
Chryotherapy has been shown to induce complete and persistent remission but only in a small proportion of patients with long-standing, unrelenting, erosive RA, even if the serum gold level is monitored weekly and the dose adjusted individually (1:2). Yet factors which could potentially predict good tolerance and eventual benefit have hardly ever been investigated.

An unusual opportunity for such a study was provided by a total of 580 patient-weeks of chryotherapy adjusted to individual 'tolerance', i.e. up to mild side-effects in everyone, in search of maximal efficacy (Lorber and others, 1973).

Twenty-four patients with 'definite' or 'classical' RA, unresponsive to or intolerant of oral anti-inflammatory medication (including corticosteroids in 15) were treated. Clinical and laboratory parameters of inflammatory disease activity and of (potential) toxicity were monitored weekly, as well as 7th day serum gold levels (by atomic absorption against a weighed gold standard), as previously described in detail (De Bosset and Bitter, 1973).

While under such extreme treatment a complete and lasting (over 6 months) remission could be documented in 15 patients, no correlation became evident between the outcome of treatment and either previous duration of disease, previous administration of corticosteroids, or initial height of rheumatoid factor titre.

But at variance with a recent investigation (Co-operating clinics of the A.R.A., 1973) a certain (not quite) significant trend emerged towards an increased anti-inflammatory effect of gold in patients with high initial joint scores; in addition there were parallel trends towards steep decreases in remission rate, 'barely tolerated' weekly dose and serum gold level between the ages of 45 and 65 years. This suggestion of a narrow therapeutic margin above the age of 60 could question the indications for chryotherapy in the elderly.

References

Defective cellular immunity in juvenile rheumatoid arthritis.
By John Jennings (Dept. of Child Health, Royal Hospital for Sick Children, St. Michael's Hill, Bristol)

During the last few years considerable interest has been focussed on the role of cellular immune responses in rheumatoid arthritis. Several workers including ourselves have shown impaired cellular immunity in this disease. At present it is difficult to assess the importance of these findings. If one ascribes to the view that intracellular infective agents, such as viruses, are of importance in this disease, the impaired cellular immunity would be expected to facilitate the spread and proliferation of the infective agent throughout the host, presumably resulting in an increased number of infected joints. In this study we have been assessing, over the last 12 months, Bristol children with rheumatoid arthritis. We have restricted ourselves to in vitro tests on T cell lymphocytes using the following techniques: (i) Enumeration of the proportion of T cells in peripheral blood using classical rosette techniques. (ii) Phytohaemagglutinin (PHA)-induced lymphocyte transformation using micro whole blood techniques. (iii) PHA-induced lymphocyte cytotoxicity of chromium51-labeled chicken erythrocytes.

In the first instance we were able to discern two quite distinct groups of patients using the T cell rosette technique. Control values ranged from 40 to 66% with an average of 51% (13 subjects). One group of patients had T cell values nearly akin to that of the controls, ranging from 45 to 53% with an average of 49% (10 patients). The other group had appreciably lower T cell values ranging from 31 to 36% with an average of 33% (7 patients). The 'low' T cell group was of interest on two accounts: (i) There was a preponderance of polyarthritis compared to a predominance of monoarticular arthritis in the 'high' group. (ii) Defects of T cell function as manifest by grossly impaired responses in the lymphocyte transformation and cytotoxic tests have only been found in this group in four patients (Table).

Our current hypothesis is that disturbances in the proportion of T cells in the peripheral blood and defects in T cell function pin-point defects in cellular immunity, sufficient to facilitate the spread of infective agents to the joints. This would account for the association of polyarthritis with the group characterized by anomalous T cell behaviour.

Table T cell function tests in four patients of the group with low T cell ratios

<table>
<thead>
<tr>
<th>Case no.</th>
<th>Lymphocyte transformation* index</th>
<th>Lymphocyte cytotoxic* index</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1-2</td>
<td>11-2</td>
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<tr>
<td>2</td>
<td>1-3</td>
<td>1-3</td>
</tr>
<tr>
<td>3</td>
<td>2-1</td>
<td>Not tested</td>
</tr>
<tr>
<td>4</td>
<td>62</td>
<td>1-2</td>
</tr>
</tbody>
</table>

* This equals: counts/100 seconds of uptake of tritiated thymidine in stimulated cultures divided by uptake in unstimulated cultures. Normal values ranged from 30 to 110 with an average of 75.
† This was monitored by estimating the % release of Cr51 from the target cells. Normal values ranged from 30 to 85 with an average of 62.

Cell mediated immunity to synovial antigens in rheumatoid arthritis. By P. A. Bacon, A. Cracchiolo, R. Bluestone, and L. S. Goldberg (Department of Rheumatology, Center for the Health Sciences, University of Los Angeles, California)

The widespread evidence indicating an immune aetiology for the synovitis of RA has largely concerned humoral
P De Bosset and T Bitter

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