational sunbathing.⁷ UV

light remains the most important avoidable risk factor for skin cancer.⁸ Sunburns increase the risk of cutaneous melanoma whatever the age they happen.⁹ Promoting sun protection is the primary objective of skin cancer prevention programmes.

Sun protection measures include sun-exposure avoidance, the use of covering clothes and of a hat and regular sunscreen use.^{10–12} In France, official recommendations concerning sun protection measures are as follows:¹³

- 1 Sun-exposure avoidance in the hottest midday hours (11 AM–3 PM).
- 2 To take into account UV-reflecting surfaces (sand, water, snow).
- 3 To wear covering clothes, and a hat.
- 4 To apply high Sun Protection Factor (SPF \geq 30) broad spectrum sunscreen every 2 h when in the sun.
- 5 To avoid artificial tanning devices.

Other skin cancer risk factors are as follows: personal or familial history of skin cancer, a fair skin, blond or red hair and a tendency to burn easily, exposure to ionizing radiations and longstanding immune suppression.^{14–16}

Knowledge of the UV-induced risk of skin cancer and of the sun protection measures is essential to achieve skin cancer prevention. Education regarding appropriate sun protection is an important task for physicians. Although media campaigns have a positive impact on promoting sun protection awareness, they appear to have limited impact on long-term behavioural changes.¹⁷ The effects of these campaigns do not necessarily translate into benefits because they may affect the perception of the risk and induce a false protection-feeling.^{18,19} The most efficient sun protection educational programmes appear to be long and/or repeated training sessions with active individual participation.²⁰ Recommendations given by medical doctors have been shown to be associated with higher sun-safety compliance when compared with mass-media campaigns.²¹ Effective medical education is required by educational programmes to promote sun protection.²² Sun protection-related advices have to be repeated and adapted to the level of awareness of the patient.^{21,23} Non-dermatologist physicians implicated in the care of patients at high risk of skin cancer are in a key position to provide sun protection recommendations. However, it was reported that a very low proportion (7%) of patients with a history of skin cancer declared having been informed on sun protection by a non-dermatologist physician.²⁴ There are little data regarding the knowledge of non-dermatologists on skin cancer prevention and sun protection.

Materials and methods

We performed a multicentre cross-sectional study to evaluate the knowledge of non-dermatologist physicians involved in the care of patients at high risk of skin cancer regarding sun exposure and sun protection in five University hospitals in France (see Fig. 1 for geographical location). In addition, we investigated the role of these physicians in promoting actively sun protection measures.

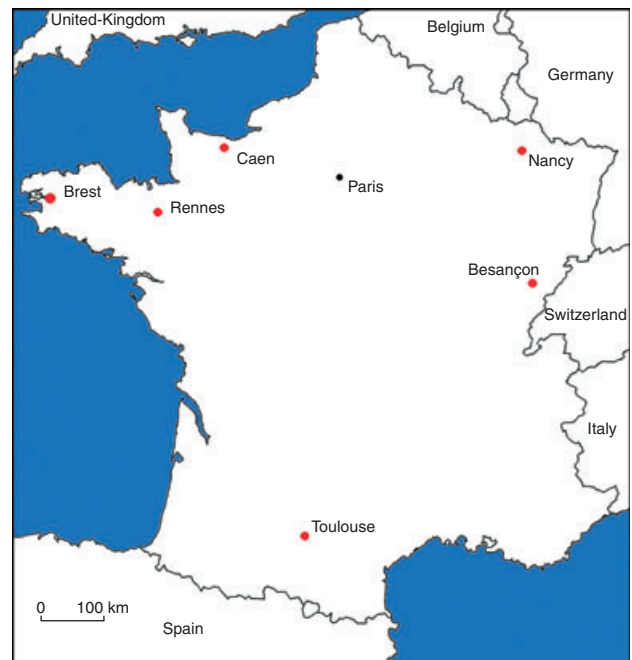


Figure 1 Geographical distribution of the six centres.

Study population selection

We considered specialized physicians involved in the care of patients with a high risk of skin cancer. Patients with a high risk of skin cancer were defined as:

- 1 Patients with a history of skin cancer,
- 2 Patients receiving immunosuppressive therapies or ionizing radiations, patients with HIV infection, allogeneic bone marrow or organ transplant recipients.

