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Elise C. Kleyn, Elaine Morsman, Lizelle Griffin, Jashin J. Wu, Peter Cm van de Kerkhof, Wayne Gulliver, Joelle M. van der Walt & Lars Iversen

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EDITORIAL

Review of international psoriasis guidelines for the treatment of psoriasis: recommendations for topical corticosteroid treatments

Background

Chronic plaque psoriasis is a common, currently incurable, immune-mediated skin disease affecting approximately 2-3% of the population worldwide (1). Patients frequently require lifelong management with treatments including intermittent use of topical agents. Topical corticosteroids, widely accepted as a first line topical therapy for mild disease, are also used for recalcitrant lesions in more severe disease to complement systemic therapy and for specific areas such as palms, soles, scalp, flexures, the genital area and face. The strength of corticosteroids is expressed in classes. Confusingly, in the USA and various other countries Class I is used to refer to very potent topical steroids. Dermatology practice in contrast in the United Kingdom and the Netherlands classifies this group as Class IV. The International Psoriasis Council strives for a global optimisation of patient care for psoriasis. In this respect an international appreciation of variance between regions in treatment approaches is important. As psoriasis is a chronic disease, the long-term management counts for daily practice. Can we learn for real clinical practice from different guidelines available? Here we review available international guidelines to ascertain current information and to identify areas which would benefit from greater practical guidance for dermatologists and other clinicians who treat psoriasis.

PubMed database searches were conducted in an iterative manner during December 2015 to retrieve articles written in English which related to guidelines for treatment of psoriasis. Search terms included 'psoriasis guidelines' 'topical treatment guidelines psoriasis' 'international psoriasis guidelines'. Two reviewers independently read each article in full text ($n = 17$ publications), evaluated the relevance of retrieved articles, and recorded the main findings of each study in a table. Key factors recorded for each set of guidelines included: class of topical corticosteroid; duration and frequency of recommended use; maintenance or tapering regimens and side effects of treatment. Seven of seventeen publications, which did not include topical treatments, were excluded from our review.

In the United Kingdom (UK) the National Institute of Health and Clinical Excellence (NICE) guidelines on management of disease are considered to be a comprehensive overview of evidence based information (2). We have therefore chosen to review the 2017 NICE guidance as a means of comparison of international literature on the management of psoriasis with topical corticosteroids.

Appraisal of NICE guidance

The UK guidelines on the management of psoriasis are written by NICE and are available as a full guideline document, which includes methods and evidence used to compile the guidelines, as well as a shorter document that states the established guidance succinctly and clearly (2).

The full guidance established review questions focussing on the clinical effectiveness, safety, tolerability and cost effectiveness of topical corticosteroids for the trunk and limbs and harder to treat areas in order to guide a literature search. Although expert opinion was sought, it is possible that important and relevant studies were missed in the development of this guideline: studies not published in English were not reviewed and it is also stated that grey literature and unpublished resources were not reviewed. Clear exclusion criteria were set *a priori* for topical management of generalised plaque psoriasis of the trunk and limbs and for topical management of generalised plaque psoriasis of high impact or difficult to treat sites. The phrase 'difficult-to-treat sites' encompasses the face, flexures, genital area, scalp, palms and soles. Only randomised controlled trials and systematic reviews were included. The outcomes and clinical evidence of studies were evaluated using an adaptation of the Grading of Recommendations Assessment, Development and Evaluation (GRADE) toolbox (3).

High quality randomised controlled trials comparing a potent corticosteroid to a placebo were not identified in the literature search. However, one low-moderate quality trial was identified, in which Katz et al. (4) reported that intermittent twice daily topical potent corticosteroid (betamethasone dipropionate) was statistically significantly better than placebo for the maintenance of remission for:

- Investigator's assessment (clear/slight) at 24 weeks.
- Time-to-relapse after a maximum follow-up of at 24 weeks.

