RESEARCH REPORT

Treatment of Eczema in Patients, using bio-energiser quaver phase applied to the hands and feet.

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SUMMARY

Eczema is an allergic condition that affects the skin. Another name for eczema is dermatitis. Dermatitis is inflammation of the skin. There are several different types of dermatitis, but the one people usually mean when they say eczema is atopic dermatitis. Atopic refers to a lifelong tendency to allergic conditions such as asthma and allergic rhinitis (hay fever). Eczema can be triggered by just about anything coming in contact with the skin. It occurs in atopic people, who are extra sensitive to skin irritation. Dry, flaky skin appears over red, inflamed areas, causing intense itching and burning. Eczema is a very common condition, and it affects all races and ages, including young infants. About 1-2 percent of adults have eczema, and as many as 20 percent of children are affected. It usually begins early in life, even before asthma or hay fever. Most affected individuals have their first episode before age 5 years. For some, the disease will improve with time. For others, however, eczema is a chronic or recurrent disorder. Although it can occur just once, it usually occurs on and off throughout life, or lasts the entire lifetime. Eczema can be a difficult, frustrating condition. The natural human desire to scratch or rub an itchy rash just makes the condition worse, and treatments can be slow and are not always completely effective.

Key words: bio energiser, quaver, disability, quality of life questionnaire,

Abbreviations

QV	quaver (mJ)
BE	bio energiser
PDI	psoriasis disability index
QOL	quality of life

INTRODUCTION

Eczema is a general term for many types of skin inflammation (dermatitis). Atopic dermatitis is the most common of the many types of eczema. Several other forms have very similar symptoms. The diverse types of eczema are listed and briefly described below.

Atopic dermatitis: a chronic skin disease characterized by itchy, inflamed skin.

Contact eczema: a localized reaction that includes redness, itching, and burning where the skin has come into contact with an allergen (an allergy-causing substance) or with an irritant such as an acid, a cleaning agent, or other chemical.

Allergic contact eczema: a red, itchy, weepy reaction where the skin has come into contact with a substance that the immune system recognizes as foreign, such as poison ivy or certain preservatives in creams and lotions.

Seborrheic eczema: a form of skin inflammation of unknown cause that presents as yellowish, oily, scaly patches of skin on the scalp, face, and occasionally other parts of the body.

Nummular eczema: coin-shaped patches of irritated skin-most commonly on the arms, back, buttocks, and lower legs-that may be crusted, scaling, and extremely itchy.

Neurodermatitis: scaly patches of skin on the head, lower legs, wrists, or forearms caused by a localized itch (such as an insect bite) that becomes intensely irritated when scratched.

Stasis dermatitis: a skin irritation on the lower legs, generally related to circulatory problems.

Dyshidrotic eczema: irritation of the skin on the palms of hands and soles of the feet characterized by clear, deep blisters that itch and burn.

The bio-energiser has been shown to be effective in reducing the extent of eczema and producing a remission of variable duration. Studies support the administration of quaver therapy based upon establishment of the therapeutic modalities of the BE. It has been demonstrated that the most effective regime is to administer treatment three times a week with a 30 minute program.

The aim of our study was to investigate whether we could demonstrate that patients attending a busy private practice clinic experienced an improvement in QOL after treatment with the non-invasive BE system, using the protocol described above.

After the expected benefits and risks of the treatment were explained, the patient signed an informed consent.

METHODS

Subjects

A total of 21 consecutive patients were referred for bio-energiser therapy to the feet and hands and The Wessex Nuffield Hospital, Hampshire, between October 2003 and February 2004. The use of the bio-energiser as a therapy was considered when the patient's psoriasis was inadequately controlled by topical therapies alone and there are contraindications to the use of the bio-energiser.

Questionnaire

Patients completed questionnaires at the beginning and again at the completion of the course of the therapy. The questionnaire (Table 1) used 15 questions based upon those devised by Finlay and co-workers in developing their PDI.[1,3,4]

We omitted some of the questions and rephrased others to make them more appropriate for our eczema sufferers population.

We used a four-point Likert scale to rate the questions. We did not use the scoring system of the PDI. However, as with the PDI, we asked the patients to rate the impact of the eczema on their functioning and interactions over the preceding 4 weeks. Our final question requested the patient to rate his/her eczema at that point in time. In addition, in the post-therapy questionnaire, the patients were asked to rate the improvement of their eczema on a scale of 1 to 10 on a visual analogue scale. two represented no improvement while 18 represented considerable improvement (Fig. 1).

