normal ≤145 U L^{-1}) and mild scalp hair loss were also noted. All abovementioned abnormalities are known adverse effects of trametinib.

The presence of a GCMN can have a dramatic effect on a patient's life, with associated higher risk of neurological complications, malignancy, cosmetic effect and more.[1]

As already mentioned, GCMN result from postzygotic activating mutations in the MAPK pathway, interfering with the normal proliferation, differentiation and migration of melanoblasts and melanocytes.[2–4] The possibility of using MEK inhibitor treatment in selected GCMN cases has been suggested previously,[6] but to our knowledge, only one patient with GCMN (due to a *AKAP9–BRAF* fusion mutation) was treated with a MEK inhibitor, with encouraging results.[7] Our patient presented with a novel *BRAF* mutation (*CUX1–BRAF*), which has not been reported previously in GCMN. Previous data imply a connection of this mutation to malignancy development,[8] possibly via loss of the regulatory domain of *BRAF*. Hence, these alterations might be sensitive to MEK inhibition. Initiation of trametinib treatment in our patient brought a rapid improvement of pain and pruritus, as well as gradual resolution of objective findings, such as oedema and pigmentation of the naevus. Our findings show that patients with *BRAF*-mutated GCMN can benefit from MEK inhibitor treatment. Data are available only on request due to privacy/ethical restrictions. Further investigations regarding the long-term effect of this treatment, as well as its effect on the risk of melanoma development in GCMN, are warranted.

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Consensus on the clinical management of chronic radiation dermatitis and radiation fibrosis: a Delphi survey

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Dear Editor, Chronic radiation dermatitis and fibrosis (CRDF) has been defined as skin changes that develop more than 90 days after the cessation of radiation therapy. It encompasses dyspigmentation, epidermal thinning, dermal atrophy and telangiectasias.[1] As no consensus on standard of care exists, we created an international, multidisciplinary, consensus-based approach for the terminology, risk factors, treatment and management of CRDF.

A multidisciplinary panel of 27 providers (25 physicians and two nurse practitioners) participated in the Delphi-method survey, which consisted of two independent rounds of questionnaires followed by a consensus meeting between panellists. Of the 25 physicians, 19 were dermatologists and six were oncologists, two of whom were radiation oncologists. Strong consensus was achieved once ≥70% of respondents strongly agreed or agreed with a statement. Moderate consensus was achieved if 50–69% of respondents strongly agreed or agreed with a statement. Statements that achieved moderate consensus were reviewed in detail for modification and inclusion in the second Delphi round. Statements that failed to reach consensus (< 50% of participants agreeing or strongly agreeing) were dismissed unless a group member felt further discussion could benefit inclusion in the next round.

The first and second rounds in the Delphi process consisted of 63 and 27 questions or statements, respectively. We achieved strong consensus for 15 statements and moderate consensus for 16 statements. Thirty-two statements failed to reach consensus and were eliminated. This process and the results are summarized in Table 1. Consensus points determined by this collaboration of physicians can be used to aid the decision making of clinicians treating patients with CRDF and are outlined below.

Treatment features increasing the likelihood of CRDF that reached strong consensus include reradiation, initial radiation

Table 1 Topics reaching strong consensus among the panellists

Topic	Statement or topic specified	Percentage consensus	
		Initial survey	Second survey
Treatment of acute radiation dermatitis and fibrosis	Treat acute radiation dermatitis with topical steroids	93%	NA
Factors increasing the likelihood of CRDF	Anatomical location	86%	NA
	Radiation dose	89%	NA
	Reirradiation	96%	NA
	Radiation volume	86%	NA
	Underlying connective tissue diseases	61%	70%
	History of smoking	68%	90%
Clinical presentation and morphologies included	Telangiectasias and vascular changes	96%	NA
	Skin fibrosis and induration	100%	NA
	Dermal atrophy	92%	NA
	Skin contractures	77%	NA
	Epidermal atrophy	77%	NA
	Hyperpigmentation	96%	NA
	Hypopigmentation	77%	NA
Prophylactic treatment of CRDF	Sunscreen after radiation to protect the skin against ultraviolet-induced radiation changes		85%
Laser therapies	Inclusion of laser therapy in the management of CRDF	NA	96%
	Vascular lasers for telangiectasias and vascular changes	64%	77%
†Based on participants with expertise in laser therapy	†Fractional ablative laser for fibrosis and induration	NA	75%
	†Q-switched laser for hyperpigmentation	NA	100%
	†Fractional ablative laser for skin contractures	NA	90%
First-line treatment	Laser therapy for telangiectasias and vascular changes	NA	92%
Other	Significance of interdisciplinary discussions in patient management	93%	NA
	Forewarning patients with acute radiation dermatitis about the risk of CRDF	79%	NA
	CRDF having negative impact on quality of life	100%	NA