Use of topical corticosteroids

The NICE guidelines divides management of generalised plaque psoriasis into 3 management categories: trunk and limbs; scalp; and face, flexures and genitals (FFG) (2).

For management of trunk and limb psoriasis, guidance focuses on use of corticosteroids in combination with vitamin D analogues (Table 1). For initial therapy, potent corticosteroid is recommended once daily in combination with a vitamin D analogue used at a separate time of day. Where clearance is not achieved, it is advised that vitamin D analogues are used twice daily and treatment with corticosteroids ceased. It is advised that potent corticosteroids should only be used twice daily once management with vitamin D analogues has failed. Very potent corticosteroids should only be offered for 4 week courses and when other topical treatment strategies have failed (2).

For the management of scalp psoriasis, the NICE guidelines suggest initial management with a potent corticosteroid once a day for a maximum of 4 weeks. Strategies for managing non-clearance include different formulations, topical agents to remove scale and combination with vitamin D analogues only after these strategies have been exhausted (2).

Table 1. International corticosteroid guidelines.

Country	Name of guideline/Link	Directions re: Class of topical corticosteroid Class I: Very potent/superpotent Class II: potent Class III: moderate Class IV: mild	Duration	Frequency	Reduction	Action if poor response	Side effects
New Zealand	DermNet NZ5	Face/thin Skin/Children: mild – moderate potency	2 weeks	OD/BD	4 week breaks gradual reduction in frequency, reduction in potency	DLQI <5: continue ± phototherapy	Local: skin atrophy, telangiectasia, striae, acne, folliculitis
		Trunk/limbs/scalp: moderate – high potency	4 weeks	OD		DLQI >5: modify therapy	Systemic: adrenal suppression, increased ocular pressure, glaucoma, cateracts
		Thick, chronic plaques/palms/soles: very high potency	2-4 weeks (max 50 g/week)				Long term use: decreased efficacy, tachyphylaxis
Norway	Nordic Expert Group Kragballe K, Stahle M. http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3016217/ http://www.ncbi.nlm.nih.gov/pubmed/24549301	Mild plaque psoriasis: 'topical agents'				Change in PASI <50 or change in PASI >50 < 75 & DLQI >5: phototherapy	
Malaysia	Ministry of Health Malaysia, Dermatological Society of Malaysia, Academy of Medicine Malaysia Guideline Development Group: (Chairperson: Eng CS). Review committee (Chairperson: Datuk RB)	Face: mild potency Extremities: Potent if necessary, under occlusion if necessary Trunk: Combine with anthralin/tar Body folds: mild potency Nail folds: intralesional kenacort					Local atrophy, striae, ecchymoses, rosacea-like dermatitis, acne, glaucoma, secondary infection (including fungal), rebound phenomenon Rare: adrenal suppression, Cushing's
UK	National Institute for Health and Clinical Excellence (NICE) Guideline development group. Smith C (Chair). McHugh N	Trunk/Limbs: potent corticosteroid + vitamin D/vitamin D analogue OD	4-8 weeks* *Review after 4 weeks of initiation	OD *Apply corticosteroid and vit D separately, one in morning and one in the evening.	Break of 4 weeks between potent/very potent steroids. Use non-steroid based treatments eg vitamin D/ analogues or coal tar during breaks	No clearance: vitamin D/ vitamin D analogue BD 8-12 weeks Still no clearance: potent corticosteroid BD for up to 4/52 or coal tar preparation od to bd. If bd potent corticosteroids cannot be used or a once-daily preparation would improve adherence: offer combined calcipotriol monohydrate and betamethasone dipropionate od for 4/52	Do not use continuously at any site: 1. Very potent corticosteroid for longer than 4 weeks. 2. Potent corticosteroids for longer than 8 weeks. Do not use potent or very potent corticosteroids on face, flexures or genitals. Potent/very potent: irreversible atrophy or striae, unstable psoriasis, systemic when continuously applied to >10% body
		Scalp: potent	4 weeks* *Review after 4 weeks of initiation	OD		No clearance: change formulation and/or topical agent to remove scale (e.g. salicylic acid) before applying potent corticosteroid for 4 weeks Still no clearance: combined calcipotriol monohydrate/ betamethasone dipropionate OD 4 weeks of vitamin D/vitamin D analogue OD 8 weeks (in	

(*continued*)

Table 1. Continued.