In order to analyse the change in QOL, questions were divided into three groups including activities of daily living, physical parameters and impact on interpersonal relationships (Table 1).

Table 1 Quality of life questionnaire

Over the past four weeks:

Activities of daily living

1. How much has your eczema interfered with you carrying out work around the house or garden?
2. How often have you worn different types or colours of clothes because of your eczema?
3. How much do you have to change or wash your clothes?
4. Has your eczema been much of a problem at the hairdressers?
5. Has your eczema resulted in your having to take more baths or showers than usual?
6. Has your career been affected by your eczema?

Physical

7. Is your eczema making it difficult for you to do sport?
8. Have you been criticised or stopped from using communal pools or changing facilities?
9. Have you avoided swimming or going to the beach because of your eczema?
10. Has your eczema resulted in you smoking or drinking alcohol more than you would do normally?
11. To what extent has your eczema or treatment made your home messy or untidy?

Interpersonal relationships

12. As a result of having eczema, have you felt aggressive, frustrated or embarrassed? 13. Has your eczema interfered with your daily social life, social events or relationships?
14. How have you felt about your skin over the last month?
15. How bad do you think your eczema is now?

Bio-Energiser Therapy

The therapy was administered in a standardised fashion as per protocol (Appendix 1). Parameters recorded included measured water and low sodium salt, the starting time, polarity intervals, colour changes and quaver cumulative pulses (all measured as millijoules per square centimeter in the water).

Statistical analysis

In order to explore the validity of the three groups, we employed clinical decision, factor analysis and use of Cronbach's alpha coefficient. Exploratory factor analysis was carried out using the varimax rotation method with Kaiser normalization. Computation of Cronbach's alpha coefficient was utilized to measure internal consistency reliability.[5] The Cronbach's alpha coefficient of group 1, 2 and 3 were 0.6, 0.5 and 0.6, respectively. The mathematical analysis confirmed the validity of these groupings. We therefore analysed the data using these three groups.

The pre- and post-therapy responses were compared using the paired sample *t*-test. Results wereexpressed as a mean and standard deviation. A *P*-value of <0.05 was considered significant. Statistical analysis was performed using SPSS 11.0 for Windows.

Results from 20/22 subjects were analysed; 11 were men. Two patients left the clinic without completing the questionnaire and were thus excluded from the study.

The mean and standard deviation of the three paired groups are shown in Table 2. The improvement in QOL was statistically significant. Specifically, the improvement in activities of daily living was significant (t=2.9, d.f.=89,P=0.005), as was the improvement in physical parameters (t=6.0, d.f.=89,P<0.001) and interpersonal parameters (t=16.4, d.f. =89,P<0.001). The visual analogue scale rating revealed that patients thought this method of therapy significantly improved their eczema (P<0.001; Fig. 2). fifteen patients (75%) thought their eczema was completely improved by the bio-energiser system, while five patients (25%) thought the psoriasis showed no improvement with the therapy.

There were no reported adverse events recorded from the treatments.

Table 2 Efficacy measures before and after bio-energiser

Groups	Mean, before bio energiser	Mean, after bio energiser	Change in (Mean ± SD)	*P*-value
ADL	1.62	1.21	0.11 ± 0.42	<0.005
Physical	1.52	1.32	0.29 ± 0.46	<0.001
Interpersonal	2.60	1.70	1.11 ± 0.62	<0.001

ADL, activities of daily living; SD, standard deviation

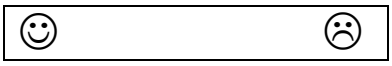

Figure 1
Visual analogue scale. The patient is shown a ruler and asked to state where he/she felt his/her eczema was currently. The sad face represents no improvement (corresponding to a score of 1) and the happy face considerable improvement (corresponding to a score of 10).

