Inflammation may also contribute to the PPE in EGFRi leading to postinflammatory hyperpigmentation, particularly given the high frequency of face and neck involvement in all patients. However, in our series, all patients were affected with this new EDP-like eruption in areas not typically affected by PPE (e.g. tongue and axillae). No patients were receiving medications associated with drug-induced EDP, such as omeprazole or ethambutol.[5,6] Only one patient was receiving doxycycline at the time of the eruption, and this drug is less associated with pigmentation than minocycline.

One limitation of our study is that while PPEs are common early on during treatment with EGFRi, only one of our patients had a previous PPE documented. This may be due to the EDP-like reaction presenting later in treatment relative to PPE. PPEs are quite common in patients on EGFRi, so it is also possible that these patients are not representative. Additionally, the patients in this cohort may have had a previously mild or transient PPE that they did not seek prior medical management for, and some had been on prophylactic antibiotics. Another limitation is that only two patients had skin biopsies performed. Lastly, causation cannot be proven with a case series, but we hope this opens the door for future investigation.

Given the visible impact and long-lasting nature of the skin discoloration in our patients, which led to significant morbidity and distress, and lack of successful topical management, we hope that this novel observation will lead to increased recognition, further studies to understand the pathogenesis of this association, and exploration of more effective management strategies which will be critical to enhancing patients' quality of life.

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Active vs. standard sun protection in patients with melanoma stage I or II: a randomized controlled feasibility trial assessing compliance with sun protection and quality of life

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The incidence of melanoma is steadily increasing in Western countries; a key factor is ultraviolet exposure. Sun protection is essential, particularly in patients with diagnosed melanoma. However, data on the psychological implications of sunscreen protection in patients with melanoma are lacking. This project was designed as a randomized controlled feasibility trial to explore the feasibility of the diary method and tube count to assess patient compliance in a monocentric trial, and to observe any recognizable trends regarding anxiety and quality of life (QoL) between the intervention and control group. The endpoints were compliance with sun protection assessed by diary documentation and tube weights, and anxiety level assessed with a questionnaire set, including the Hospital Anxiety and Depression Scale – Depression only (HADS-D; German version), Dermatology Life Quality Index (DLQI) and the five-level EQ5D (EQ5D-5L). Feasibility was the aim of this trial, no formal a priori sample size calculation was conducted and a sample size of about 30 patients was targeted to get robust parameter estimates.[1] Eligible patients had to meet the following criteria: histologically confirmed, completely resected nonocular, nonmucosal melanoma stage I or II; age 18–75 years; participation in the follow-up programme in the first and second year after surgery; and informed consent provided. The trial was approved by the local ethics committee (reference no.: 17-757-101) and registered with the World Health Organization clinical trials database (reference no.: DRKS00014331). It was conducted between April and November 2018 at the Department of Dermatology of the University Hospital Regensburg (UKR). All participating patients received standard-of-care information from the national German guidelines on the use of individual sun protection.[2] In addition, patients in the intervention group were provided with 300 g sunscreen with a sun protection factor of 50+ (six tubes) for the follow-up period (3 months). Participants' sunscreen use was assessed by means of a pseudonymized, calendar-like patient diary enabling the differentiation between multiple uses of

Table 1 Sun protection frequency and quality of life scores

		Intervention group (n = 15)	Control group (n = 15)	P-value
Median (IQR) no. of days with at least one application		44 (24–63)	34 (17–66)	0·486
Median (IQR) total no. of applications		49 (32–73)	42 (21–66)	0·520
Patients with no applications, n (%)		1 (7)	1 (7)	1·00
Median (IQR) total amount of sunscreen used in grams (intervention only)		96 (49–162)	[a,b]	–
Median (IQR) g per application of sunscreen (intervention only)		2·3 (1·6–2·9)	[a,b]	–
Calculation sunscreen application on body surface/cm^2 (mg)[c]		1·2		
QoL scores		Intervention group (n = 15)[b]	Control group (n = 15)[b]	P-value[b]
HADS-A[d]	Baseline	4·99 (3·17–6·80)	6·00 (4·04–7·96)	0·442
	Follow-up	4·85 (3·45–6·25)	4·45 (2·94–5·96)	0·695
	Difference	0·13 (–1·05 to 1·32)	1·55 (0·27–2·83)	–
	P-value	0·815	0·019	
HADS-D[d]	Baseline	3·08 (1·51–4·64)	3·50 (1·82–5·19)	0·708
	Follow-up	3·14 (1·88–4·40)	2·85 (1·49–4·21)	0·754
	Difference	–0·06 (–1·35 to 1·23)	0·65 (–0·74 to 2·04)	–
	P-value	0·924	0·347	
DLQI[d]	Baseline	5·71 (2·57–8·84)	5·85 (2·47–9·23)	0·949
	Follow-up	4·09 (2·31–5·88)	3·35 (1·43–5·28)	0·568
	Difference	1·61 (–0·95 to 4·18)	2·50 (–0·27 to 5·27)	–
	P-value	0·208	0·075	
EQ5D index value[d]	Baseline	0·92 (0·86–0·99)	0·89 (0·82–0·96)	0·496
	Follow-up	0·93 (0·90–0·96)	0·95 (0·92–0·98)	0·295
	Difference	–0·003 (–0·07 to 0·06)	–0·06 (–0·13–0·01)	–
	P-value	0·932	0·087	
EQ5D VAS[d]	Baseline	78·5 (70·3–86·7)	73·8 (64·9–82·6)	0·423
	Follow-up	82·3 (75·8–88·8)	84·3 (77·2–91·3)	0·676
	Difference	–3·7 (–11·5 to 4·1)	–10·5 (–18·9 to –2·1)	–
	P-value	0·335	0·016	