Country	Name of guideline/Link	Directions re: Class of topical corticosteroid Class I: Very potent/superpotent Class II: potent Class III: moderate Class IV: mild	Duration	Frequency	Reduction	Action if poor response	Side effects
						those who cannot use steroids and with mild/ moderate psoriasis. Still no clearance: very potent BD 2 weeks or coal tar BD	
		Face/flexures/genitals: mild – moderate potency	1-2 weeks/ month	OD-BD		No clearance : Calcineurin inhibitor (alone) BD 4 weeks	
The Netherlands	Dutch Society of Dermatology and Venereology Zweegers J, Spuls Ph.	Mild-severe chronic plaque psoriasis Class depends on the area of skin affected		OD	Taper: OD for 3 weeks, once/ 2 days for 1 week, once/3 days for one week, stop.		Skin atrophy, telangiectasia, secondary infection, roseacea, perioral dermatitis
Scotland	Scottish Intercollegiate Guidelines Network (SIGN) Guideline Development Group. Burden D (Chair). Wilson H.	Scalp: potent + vitamin D analogue Nails: steroid ± salicylic acid/ calcipotriol/tazarotene Face/flexures: moderate potency CPP: short term intermittend use of potent steroid plus calcipotriol Don't recommend potent regularly over prolonged periods				Refractory: Superpotent	Adverse effects: Striae, skin fragility, easy bruising, rebound/persistent/unstable psoriasis Systemic adverse effects: HPA axis suppression, generalised pustular psoriasis
Canada	Canadian Dermatology Association. Steering committee (Papp KA). Expert panel (Adams SP).	Mild – topical corticosteroids as firstline (check refs – do they specify strength of steroids) Mild plaque psoriasis of trunk/limbs/neck: topical corticosteroids or combination calcipotriol/betamethasone diproprionate used first line Moderate-severe plaque psoriasis of trunk/limbs/neck: as for mild but + systemic therapy Moderate facial/flexural/genital psoriasis: moderate potency corticosteroid but long term use avoided Moderate-severe flexural psoriasis: 0.1% betamethosone Moderate facial/genital psoriasis: mild-moderate potency steroids Severe facial/flexural genital psoriasis: 'stronger corticosteroids' Nails: Mild: topical betamethasone diproprionate Severe: intralesional Mild -moderate Scalp psoriasis: moderate – superpotent corticosteroids Palmarplantar: 'Little evidence' Paediatric patients: least potent	Occasional or intermittent Occasional or intermittent Severe: Repeat once after 2 months			Tazarotene	Local cutaneous: atrophy, contact dermatitis, hypertrichosis, folliculits, hypopigmentation, perioral dermatitis, striae, telangiectasia, traumatic purpura Repeated use can lead to tachyphylaxis Other: HPA axis supression Nails: skin atrophy, acroatrophy, striae, telangiectasias Intralesional: atrophy and depigmentation

(*continued*)

Table 1. Continued.

