tive malabsorption of zinc as a consequence of intestinal involvement in GS. In accordance with this view, D-penicillamine was found to increase zinc absorption in our GS patients. A study of GS patients receiving D-penicillamine in identical therapeutical doses as here, revealed normal levels of serum zinc, but an increasing urinary output of zinc, presumably reflecting an increased intestinal absorption of zinc during D-penicillamine treatment (5). Experimental studies in young rats receiving from 63 to 625 mg D-penicillamine per kg per day by gavage showed a dose-dependent significant increase in the 65Zn absorption as compared with untreated controls (10). The therapeutical doses in our patients were considerably lower than in the experimental rats, about 10 mg per kg per day, which may explain the difference between the two studies.

The role of zinc in collagen metabolism is only fragmentarily known. Zinc deficiency induced in rats impairs collagen biosynthesis significantly, probably via nucleic acid dependent processes (3). Whether low or high concentrations of zinc interfere with the establishment of intramolecular crosslinking by means of the copper-containing enzyme lysyl oxidase is still a matter of contention (8).

One direct effect of zinc on collagen metabolism may be on its degradation, since it has been demonstrated that mammalian collagenase is a zinc metalloenzyme (9).

REFERENCES


Low Molecular Weight Dextran in Systemic Sclerosis and Raynaud’s Phenomenon

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There have been several reports of improvement of peripheral circulation in patients with systemic sclerosis by infusions of low molecular weight dextran (LMWD) (1, 2, 3, 4, 5). A pilot study by us of 12 patients given a single infusion of LMWD failed to show any significant change in digital temperature when compared with an infusion of 5% dextrose. Some authors (1) have suggested that repeated infusions are necessary, so it was decided to conduct a double-blind trial comparing 10% LMWD in 5% dextrose with 5% dextrose alone, giving three infusions at 8-week intervals.

PATIENTS AND METHOD

Twenty-one patients with systemic sclerosis took part in the trial. Clinical details are shown in Table I. They all suffered from severe Raynaud’s phenomenon and 2 patients had had previous digital amputation for gangrene. Each patient received intravenous infusions on three occasions at 8-weekly intervals. On admission to the

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Table 1. Patient details and results

<table>
<thead>
<tr>
<th>No. of pts</th>
<th>Age Mean ± SD</th>
<th>Sex</th>
<th>Infusion 1</th>
<th>Infusion 2</th>
<th>Infusion 3</th>
<th>4 weeks later</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Pre</td>
<td>Post</td>
<td>Pre</td>
<td>Post</td>
</tr>
<tr>
<td>Systemic sclerosis</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low molecular</td>
<td>10</td>
<td>45</td>
<td>29.3 ± 3.1</td>
<td>29.7 ± 3.0</td>
<td>30.7 ± 3.3</td>
<td>30.5 ± 2.6</td>
</tr>
<tr>
<td>Weight dextran</td>
<td>11</td>
<td>46</td>
<td>29.5 ± 4.2</td>
<td>26.8 ± 3.6</td>
<td>28.4 ± 3.7</td>
<td>27.8 ± 3.9</td>
</tr>
<tr>
<td>Low molecular</td>
<td>4</td>
<td>33</td>
<td>29.8 ± 3.0</td>
<td>31.0 ± 3.4</td>
<td>32.0 ± 3.4</td>
<td>30.6 ± 3.4</td>
</tr>
<tr>
<td>Weight dextran</td>
<td>4</td>
<td>36</td>
<td>30.6 ± 4.3</td>
<td>26.8 ± 3.5</td>
<td>29.2 ± 4.1</td>
<td>28.9 ± 4.3</td>
</tr>
</tbody>
</table>

RESULTS

As initial temperatures and the response to treatment varied between fingers in individual patients, the results were expressed for each patient as the mean of the temperatures of all the digits. Table I shows the mean temperatures of the digits of the whole group before treatment and after each infusion. In the group of patients given LMWD there was no significant change in the mean digital temperature after any of the infusions. Similarly there was no significant change in temperature 4 weeks after completion of the trial compared with the temperature on entry to the trial. In the control patients there was a reduction in the mean temperature significant at the 5% level after the first infusion, but not after the second and third infusions.

Of the 14 patients who received the LMWD infusion, 7 thought their circulation had improved, 5 thought there was no change and 2 thought that they were worse. Of the 15 patients who received 5% dextrose, 6 thought their circulation had improved, 8 that there was no change and one that he was worse.

All the patients tolerated LMWD well. There were no side effects, deterioration of renal function or allergic response.

DISCUSSION

We have shown that repeated infusions of LMWD do not increase the digital temperature in patients with systemic sclerosis and Raynaud's phenomenon. The difficulty in this type of trial is indi-
cated by the inexplicable tendency to a reduction in temperature after the first infusion of 5% dextrose in our control patients. This was not consistent, however, and did not occur in all patients. It is possible that an increase in digital temperature after the second and third infusions of 5% dextrose in our control patients. We would stress the unpredictability of response of individual digits to warming or therapy. Moreover, subjective changes in patients are not always matched by objective temperature measurements.

The methodological difficulties we encountered probably account for the anomalous results in previous uncontrolled trials.

CONCLUSION
Repeated infusions of LMWD did not significantly alter the temperature of the fingers in a controlled clinical trial. However, in occasional patients the finger temperature rises and ulceration heals, so that this form of therapy may have a limited place in therapy as there is no alternative specific form of treatment. It is impossible to predict those few patients who will have a satisfactory response.

REFERENCES

Long-term Follow-up of Photochemotherapy in Pityriasis lichenoides
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Received March 4, 1982

Abstract. Five patients with a histopathologically confirmed diagnosis of pityriasis lichenoides were treated with PUV A or irradiated with a light source emitting UVA and UVC, without prior intake of psoralens. All patients showed a good response to treatment. Long-term follow up showed that patients remained free of lesions during a period of 20 to 36 months: 3 patients had a recurrence of the disease, though less extensive than before, after 25, 23, and 23 months, respectively.

Key words: Pityriasis lichenoides; Phot(chemo)therapy

Pityriasis lichenoides (PL) is a skin disease of unknown aetiology. It may be divided into an acute and a chronic type, although the two types are considered to be different expressions of one disease entity (1). The chronic form especially is considered to be resistant to all kinds of propagated treatments (2). It has been reported that exposure to sunlight may have a beneficial influence on the course of the disease (3). Recently, favourable results of phot(chemo)therapy of PL have been reported (4, 5).

MATERIAL AND METHODS
We treated 5 patients with PL, in which 3 cases were classified as "acute" and 2 as "chronic" type. with phot(chemo)therapy. The type of disease, established by clinical and histopathological criteria, the age of the patients, the duration of the disease and previous treatments are shown in the table.

Four patients were treated with PUV A (8-methoxypsoralen plus UVA, light source Fr-T12 Sylvania tube). Initial irradiation energy was established according to the skin type and the dosage was increased according to the guidelines of the European Cooperative Clinical Trial. One patient was treated with a light source consisting of 8 Osram Ultra Vitalux lamps emitting UVA and UVB. Initial irradiation was 3 min and was increased according to our psoriasis scheme. The energy output of the lamps was not known. Treatment was given three times each week.

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