

Misuse of topical corticosteroids: a clinical study in an Iraqi hospital

M.A. Al-Dhalimi¹ and N. Aljawahiry²

سوء استخدام الستيرويدات القشرية الموضعية: دراسة سريرية في مستشفى عراقي
محسن عبد الحسين الظلملي، نسرین الجواهري

الخلاصة: قمنا في إطار هذه الدراسة بتقييم أسباب وتواتر حدوث المشاكل الجلدية الأكثر شيوعاً، والناجمة عن سوء استخدام الستيرويدات القشرية الموضعية. وقد استخدمنا في الدراسة استبياناً، إضافة إلى فحص الجلد، لدراسة المرضى الذين أتوا إلى مركز الأمراض الجلدية، في مستشفى الصدر التعليمي، في مدينة النجف الأشرف، بالعراق، خلال المدة من آذار/مارس 2001 إلى نيسان/إبريل 2002. وبيّنت الدراسة أن 140 مريضاً، من أصل 1780 مريضاً، أي ما يمثل نسبة 7.9٪ منهم، يسيئون استعمال الستيرويدات القشرية الموضعية. وكانت أعمار نصف المرضى تتراوح بين 10 و19 عاماً. وكانت المستحضرات المتوسطة الفاعلية والشديدة الفاعلية هي الأكثر استعمالاً. وفي 34.3٪ من الحالات كان أفراد الفريق الطبي هم المسؤولين عن وصف الأدوية أو التوصية بها.

ABSTRACT We assessed the frequency of, reasons for and the most common dermatological problems resulting from misuse of topical corticosteroids. We used a questionnaire and skin examination to study patients presenting at the dermatological centre, Al-Sadr Teaching Hospital, Al-Najaf, Iraq during the period March 2001–April 2002. Of 1780 new patients, 140 (7.9%) had misused topical corticosteroids. About half were aged 10–19 years. Potent and highly potent preparations were the most commonly used. In 34.3% of cases, medical staff were responsible for prescribing/recommending the drugs.

Utilisation abusive des dermocorticoïdes : étude clinique dans un hôpital iraquien

RÉSUMÉ Nous avons évalué la fréquence et les raisons de l'utilisation abusive des dermocorticoïdes ainsi que les problèmes dermatologiques qui en résultent. Nous avons utilisé un questionnaire et réalisé un examen cutané pour étudier les patients ayant consulté au centre dermatologique de l'hôpital universitaire Al-Sadr d'Al Najaf (Iraq) pendant la période mars 2001-avril 2002. Sur 1780 nouveaux patients, 140 (7,9 %) avaient utilisé des dermocorticoïdes de façon abusive. Environ la moitié d'entre eux étaient âgés de 10 à 19 ans. Les préparations de forte ou très forte activité étaient les plus couramment utilisées. Dans 34,3 % des cas, le personnel médical était responsable de la prescription/recommandation pharmaceutique.

¹Department of Dermatology, College of Medicine, University of Kufa, Kufa, Iraq (Correspondence to M.A. Al-Dhalimi: maldhalimi@yahoo.co.uk).

²Department of Clinical Pharmacy, Al-Najaf Health Office, Al-Najaf, Iraq.

Received: 19/01/05; accepted: 25/04/05

Introduction

Since their introduction almost 50 years ago, topical corticosteroids have made a dramatic contribution and been the mainstay of dermatologic treatment of a wide range of non-infectious diseases [1,2]. Topical corticosteroids are among the most commonly prescribed medications in the ambulatory setting. The clinical effects are mediated by their anti-inflammatory, vasoconstrictive, antiproliferative and immunosuppressive properties. These result from their ability to exert multiple effects on various functions of leukocytes and epidermal and dermal cells [3,4].

The unwanted effects are directly related to their potency, and have become more prevalent with the introduction of high potency topical corticosteroids. They include effects on the epidermis and the dermis in addition to those resulting from systemic absorption [5-11].

The increasing frequency of use of topical steroids has led to the detection of a number of clinical syndromes related to misuse such as perioral dermatitis, tinea incognito, impetigo incognito and infantile gluteal granuloma [1,12,13].

In recent years, haphazard use of the potent fluorinated topical steroids has been noticed among the general population in Iraq and was considered to be associated with increasing frequency of side-effects.

This study was carried out to assess the frequency of misuse of topical corticosteroids, the causes behind it and the most common problems resulting from it.

Methods

This study was carried out in the outpatient clinic of the Department of Dermatology and Venereology in Al-Sadr Teaching

Hospital, Al-Najaf, Iraq, during the period March 2001 to April 2002 on 1 day per week.

The patients studied were those who had used topical corticosteroids incorrectly (i.e. for conditions for which steroids are not indicated) for certain skin problems and presented with ≥ 1 of the side-effects of these drugs as the chief complaint. These included the appearance of ≥ 1 of the following signs: facial acne, facial hypertrichosis, cutaneous atrophy, stretch marks, hyper/hypopigmentation, tinea incognito, plethoric face and telangiectasia, infantile gluteal granuloma and pyoderma.