Country	Name of guideline/Link	Directions re: Class of topical corticosteroid Class I: Very potent/superpotent Class II: potent Class III: moderate Class IV: mild	Duration	Frequency	Reduction	Action if poor response	Side effects
					Taper strength and decrease with improvement		
USA	American Academy of Dermatology Menter A (Chair). Bhushan R. https://www.aad.org/education/clinical-guidelines	Face/intertriginous areas/thin skin/infants: lower potency corticosteroids for limited periods Other areas: mid-high potency (Stoughton-Cornell classification) as initial therapy Thick/chronic plaques: highest potency	Limited periods Optimal end point unknown 2-4 weeks (max 50 g/week)	OD-BD	Not well established – Gradual reduction in usage recommended following clinical response		Tachyphylaxis Local cutaneous NB seen more commonly in face and intertriginous areas: skin atrophy, telangiectasia, striae distensiae, acne, folliculitis, purpura May exacerbate co-existant dermatoses: roseacea, perioral dermatitis, tinea May cause contact dermatitis Systemic (infrequent): Cushing's, osteonecrosis of the femoral head, cataracts, glaucoma, HPA axis suppression Children systemic (infrequent): Growth retardation
Germany Severe plaque Psoriasis:	Deutsche Dermatologische Gesellschaft (DDG), Berufsverband Deutscher Dermatologen (BVDD) Nast A, Rzany B. systemic + topical therapy	Mild-moderate plaque psoriasis: Class III or Class IV topical corticosteroid Class IV has greater efficacy but remember increased risk of side effects when prescribing as initial therapy Atrophy, superimposed infection (bacterial, viral), folliculitis, perioral dermatitis, rosacea, steroid acne, burning, itching, redness, blistering, hypertrichosis, loss of pigmentation, striations, wound healing disorders, potential for systemic absorption & adrenal suppression	Class III: 2-4 weeks Class IV: 2-3 weeks 'Do not exceed maximum	recommended duration'	OD-BD	Once improvement occurs extend treatment intervals and transition to a lower concentration topical corticosteroid e.g to taper betamethassone diproprionate: OD 3 weeks, once/2 days for 1 week, once/3 days for one week, stop.	Modify if: change in PASI <50 or change in PASI >50 < 75 & DLQI >5 Continue if: change in PASI >50 < 75 & DLQI < 5 or change in PASI >75
South Africa	Working group of the dermatological society of South Africa Raboobee N (Chair), Whitaker D. http://www.samj.org.za/index.php/samj/article/download/4015/2774	Mild-moderate psoriasis: topical corticosteroids + systemic therapies or other topical therapies Class adjustment for specific skin area	4 weeks	OD-BD	Gradual reduction following onset of effect		Skin atrophy, telangiectasia, skin infections, rosacea, peri-oral dermatitis, hypertrichosis, striae

Management of FFG psoriasis focuses on the use of mild to moderate potency corticosteroids for durations of 2 weeks only. The guidelines advise that potent and very potent corticosteroids should not be used on the face, flexures or genitals due to the high risk of steroid atrophy (2).

Side effects

There is sparse evidence for side effects and frequency of side effects occurring. Katz et al. (4) discuss withdrawal and skin atrophy at 24 weeks. The guidelines advise that very potent corticosteroids are not used on any one site for more than 4 weeks at a time with a 4 week break in between courses. Potent corticosteroids on the other hand, are to be used for courses of 8 weeks. It is advised that very potent corticosteroids are not used on children less than 1 year of age. Finally, it is recommended that adults and children should be reviewed annually for skin atrophy and 'other side effects' if a combination or monotherapy corticosteroid is regularly used (2). Evidence with regard to specific side effects was not reviewed and the guideline details risks of irreversible atrophy or striae, unstable psoriasis and systemic side effects when topical corticosteroids are continuously applied to >10% body surface area. (2)

Other guidelines

The Netherlands

The 2011 Dutch S-3 guidelines on the treatment of psoriasis are an update of the previous 2003 version, authored by a working group of dermatologists and patient representatives. (5) Formulation of the guidelines included equal weighting to academic and peripheral dermatology centres. An online consultation document invited comments from dermatologists before the guidelines were finalised. The intended purpose of providing dermatologists and general practitioners with guidance on treating psoriasis in everyday practice is clearly stated. The patient perspective regarding treatment is emphasised and is the subject of a separate chapter.