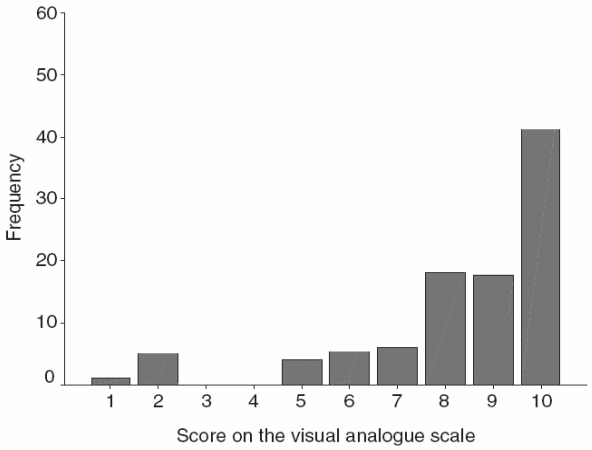

Figure 2 Results of the visual analogue scale at completion of therapy.

Discussions cont.

The concern with the protocol using the categorical scale is that two subjects with the same condition may demonstrate different responses to the same dose of quaver thus affecting their therapeutic response to the therapy. In the interest of achieving the optimal response to a course of the treatment, we adopted a protocol requiring that the patient's to stand up for 30 seconds and drink small to medium size glass of water.

The impact of eczema on QOL is frequently profound and often underestimated by the dermatologist. The dermatologist tends to focus on the physical aspects of the disorder, but from the patient's perspective it is often the interactional and functional difficulties that loom largest. In the absence of a permanent cure, the goal of treatment is to minimize the extent and severity of eczema to the point at which it no longer substantially disrupts the patient's QOL.

It is important to evaluate not just the change in appearance or extent of the patient's disease but also whether at the completion of the treatment course the patient is better able to fully participate in his/her life. Evaluation of the impact of a disease on a patient's QOL measures directly how a disease affects a patient's day-today functioning and sense of satisfaction with his/her life. It is conceptualized functionally by the patient's perceptions of performance in four areas, namely physical, occupational, psychological and social interaction.[6]

Good QOL is present when 'the hopes of an individual are matched by experience'.[7] In addition, QOL is not a static measurement, but continually changes over time.[2] For instance, those patients with chronic illnesses at the time of their initial diagnosis may demonstrate a greater impact on QOL compared
with later when some degree of mental adaptation has occurred.[2] Will the degree of improvement in QOL be maintained with subsequent courses of treatment? Any dermatologist or medical practitioner who looks after patients with eczema knows that the severity of the disease may vary from one clinical episode to another, so response to and duration of effect from treatment may vary from one episode to another. Even if the patient starts from a worse situation than on previous occasions or does not clear as well as on other occasions, an improvement in life quality is a desirable outcome.

Our data demonstrate that there is a significant change in patient-perceived QOL from the commencement of our standardised course of BE quaver therapy to the completion of the course. There are many questions that still need to be answered. Eczema demonstrates a relapsing clinical course. Our study did not measure the length of remission either in terms of continuing reports of good QOL or lack of objective evidence of disease activity. This is information we need to obtain. The long-term sequel of repeated courses of this kind of therapy are also unknown. To obtain this information will require further long-term study.

APPENDIX I

The BE system was built by Xecare Limited. It contained quaver technology from Q Science. Prior to each course of treatment the patient's condition was established by exposing non-sun-exposed skin of the feet or arms for pre-preparation doses of quaver energy. Starting doses for treatment were estimated on basis of skin colour and the severity of eczema. Dosage increments for determining the correct quaver mJ and milliamps were 0.5 times the preceding dose. For example, in this system to establish the quaver and amperage for fair skin we would start with 0.5amps. The second square would be exposed to 1×0.5=0.5amps with 1mJ, then 2×0.5=1amp with 2.0mJ, then 3×0.5=1.5amps with 3 mJ. It should be noted that the numerical number of amps or millijoules delivered does not represent a figure transferable to other or similar systems. We have previously presented data demonstrating that under current calibration methodology the dose measured in amps or millijoules in one machine is not equivalent to that measured in millijoules in another machine.[8]

Treatment was given three times a week. The starting therapeutic dose was applied. At each subsequent treatment, the dose was increased by 10% unless there was improvement when the dose was adjusted as per the protocol. Arms and legs were given a full 30 minute treatment. A maximum of 30 treatments were given in any one course. All patients were asked to drink one litre of water a day and prior to receiving the BE therapy. Patients were permitted to continue concomitant topical therapies. Treatment was terminated when the eczema had resolved sufficiently to no longer be of concern to the patient, or a maximum of 30 treatments had been given. Missed treatments were handled as per protocol.

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