CRDF, chronic radiation dermatitis and fibrosis; NA, not applicable.

dose and radiation volume. Furthermore, the risk of developing toxicity positively correlates with radiation dose.[2] Patient features increasing the likelihood of CRDF that reached strong consensus include anatomical location, underlying connective tissue diseases and a history of smoking. In the experience of the panellists, the head/neck and breast/chest were the anatomical sites associated with the greatest likelihood of CRDF. Smoking exacerbates CRDF via several mechanisms including impaired oxygenation and elevated carboxyhaemoglobin levels.[3]

Most panellists agreed that CRDF begins 90 days after the cessation of radiation therapy and encompasses various morphologies ranging from dermal atrophy to vascular changes. Some panellists expressed frustration with the current all-encompassing 'chronic radiation dermatitis' terminology and recommended the use of new terminology such as chronic radiotherapy changes of 'specific morphology', for example telangiectatic type. Although this nomenclature reached moderate consensus, there was concern that it would be confused with nonionizing radiation. Therefore, the modifier 'radiotherapy' in place of 'radiation' was recommended. Implementation of a more specific terminology would aid in better understanding by patients and physicians who are not exposed to CRDF in their everyday practice.

Although the panellists did not reach consensus concerning the increased likelihood of CRDF following excessive ultraviolet exposure after radiation, strong consensus was achieved concerning recommended sunscreen after radiotherapy to protect the skin against ultraviolet-induced radiation changes.

Moderate consensus was achieved concerning the use of topical and/or intralesional corticosteroids (61%) and oral pentoxifylline (57%) in the management of CRDF. Fifty-eight per cent of panellists also found physical therapy and a range of motion exercises to be helpful in the setting of contractures, fibrosis, epidermal atrophy and dermal atrophy. Combination therapy consisting of oral pentoxifylline, oral vitamin E and physical therapy achieved moderate consensus, with 54% of panellists supporting this first-line approach for contractures, fibrosis, epidermal atrophy and dermal atrophy.

There was strong consensus (96%) regarding the inclusion of laser therapy in the management of CRDF. For vascular changes, 92% of all panellists felt that a vascular laser such as 595-nm pulsed-dye laser was an appropriate first-line treatment. There was also strong consensus concerning the use of fractional ablative laser therapy for skin contractures (90%) and fibrosis or induration (75%).

Given that the care of patients experiencing CRDF may be spread across different centres and specialties, the panel recognized the value of interdisciplinary input and the importance of initiating discussions. The panellists are unanimous in their view that CRDF significantly impacts patient quality of life.[4] In their experience, CRDF has impacted patients' self-confidence and their ability to undergo and maintain breast implants, and served as a painful reminder of cancer history. Poor cosmesis, pain, recurrent wounds and limited range of motion resulting from CRDF further impact patient quality of life.[5] The panellists felt that any patient receiving a significant dose of radiation to the skin should discuss the possibility of developing CRDF. Thus, guidelines and best practices for the diagnosis, management and treatment of CRDF are useful, particularly in the context of multidisciplinary cancer care.

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Supporting Information

Additional Supporting Information may be found in the online version of this article at the publisher's website:

Appendix S1 Full list of affiliations.

Appendix S2 Conflicts of interest.

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