The document is predominantly based on the European S-3 guidelines (6). However, certain chapters, for example, face and flexural psoriasis and psoriasis in children, were the result of systematic reviews by the Dutch working group. The literature review included English, Dutch, French and German studies. Case reports and abstracts were excluded, except in psoriasis affecting children. The grade and level of evidence for recommendations is stated and is similar to the NICE guidelines (2). The level of evidence accompanies conclusions of the report and references are provided.

In contrast to the NICE guidance (2), the Dutch guidance provides less detail regarding steroid potency. The scale appears to be based on the World Health Organisation (WHO) ATC code D07 Classification for topical steroids, which is also used in the United Kingdom and Germany, however, slightly different nomenclature is used. Potent topical steroids, such as betamethasone, are called 'high potent' and very potent, such as clobetasolpropionate, is referred to as 'very high potency'.

Dutch guidelines state that 46-56% of patients achieve remission or significant improvement with twice daily application of betamethasone and 68-89% with clobetasolpropionate (level 1 evidence) (5). The length of treatment is not specified as in the NICE guidelines (2), but dose tapering is recommended once psoriasis has improved and an example is given for a reducing regime of topical betamethasone. This advises once daily application for 3 weeks, alternative day application for 1 week, then once every 3 days for a further week before discontinuing therapy. Tachyphylaxis is not mentioned in the Dutch guidelines. Combination therapy with systemics, phototherapy or calcipotriol is recommended to reduce the steroid dose.

A similar approach to NICE is taken regarding local adverse effects of atrophy and telangiectasia, by reducing the potency of steroid, duration of treatment and considering the affected site. It is recommended that high potency topical corticosteroids should be avoided in atrophy-prone sites such as the genitalia, flexures, face and neck. Systemic adverse effects are not covered, in keeping with both the NICE (2) and German guidelines (7). The risk of intrauterine growth restriction during pregnancy and risk to the infant during breastfeeding are stated.

Nordic

Specific Nordic guidelines are not currently available literature (8). However, Nordic recommendations for treatment goals, quality of life evaluation impact and assessment/management of co-morbidities have been published (9). No detail is specified with regard to recommendations for topical corticosteroid treatment; instead topical agents in general are recommended for mild plaque psoriasis.

Germany

The German evidence-based guidelines by the Deutsche Dermatologische Gesellschaft and the Berufsverband Deutscher Dermatologen (BVDD) were published in 2007 (10) and updated in 2012 (7). The scope of the guidelines is to provide dermatologists in public healthcare and private practice with a decision making aid for treatment of mild to severe psoriasis. The guidance was formulated following a systematic review of the literature; both the grade (A1 'meta-analysis' to D 'expert opinion') and level of evidence (1-4) are clearly stated. A grading tool similar to both the NICE (2) and Dutch guidelines (5) was used. A panel of dermatology experts approved the guidelines prior to publication.

It is stated that the guidelines are not prescriptive, but are intended to facilitate decision making on a case-by-case basis (7). Classes of treatment are clearly separated depending on the severity of disease. Topical treatment is generally recommended for mild psoriasis (body surface area <10%, are evaluated in stand alone sub-sections, with discussion of the evidence base for treatment. Topical corticosteroids are highly recommended as practical treatments for mild to moderate psoriasis given that 'good' to 'very good' efficacy is provided. Topical corticosteroids were reviewed in 100 studies, of which 20 met the set criteria. The same data is presented as the Dutch guidelines (5) regarding efficacy of potent (46-56%) and very potent (68-89%) topical steroids applied twice daily. In contrast with the NICE guidance (2) there is no timescale provided for length of treatment, although it is stated that a clinical effect is expected within 1-2 weeks of commencing treatment (7).

Vitamin D analogues are a focus of the NICE guidelines and are also recommended as combination therapy with corticosteroids in mild to moderate psoriasis in Germany. Salicylic acid is also recommended in combination with topical steroids.