Physicians considered for this study include oncologists, haematologists, surgeons performing organ transplantation, surgeons performing skin cancer excision, internal medicine specialists, infectious disease specialists, rheumatologists and gastroenterologists. A total of 395 physicians were identified regarding their medical activity in the five hospitals of the study.

Process

Physicians were e-mailed an anonymous questionnaire. Another copy of the questionnaire was sent to non-responders twice 3 weeks apart. If the subject physician did not respond after three e-mail messages, he was considered as a non-responder.

Questionnaire

The questionnaire consisted of 24 multiple-choice questions elaborated by the study team. The questionnaire explored the following four dimensions: demographic characteristics of the physician, knowledge about skin cancer epidemiology and risk factors, knowledge about sun protection measures and implication of the physician in giving sun protection measures.

Results

Physician characteristics

Of 395 physicians mailed, 152 (38.4%) responded. Mean age of the responders was 44 ± 9 years (from 35 to 53). The mean time elapsed since medical degree was 14 ± 1.5 years (from 1 to 38). Responders were principally of Caucasian phenotype, with an intermediate (III–IV) skin phototype (78.3% – Table 1). The specialty of the responders is displayed in Table 2.

A total of 103 (67.7%) responders considered their patients as immunosuppressed. One hundred and twelve (73.7%) responders considered the risk of skin cancer of their patients as increased.

Knowledge on UV light risk factors, and on the risk factors for skin cancer

Only one responder declared his/her lack of awareness of the fact that UV radiations may contribute to induce skin cancers. Among the responders, the knowledge on skin-cancer risk-factors was correct (≤ 1 error when compared with current French recommendations – Table 3). A proportion of 65.7% of the responders declared having been informed about UV-induced risks and skin-cancer risk-factors during their medical training, 36.2% by media, 35% during continuous medical education session, 30% by a

Table 1 Phototype of the responders

Phototype	% (n = 152)
I–II	19.7
III–IV	78.3
V–VI	2
Hair colour	
Blond/Red	19
Brown/Dark	81
Eye colour	
Fair	35.5
Dark	64.5

Table 2 Medical specialty of the responders

Specialty	% (n = 152)
General surgery	2
Orthopaedic surgery	2
Oto-rhino-laryngological surgery	11
Maxillo facial surgery or aesthetic surgery	12.5
Cardiothoracic surgery	3
Visceral surgery	6
Internal medicine	5
Oncology or haematology or radiotherapy	13
Paediatrics	8.5
Infectiology	7
Rheumatology	6
Organ transplantation	9
Nephrology	15

dermatologist, 12% by their family or a relative and 7% by a non-dermatologist physician.

Knowledge on sun protection

A proportion of 69.7% of the responders declared being informed on the current French guidelines on sun protection, and most of them had a correct knowledge of these guidelines (Table 4). Several errors persisted (tanning beds – 3.2%, progressive exposure to the sun – 42.7%).

Table 3 Knowledge about the role of UV light and about risk factors for skin cancer

What do you think about the global effects of the UV on the skin? n = 152	
‘Good’	18%
‘Bad’	75.4%
‘No effects’	1%
‘I don’t Know’	5.6%
Do you think that the UV can play a role in the occurrence of a skin cancer?	
‘Yes’	99%
‘No’	1%
‘I don’t Know’	0%
Do you think that UV can play a role in Skin ageing?	
‘Yes’	98.6%
‘No’	1.4%
‘I don’t Know’	0%
Do you think that a progressive exposition to UV can reduce skin cancer risk?	
‘Yes’	42.9%
‘No’	38.6%
‘I don’t Know’	18.5%
Do you think that having a fair skin is a skin cancer risk factor?	
‘Yes’	97.1%
‘No’	0%
‘I don’t Know’	2.9%
Do you think that familial history of skin cancer is a skin cancer risk factor?	
‘Yes’	63%
‘No’	16%
‘I don’t Know’	21%
Do you think that personal history of skin cancer is a skin cancer risk factor?	
‘Yes’	91.3%
‘No’	2.9%
‘I don’t Know’	5.8%
Do you think that immune suppression is a skin cancer risk factor?	
‘Yes’	90.6%
‘No’	2.9%
‘I don’t Know’	6.5%
Do you think that several therapeutic can increase skin cancer risk?	
‘Yes’	89%
‘No’	1%
‘I don’t Know’	10%

Table 4 Present French protection guidelines: Knowledge and practices among non-dermatologist physicians