Patients were interviewed directly by the dermatologist using an anonymous questionnaire. Questions covered age, sex, education level, duration of treatment with topical corticosteroids, type and formulation of the drug (lotion, cream, ointment, etc.), frequency of application and reason for using the drug. Patients were also asked who had prescribed/recommended the remedy [patient himself, friend, family members (i.e. over-the counter), pharmacist, paramedical personnel, physician/general practitioner, other specialist or dermatologist]. We asked if the patients knew of the side-effects of the drugs and if they had read the leaflet (package insert) before use. They were also asked if they knew the amount of drug that should be applied for each body area (dosage).

The skin conditions which prompted the patients to visit the dermatology clinic were registered and the clinical details recorded. In addition, a full skin examination was performed to detect any condition related to abuse of topical steroids. Most diagnoses were exclusively clinical, and were based on typical, classical features. Potential systemic adverse effects were not investigated.

Results

Of the 1780 new patients seen in the Department of Dermatology during the study period, 140 (7.9%) had misused topical corticosteroids. There were 95 (67.8%) females and 45 (32.2%) males. The ages of the patients ranged from 1 to 49 years (mean 18.7 years) (Table 1). About half the patients were aged 10–19 years. There were no refusals to participate in the study.

The mean duration of use was 5.5 months (range 1–60 months). Most patients had used the drugs for a short period, and were attending the department because of side-effects.

The patients used the drug in the form of a cream base in 36 (25.7%) cases and in the ointment form in 104 (74.2%) cases. The number of applications varied from 1/day to 3/day. The main topical corticosteroids used are summarized in Table 2. Potent and very potent preparations were used by 133 (95.0%) patients.

Thirty-seven (26.4%) patients had some idea of the side-effects of topical corticosteroids. Some patients had read the leaflet (package insert), but 122 (87.1%) had not, either because they were illiterate (54 patients) or because the drug was supplied without a leaflet (82 patients). None of the patients knew the dosage, i.e. how much of the drug should be used for each particular body area.

Table 1 Age distribution of patients (n = 140)

Age group (years)	No.	%
1–9	17	12.1
10–19	69	49.3
20–29	38	27.1
30–39	12	8.6
40–49	4	2.9

Table 2 Distribution, source and reason for using the preparation in 140 patients who misused topical corticosteroids

Parameter	No.	%
Drug		
Clobetasole propionate 0.05%	59	42.1
Betamethasone valerate 0.1%	37	26.4
Flucinolone acetonide 0.025%	17	12.1
Mixed (> 1)	14	10.0
Triamcinolone acetonide 0.1%	7	5.0
Hydrocortisone acetate 2.5%	6	4.3
Source of drug		
Paramedical personnel	38	27.1
Self, friend or family member ^a	29	20.7
Pharmacist	26	18.6
Street vendor	25	17.9
Physician (non-dermatologist)	16	11.4
Dermatologist	6	4.3
Reason for using preparation^b		
Lightening the skin	92	65.7
Mild acne	23	16.4
Mild facial dryness	18	12.8
Napkin dermatitis	13	9.3
Pediculosis pubis	6	4.3
Scabies	5	3.5
Tinea corporis	4	2.8

^aBy hand.

^bSome patients indicated > 1 reason.

The main reasons for using topical corticosteroids included lightening of the skin in 92 (65.7%) patients and mild acne in 23 (16.4%) patients (Table 2). Some patients indicated > 1 reason for using these medications.

The people indicated by the respondents as being responsible for the incorrect use of the medications are shown in Table 2.

Most of the patients were either illiterate or could just read and write (63.6%), i.e. had not completed secondary school. Only 7.2% had higher education (after secondary school).

The dermatological abnormalities seen after application of topical corticosteroids are listed in Table 3. Acne and plethoric, puffy face with telangiectasia (steroid face) were the most common adverse effects noted. Stretch marks were seen in 17.1% of patients, none of them having the lesions on the face.

The number and degree of adverse cutaneous effects was correlated with the duration of use (results not shown). About 73% of those who presented with an acne-type rash had sudden onset at the sites of application with predominance of papulopustular lesions. Unusual features (such as widespread lesions, inflammatory and or pustular features) were noticed in 75.0% of patients with dermatophyte infections.

Discussion

Although our results clearly showed that misuse of topical corticosteroids is common in our country, 2 main criticisms can be made of our study. First, the dermatological diagnoses were based mainly on clinical grounds and not confirmed by further investigation; this reflects dermato-

logical practice in developing countries, where clinical accuracy for the diagnosis of common dermatoses appears to be good [14]. Moreover, the unusual features that we observed mainly showed an exaggerated pattern, rather than a really "atypical" one, therefore making the diagnosis easier. Second, most data were recorded using a questionnaire, and there may have been a reluctance by some patients, especially those who used the drug by themselves or on the advice of a friend or family member, to answer truthfully questions about the use of topical corticosteroids. Many patients did not know what topical corticosteroids were until they were shown samples of the drugs. This could have lead to an underestimation in our evaluation of the frequency of the practice. Despite these limitations, our study provides data confirming the extensive and uncontrolled use of topical corticosteroids in Iraq.