It is advised that the potency of steroid should be considered depending on the site of treatment, but specific details are not given. Local side effects of skin atrophy and telangiectasia in relation to prolonged therapy and use on sensitive sites are stated (7). Other local adverse effects are mentioned in brief, including

perioral dermatitis, striae, hypertrichosis and infections. In agreement with the NICE guidelines (2), systemic adverse effects are not included (7).

Scotland

The Scottish Intercollegiate Guidelines Network (SIGN) is very similar to NICE guidance (2), however, there is additional advice on nail psoriasis which the NICE guidance does not cover in depth (11).

South Africa

The available guidelines are not detailed and advise class adjustment for specific skin areas (Table 1) (12).

Malaysia

The purpose of the Malaysian guidelines are for recommendations for clinical practice and sections that focus on management in primary care and general management of psoriasis are included. (13) The guidelines proposes similar management to the NICE guidance, however, in addition advises intralesional kenocort for affected nail folds and management of lesions on extremities under occlusion. Guidance on the duration is also similar to the NICE. Clear advice with flowcharts and tabulated information is given.

The Malaysian guidelines reference three systematic reviews for evidence rather than completing own review of the literature, interestingly, the RCT (Katz et al. 1991 (4)) that supported the NICE guidance is not referenced in either systematic review. Management of children is not included. The current guidelines do not mention tachyphylaxis despite reference being made to 'rebound phenomenon' in the 1996 guidelines.

United States of America

The United States (US) guidelines were written by a committee of 12 dermatologists (as well as one American Academy of Dermatology staff Ph.D) and were evidence-based after extensive literature review (14). These guidelines discuss all topical therapies, use for different body areas, and both topical and systemic side effects. There is mention that 'the continuous use of class I topical corticosteroids should normally be limited to no more than twice daily for up to 2 to 4 weeks and no more than 50 g/wk,' but there is no guidance for duration of class II-VII topical corticosteroids. (14) There was no discussion of gaps in guidelines or evidence.

Canada

The Canadian guidelines were written by a committee of 16 dermatologists and are based on an extensive literature review as well as clinical judgment (15). It is stated that 2 databases were searched for papers from 1980 or later and attempts were made to source unpublished literature. Clear exclusion criteria were established and grades of evidence were applied to each recommendation according to the quality of the literature, however, the authors reserved the right to apply a higher grade to a recommendation based on their own clinical judgement.

The Canadian guidelines divide management into mild and mild to moderate psoriasis as defined in the Canadian Guidelines. The definition of the different degrees of psoriasis is not consistent. In further chapters special populations (including children, pregnant and breastfeeding patients, elderly patients and individuals with Hepatits B, hepatitis C, HIV) and management of FFG psoriasis, nail psoriasis, palmoplantar psoriasis and scalp psoriasis have been described. The guidelines also have chapters detailing the social and psychological aspects of psoriasis and the future of psoriasis treatment. Similarly, the guidelines make use of related literature as the NICE guidelines (2) and acknowledge the existence of few RCTs to support the guidance.

Recommendations for mild psoriasis suggest a topical steroid as first line (16,17). They fail to advise on potency, duration and breaks. For mild psoriasis they acknowledge that combination therapy can be more efficacious and reduce side effects from the use of topical corticosteroids alone (18).

For moderate to severe psoriasis the guideline acknowledges that the use of topical steroids will most likely require combination with systemic or phototherapy to achieve treatment goals with the exception of betamethasone dipropionate/calcipotriol combination ointment (19). The bulk of the chapter focuses on systemic and phototherapy treatments.

Furthermore, the guidelines discuss the risk of long term effects of treatment in children (17). They advise education for parents regarding the use of corticosteroids in psoriasis to address fears regarding the long term effects on health. They advise topical therapy is often sufficient to result in adequate control of disease and suggest starting with the least potent corticosteroid that is effective and tapering the strength/dose as lesions improve (20,21).

