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ABDEFS' scoring system: a new method of evaluating chronic ulcers

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Summary
Six clinical features of chronic skin ulceration are employed to described a new scoring system. When utilised in 50 evaluations of chronic leg ulcers, a significant correlation with independent observations of the same ulcers, based on the clinical judgement of an expert, was obtained. The new method of scoring can be applied with ease, requires no special training, and can be used consistently by health workers.

Keywords: *Chronic ulcer, scoring system, assessment.*

Résumé
Six traits cliniques d'ulcertion chronique de la peau sont employès icipour decrire un nouveau system de clasification. L'orsque le systeme a ètè utilisè pour l'evaluation de 50 cas d'ulcer chronique des pieds, une correlation significative avec une observation independante des meme ulcers basè sur le judgement clinique d'un expert a ètè obtenue. La nouvelle methode de classification peut etre appliquè facilement, ne necessite aucune formation speciale, et peut etre utilisè de manière consistante par les travaileleurs de domaine medicale.

Introduction

The disability that results from chronic ulceration has major implications for individuals and for the health of a nation. [1] There are many method of treatment of chronic skin ulceration. These include surgical and nonsurgical methods.

Many local applications have been promoted for use on skin ulcerations. Evaluation of the efficacy of these topical applications and methods of treatment call for a standard modality of assessment before, during and after treatment, in order to objectively compare these assessments.

A system of scoring ulcers which may be used readily by the average health worker is overdue. We propose this system, based on a prospective study of patients with chronic leg ulcer.

Method

Two independent observers made 50 evaluations each, of chronic leg ulcers in 12 patients at weekly intervals over a period of 6 weeks, while the patients were on medical treatment of their ulcers. The patients were recruited consecutively as they were referred to the Plastic Surgery Unit of the University College Hospital, Ibadan, Nigeria, between February and April 1995. While the patients attended for dressings as prescribed, the two observers evaluated each ulcer independently but simultaneously at weekly intervals. One utilised the abdefs' scoring system while the other based his evaluation on the clinical appearance of the ulcer.

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The abdefs' system consisted of scoring the ulcer based on certain features of an ulcer that begin with the first few English alphabets (excluding letter c) as follows:

A. Aetiology - 1. local, e.g., trauma, infection
2. controlled systemic disease
3. systemic disease,uncontrolled
4. malignancy

B. Base - 1. soft, mobile
2. hard fixed

D. Discharge - 1. slight to moderate
2. copious, purulent, etc

E. Edge - 1. flat, shelving, punched out
2. undermined, raised

F. Floor - 1. predominantly granulation
2. predominantly sloughy

S. Size - 1. Less than or equal to 2.5 cm in one dimension
2. greater than 2.5 cm in one dimension

After scoring each feature of the ulcer, the sum of all the points allotted was recorded for each observation of each ulcer. The minimum possible score therefore was six and the maximum score. 14, corresponding to the best and worst ulcers, respectively.

For the second observer, in order to standardise and make each evaluation as objective as possible, the expert's clinical judgements were allotted points as follows:

1. ulcer very healthy, will heal with conservative management.
2. Ulcer with healthy granulation, ready for skin grafting
3. Slightly uneven or slightly unhealthy granulation
4. Predominantly granulation but with small area of slough
5. Moderately sloughy, but interspersed with some granulation
6. Very sloughy and very little granulation seen at the surface
7. Very sloughy and discharging moderately
8. Dirty ulcer (slough all over and discharging copiously),
9. Dirty ulcer with local or systemic spread.

The abdefs' scores were compared with the clinical status scores using Spearman's rank correlation analysis, and the relationship of the scores obtained by linear regression. In both instances, the level of significance was taken to be $P < 0.05$.

Result

Details of evaluations are recorded in Table 1. The mean abdefs' score was 8.4 ± 1.7, while the mean clinical judgement point was 3.8± 1.5. Results of Spearman's rank correlation and linear regression analyses are presented in Table 2. There was a significant correlation of the two methods of evaluation. "*P*" value being less than 0.005.

Table 1: Abdefs' scores and clinical status scores of chronic leg ulcers in Ibadan

Evaluation	Abdefs' score	Clinical status score
1	8	6
2	8	5
3	8	5
4	8	4
5	8	4
6	7	5
7	7	4
8	7	3
9	7	3
10	8	6
11	8	5
12	7	5
13	8	1
14	8	1
15	6	1
16	6	1
17	6	1
18	8	3
19	8	2
20	8	2
21	8	5
22	8	4
23	8	4
24	8	3
25	8	3
26	11	5
27	11	4
28	11	4
29	11	4
30	11	5
31	11	5
32	11	5
33	11	4
34	11	6
35	11	5
36	11	5
37	11	4
38	11	5
39	8	8
40	8	4
41	7	4
42	7	4
43	6	4
44	6	3
45	6	3
46	6	2
47	9	5
48	9	3
49	8	3
50	8	2
No	50	50
Mean	3.84	8.40
Median	4.00	8.00
Standard dev.	1.50	1.73

Table 2: Spearman's rank correlation and linear regression of Abdefs' scores in clinical status scores of chronic leg ulcers in Ibadan

Correlation

Correlation coefficient = 0.45

P<0.005

The correlation coefficient is significantly different from 0

Linear Regression

Predictor variable (X): abdefs' score

Dependent variable (Y): clinical status score

Regression equation: Y= 0.61 ± 0.38x

Significance of slope: T = 3.41 df = 48

P = 0.0013

The slope of this line is significantly different from o
Confidence limits on the slope can be calculated as:
0.38 ± T(48) x 0.11.

Discussion

Unstructured observations commonly result in ambiguities when information about patients is exchanged, and when patients treated by alternative methods are compared or reported from different centres [2]. It is therefore important to record changing clinical states reliably. This will not only help to determine deterioration and improvement but may be used as a basis for prognostication. Thus treatment can be adjusted based on the changes obtained from serial scores.

To be accepted, a scoring system must be practical to use by the various workers involved in the management of such cases. In the case of chronic ulceration, this will include doctors, nurses, physiotherapists, and community health workers. The six different aspects of abdefs' scoring system are various characteristics normally utilized in the description of an ulcer. They are easy to measure, and no special training is required.

A significant correlation of the abdef's scores with clinical status scores in this study demonstrates the sensitivity of the scoring method. Given a known abdefs' score, the clinical points utilised in this study may be predicted by using the equation in Table 2.

References

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