Misuse appears to be a common problem in our country. This is reflected by the large proportion of patients who visit the Department of Dermatology with side-effects of these drugs. The real problem is probably even greater, as, at the time of the study, many people who had used these drugs may not have presented at the clinic or side-effects had still not appeared.

Topical steroids have emerged in recent years as major skin lighteners owing to their potent bleaching power, and perhaps also their anti-inflammatory activity, which can reduce the risk for dermatitis [9,10]. Skin lightening was the main reason for the use of the drugs (65.7%). This may also explain the female predominance (67.8%) in the patients we studied.

About half of the patients (49.2%) were in the 10–19 years age group. This was probably to be expected as this is the period when young people start to take care of their appearance.

Table 3 Dermatological abnormalities seen in 140 patients who misused topical corticosteroids

Condition	No.	%
Facial acne	51	36.4
Plethoric face and telangiectasia	31	22.1
Facial hypertrichosis	27	19.2
Cutaneous atrophy	24	17.1
Stretch marks	24	17.1
Hyper-hypopigmentation	20	14.3
Pyoderma	12	8.6
Tinea incognita	4	2.9
Infantile gluteal granuloma	2	1.4

Unfortunately, we found that most of the topical corticosteroids used were classed as potent or very potent. In spite of the fact that these drugs can cause such serious side-effects, they are sold without medical prescription or control.

In this study, the main burden of responsibility for the misuse of topical corticosteroids was put on paramedical personnel and the patient (plus friends or family). This is probably an exaggeration since most products are easily available from street vendors (who were common in most cities of Iraq after sanctions were imposed, and increased in number after the invasion) or in non-pharmaceutical shops without a medical prescription or seeing a doctor. In fact, street vendors were the source of 17.9% of the drugs in this study. Secondary responsibility is carried by the pharmacists, general physicians and even some derma-

tologists. This may bring the unethical and unprofessional practices of some pharmacists and doctors to light, despite patent protection and regulation of sales of potent topical corticosteroids. It may also reflect the shortcomings of the continuing medical education programme with regard to this problem.

In conclusion, the misuse of topical corticosteroids has a huge impact on dermatological practice. It is responsible for a significant proportion of visits to dermatology clinics. It is a multiphase problem that needs the cooperation of different sectors in the community to overcome it. Education of the general public through special media programmes and the introduction of a continuing medical education programme for medical and paramedical personnel are probably the most important steps that could be taken to reduce this problem.

References

1. Griffiths WAD, Wilkinson JD. Topical therapy. In: Champion RH et al. Textbook of dermatology, vol. 4. 6th ed. Oxford, Blackwell Science, 1998:3547-52.
2. Sulzberger MB, Witten VH. The effect of topically applied compound F in selected dermatoses. Journal of investigative dermatology, 1952, 19(2):101-2.
3. Hughes J, Rustin M. Corticosteroids. Clinical dermatology, 1997, 15(5):715-21.
4. Baumann L, Kerdel F. Topical glucocorticoids. In: Fitzpatrick T, ed. Dermatology in general medicine, 5th ed. New York, McGraw-Hill, 1999:2713-7.
5. Lagos B, Maibach H. Frequency of application of topical corticosteroids: an overview. British journal of dermatology, 1998, 139(5):763-6.
6. Brodtkin RH, Janniger CK. The artful use of topical steroids. Cutis, 1998, 61(3): 125-6.
7. Keane FM et al. Unregulated use of clobetasol propionate. British journal of dermatology, 2001, 144(5):1095-6.
8. Fleischer AB Jr, Ford PG. How to prevent side-effects of topical corticosteroids. Skin and aging, 1998, February:54-65.
9. Mahe A et al. Skin diseases associated with the cosmetic use of bleaching products in women from Dakar, Senegal. British journal of dermatology, 2003, 148(3):493-500.
10. Arnold J, Anthonioz P, Marchand JP. Depigmenting action of corticosteroids. Dermatologica, 1975, 151(5):274-80.
11. Del Giudice P, Pinier Y. The widespread use of skin lightening creams in Senegal: a persistent health problem in West Africa. International journal of dermatology, 2002, 41(2):69-72.

12. Ive FA, Marks R. Tinea incognito. *British medical journal*, 1968, 3(611):149–52.
13. Bonifazi E et al. Granuloma gluteale infantum with atrophic scars: clinical and histological observations in eleven cases. *Clinical and experimental dermatology*, 1981, 6(1):23–9.
14. Canizares O, Harman RRM, eds. *Clinical tropical dermatology*, 2nd ed. Boston, Blackwell Scientific Publications, 1992.

WHO Drug Information

WHO Drug Information is a quarterly journal providing an overview of topics relating to medicines development and regulation which is targeted to a wide audience of health professionals and policy-makers. It communicates pharmaceutical information that is either developed and issued by WHO or transmitted to WHO by research and regulatory agencies throughout the World. The journal also includes regular presentations of newly proposed and recommended International Nonproprietary Names (INN) for Pharmaceuticals Substances.

Further information about WHO Drug Information is available at: <http://www.who.int/druginformation/>