During pregnancy the guidelines state that roughly 3% of topical corticosteroid is absorbed (22), hence, safety varies depending upon the agent used, the vehicle and the body surface area involved (23). Despite mentioning the potential variation in risk they do not provide specific recommendations with respect to these variables. They report that there are population studies that found no increased risk of foetal abnormalities but suggest that their use is limited to mild, localised disease (24,25). The guidelines do not give advice on duration of use and recommended body surface area application in pregnancy. In breastfeeding individuals, the guidelines recommend the use of topical corticosteroids but no advice is given on potency or duration.

In the elderly population the guideline makes reference to the fact that betamethasone dipropionate/calciptriol combination ointment is well tolerated regardless of age group when used once per day (26). The guidelines advise that topical corticosteroids can be considered safe in those with hepatitis B, hepatitis C and HIV, however, that due to more significant disease in HIV, topical agents have limited success.

For the management of FFG psoriasis the guidance suggests mild-moderate topical corticosteroids can be used occasionally and intermittently (27). They advise that in moderate to severe FFG disease stronger corticosteroids can be used for acute flares or non-responsive disease. They do not specify specific durations of use or breaks. The guidance advises against the use of betamethasone dipropionate/calciptriol combination ointment due to the increased risk of side effects with potent corticosteroids in intertriginous areas.

The guidelines state that topical steroids are only marginally effective as a monotherapy in nail psoriasis (28,29). They recommend combination with salicylic acid but acknowledge that this combination is no more effective than calcipotriol alone (30). They discuss application under occlusive dressings and make reference to evidence that resolution of onycholysis may occur within a shorter time period (29,31). The Canadian guidelines describe topical corticosteroid agents as the mainstay of

management of scalp psoriasis and suggest a 6 month course of clobetasol shampoo may be safe and effective. In palmoplantar psoriasis they advise topical corticosteroids are most effective in combination with other topical agents.

Side effects are discussed in the chapters for mild psoriasis, moderate to severe psoriasis and nail psoriasis. They report local cutaneous side effects including atrophy, contact dermatitis, hypertrichosis, folliculits, hypopigmentation, perioral dermatitis, striae, telangiectasia, traumatic purpura as risks as a result of repeated use (32–35). They also mention the risk of tachyphylaxis (36) and systemic HPA axis suppression (4).

With respect to treatment of nail psoriasis, skin atrophy, acroatrophy, striae, telangiectasias (37–39) are included, however, it is acknowledged that the occurrence of these side effects is not supported by clinical studies (40). It is reported that there is no evidence that occlusion potentiates these side effects in nails, however, the lack of safety and efficacy data of this treatment modality is acknowledged.

New Zealand

New Zealand guidelines gives the clearest guidance on duration of and breaks from treatment and is very similar to NICE guidance (41). The advice is also similar for management of trunk and limb psoriasis, scalp and FFG. New Zealand also gives additional detail about management of palmoplantar psoriasis with steroids. The similarity to the Nice guidelines is explained by the fact that the New Zealand guidelines are a summary of the Australian consensus treatment goals and guidelines published by the British Association of Dermatologists, American Academy of Dermatology and NICE. The document is not a systematic review of the literature; the references provided are from international guidelines and one meta-analysis of randomised controlled trials.

Management is divided into different treatment modalities and reference to the management of different areas of the body is made within these categories (41). Topical therapy is recommended for mild to moderate psoriasis (PASI $<$10, DLQI $<$10), in keeping with other guidance. Specific information is given regarding the most effective use of each class of topical agent (e.g. salicylic acid as a keratolytic, dithranol as 'short contact therapy'). There is detailed guidance regarding topical corticosteroids, including duration and strength of formulation for different areas of the body. It is advised that sensitive areas such as the face, flexures and infants should be treated with mild to moderate topical corticosteroids once to twice daily for 2 weeks only. A calcineurin inhibitor is advised as alternative therapy if this regime is unsuccessful. Up to 4 weeks of once-daily treatment with moderate to potent topical steroids is recommended for other sites. Combination therapy is advised for poor responders. No evidence is provided regarding the frequency of daily dosing, which features in other guidance. Thicker plaques and palmoplantar psoriasis may be treated with very potent steroids for 2–4 weeks, but a recommended limit of 50 g/week is made.