[a]The control group was not actively supplied with sunscreen. [b]Results are presented as estimated marginal means with corresponding 95% confidence intervals adjusted for sex. A P-value < 0·05 was considered statistically significant. [c]Based on Microzensus[5] data for model surface of 9% (equal to the surface of an arm according to the Mosteller formula:[6] body surface in [$m^2 = \sqrt{\text{height} \setminus \text{in} \setminus \text{cm} \times \text{weight} \setminus \text{in} \setminus \text{kg}/3600}$] and the Wallace 'rule of nines', which is a tool used in clinical and emergency medicine to estimate the total body surface affected by a burn.[7] [d]Each quality of life measurement [Hospital Anxiety and Depression Scale (HADS), Dermatology Life Quality Index (DLQI) and EQ5D)] was analysed using a repeated-measures ANOVA, with time as an within-subject factor and the type of treatment as a between-subject factor. HADS-A, Hospital Anxiety and Depression Scale – Anxiety; HADS-D, Hospital Anxiety and Depression Scale – Depression.

sunscreen per day for an observation period of 12 weeks. At study end, the diaries and tubes of sunscreen were returned. The remaining sunscreen was weighed. The questionnaire set was completed before and at follow-up. Continuous data are presented as median [interquartile range (IQR)], and between-group differences were calculated using the Wilcoxon Mann–Whitney test. Categorical variables are presented as absolute values and relative frequencies and were compared using the ^{2} test of independence or the Mantel–Haenszel test. QoL was analysed using a repeated-measures ANOVA and the results are presented as estimated marginal means with corresponding 95% confidence intervals. A P-value < 0·05 was considered statistically significant. All analyses were conducted using SPSS version 25·0.0·2 for Mac (IBM, Armonk, NY, USA) and SAS 9·4 (SAS Institute, Cary, NC, USA), which was also used for proc plan randomization (Centre for Clinical Studies, UKR). Thirty-two of 51 eligible patients consented to participate. Median age was 52 years (IQR 38–61). Seventeen (53%) patients were allocated to the intervention group and 15 (47%) to the control group. Thirty (94%) patient diaries were returned and analysed. Fifteen of 17 sunscreen rations were returned and weighed. Regarding the endpoints, no significant differences were found between the intervention and control group. Mean HADS subscales and the EuroQol visual analogue scale scores and DLQI scores were comparable with those of the reference population.[3,4]

Our patients used a median amount of 2·3 g (IQR 1·6–2·9) of sunscreen, which results in a median application of 1·2 mg cm^{-2} as calculated for an average body surface (Table 1). This is below the 2 mg cm^{-2} sunscreen protection recommended by the national German guidelines.[2,5–7] Previously published data on the quantity of sunscreen use found thicknesses far below 1 mg cm^{-2}.[8] Yet, we believe the use of just a

little sunscreen is preferable to no use at all. Overall, the following valuable lessons have been learned for the design and sample size calculation of subsequent trials. Diary-based documentation and tube count are feasible in the context of a randomized clinical trial to assess compliance with sunscreen protection. To enhance the correct use of sunscreen, an updated version of the diary should contain pictograms to mark the body surface to be covered with cream. Reminding participants of their scheduled second appointment improved their compliance with the study regime. The questionnaires were acceptable to patients, with no missing values or forms, and should be used in subsequent trials.

These lessons will be implemented in future studies to improve our understanding of the psychological causes and effects of sunscreen protection.

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Comparison of registered and published outcomes in randomized trials in dermatology journals: a cross-sectional analysis

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Dear Editor, A potential source of bias in randomized controlled trials (RCTs) is selective outcome reporting bias, where outcomes for reporting are chosen based on the significance of their results.[1] Significance can arise by chance when multiple tests are performed ('data dredging'). To avoid this problem, a main outcome (a 'primary outcome') should be prespecified prior to data collection in a time-stamped, publicly available trial registry. Prospective registration has been a prerequisite for publication among International Committee of Medical Journal Editors member journals since 2005. However, even when trials are registered prospectively, selective outcome bias reporting can occur if the primary outcome reported in the manuscript does not match the prespecified primary outcome in the trial registry.[2]

We assessed primary outcome discrepancies in RCTs published in the top 10 dermatology journals, based on 2017 Clarivate impact factors. Tables of contents for each journal were reviewed by two authors (L.S., A.L.) for full reports of RCTs published between January 2017 and December 2017. Phase 0 or I studies and secondary or pooled analyses were excluded. Full texts were reviewed by at least two authors (L.S., A.L., A.H.), and disagreements were resolved by an additional author (J.T.).

Manuscripts were assessed for trial registration numbers. These were inputted into the World Health Organization International Clinical Trials Registry Platform (ICTRP) to determine prospective trial registration status, which it defined as a 'date of registration prior to the date of first enrolment'. If a trial registration number could not be identified, the trial intervention was searched for on ICTRP.

We compared the prospectively registered primary outcome on the trial registry against the reported primary outcome in the manuscript. As time-stamped modifications to trial registries can be made after study initiation, we used the primary outcome that was registered before study initiation. A major discrepancy in primary outcome was defined using a modified classification[2] of Chan *et al*.:[1] (i) a registered primary outcome was reported as a secondary outcome, (ii) a registered primary outcome was omitted, (iii) an unregistered outcome was introduced as a primary outcome, (iv) a registered secondary outcome was reported as the primary outcome and/or (v) the time of primary outcome assessment differed (excluding extension studies). 'Imprecise reporting' referred to discrepancies not meeting this definition.

The study population included 65 trials from six journals. Four of the journals required prospective trial registration during the study period (*JAMA Dermatology*, *Journal of the American*