	Considered to be protective, n = 152 (%)	Practised for self protection, n = 152 (%)	Recommended to patients, n = 152 (%)
Shading when in the sun	73.9	63.8	75
Avoiding outdoor activities during hottest midday hours	88.4	50	78
Wearing covering clothes	94.2	61	89.6
Wearing a hat	87	48.6	63.8
Using sun screens	96.4	87.7	96.9
Progressive exposure to the sun	47.1	42.8	35.4
Using tanning Bed	3.6	0	0
Using self tanning products	0	1	1
Getting wet	0	0	0
Nothing	0	2.2	0

Measures the responders applied to themselves

About one half (58%) of the responders avoided outdoor activities in the hottest midday hours, and declared they wear covering clothes (55.2%). The most popular sun protective measure was the use of sun screens (79.6%).

Implication of the physicians in patient education regarding sun protection

Among the 152 responders, 73.7% considered that their patients were at increased risk of skin cancer (melanoma or non-melanoma skin-cancer). More than one-fourth of the physician (27.6%) declared that they were unable to provide recommendations, regarding sun protection for patients.

When the physicians declared providing sun protection advices (72.4%) their recommendations were as follows: shading when in the sun (75%), avoiding outdoor activities in the hottest midday hours (78%), wearing covering clothes (89.6%), using sunscreens (96.9%) and progressively increase sun-exposure (35.4%).

Among the 27.6% of responders who declared not to provide sun protection advices; only 16.7% always recommended to consult a dermatologist for total body examination, 31% often, 33.3% sometimes and 19% never or rarely. A total of 85 (55.9%) responders were interested in receiving continuous medical education on sun protection measures and skin cancer prevention.

Discussion

This study reports a correct knowledge on skin cancer risk factors and sun protection measures among non-dermatologists. The majority of responders knew that UV light can induce skin cancers. When they were able to do it, the responders provided adapted sun protection advices. However, one quarter of the responders declared not being able to provide sun protection advices to their patients. In this case, only 16% of the physicians always referred to a dermatologist.

The most popular sun protection measure among the responders of this study was the use of sunscreens (79.6%), and this was also the most popular recommendation given to patients (96.9%).

These results are consistent with the previous reports.²⁵ In a French study on Web-based resources for sun protection information, it appears that the protective effect of sunscreen is overestimated on websites, with a clear conflict of interest with sunscreen manufacturers.²⁶ The overestimation of the protective effect of sunscreens in mass-media may explain why this was the most recommended measure in this study. Indeed, it is well recognized that sunscreens may not be the most efficient measure, and should not be used as the sole agent for effective skin cancer prevention.^{13,27,28} The level of SPF stated on sunscreen products is usually not achieved during routine clinical use, mainly because the products are applied inadequately in small quantities and infrequently.^{29,30} The use of sunscreens during sun bathing tends to increase the duration of sun exposure.³¹ Moreover, the use of a sunscreen may be limited by high cost and cosmetic acceptability.

In this study, the majority of responders provided sun protection advices to their patients, but 27% of the responders declared not being able to give sun protection advices regarding their professional activity. More than 25% of physicians considered that their patients were not at higher risk of skin cancer. One potential limitation of the study is the use of a self-administered questionnaire. We cannot exclude that our results may have been influenced by a socially-expected response bias. Moreover, one can not exclude that responders had a higher likelihood of being aware of sun protection measures and skin cancer risk factors. Therefore, the proportion of physicians providing adequate sun protection recommendations may have been overestimated. Open-labelled questions may have reduced the number of risk factors listed. In this study, the response rate was 34.9%, and must be considered as a potential bias in data collection. The implication of this study for future preventive actions is to include non-dermatologists in skin cancer prevention campaign in patients who are at higher risk of skin cancer. In addition, standard documentations concerning skin cancer prevention measures may be useful to help non-dermatologists to provide adequate recommendations for skin cancer prevention. Risk-factors of skin cancer and efficient protective measures should be taught in Continuing Medical

Education sessions. The interest of a referral to a dermatologist of patients at higher risk of skin cancer should be underlined.

As a conclusion, whether a majority of the responders had a correct knowledge of UV-induced skin cancer risk factor and sun protection measures, several errors persisted. A high proportion of the responders declared not being able to give sun protection advices regarding their daily activity. Skin cancer being rising, sun protection is a major public health management issue. A large scale continuing medical education on sun protection should be performed. This study could be extended to general practitioners, who are likely to give repeated and adapted advices.

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