Advice is given to avoid tachyphylaxis following long-term steroid use by gradually reducing the potency (41). Local side effects are given in brief for all topical treatments, but greater detail is provided for corticosteroids. No references are included. Potential systemic side effects are also unreferenced, but listed as increased intraocular pressure, glaucoma, and cataracts for topical corticosteroid use.

Discussion

Recommendations from clinical guidelines may improve standardisation of good quality care delivered to patients, however, successfully improving care is complex and relies on numerous factors including physician awareness and use of guidelines, patient beliefs as well as adherence to advice and concerns regarding treatment side effects (42). Importantly, the guidelines should reflect the real world situation to be most useful.

Review of the available international guidelines for use of topical corticosteroids suggest that there is broad consensus regarding choice of steroid potency for particular body sites and in the short-term, when outlined, the duration of steroid use (NICE (2), the Netherlands (5), Scotland (11), Malaysia (13) and New Zealand (41). However, to enable clinical interpretation and ease of interpretation of guidelines to clinical practice, it would be desirable if there were consistency internationally when reporting topical steroid potency and classification of the class of drug.

Furthermore, our review demonstrates that there are gaps in evidence for the recommended treatment duration in the long-term as well as utility of tapering of topical corticosteroids and breaks in treatment. Omission of the information demonstrates the lack of evidence available and also the challenges posed with gaining consensus across a wide spectrum of clinical practice. Given that in clinical practice, it is quite feasible that patients will use topical corticosteroids intermittently over decades, these are important questions to be addressed. Furthermore, it is not helpful if the long term use of topical corticosteroids is not clearly documented or acknowledged in guidelines.

Side effects of topical corticosteroids is a commonly discussed theme between physician and patient. Patients frequently are most concerned about the potential side effects associated with 'steroid use'. In general, the types of local side effects are detailed in the international guidelines, however, the frequency of occurrence is not outlined. Of note, NICE guidelines (2) suggest annual review for patients who regularly use topical corticosteroids which may pose a clinical dilemma for physicians in healthcare systems which do not easily allow such review due to pressure on availability of appointments or difficulties with the same practice/department following up patients in the long term. It begs the question whether we should be advising our patients that with long term use, we are using topical corticosteroids 'off-label'.

Taking the above into account, it is timely for an international collaboration to develop a consensus opinion which outlines what is considered to be current good, real world practice, given the dearth of well designed clinical trials available to inform formulation of guidelines. It is clear that topical corticosteroids are an extremely useful part of our management armamentarium and it is important that we maximise appropriate use for the benefit of patients with psoriasis.

Disclosure statement

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JM van der Walt has no conflicts of interest to declare.

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C. Elise Kleyn, Elaine Morsman and Liezel Griffin
The Dermatology Centre, Manchester Academic Health Science Centre, Salford Royal NHS Foundation Trust, Manchester, UK
elise.kleyn@manchester.ac.uk

Jashin J. Wu
Dermatology Research and Education Foundation, Irvine, CA, USA

Peter C. M. van de Kerkhof
Radboud University Nijmegen Medical Centre, Nijmegen, the Netherlands
International Psoriasis Council, St. Louis MO, USA

Wayne Gulliver
Memorial University of Newfoundland, St. Johns NL, Canada

Joelle M. van der Walt
International Psoriasis Council, St. Louis, MO, USA

Lars Iversen
Department of Dermatology, Aarhus University Hospital, Aarhus C, Denmark