Heberden Society

Clinical Meeting, Bristol, June 28 and 29, 1974

At a clinical meeting held in Bristol, June 28 and 29, 1974, of the Heberden Society and the Swiss Society for Rheumatology with the British Association for Rheumatology and Rehabilitation and the Royal Society of Medicine Section on Rheumatology and Rehabilitation, the following papers were given.

Cardiac lesions in Reiter's syndrome and ankylosing spondylitis. By J. A. COSH, N. GERBER, D. W. BARRITT, and M. I. V. JAYSON (*Royal National Hospital for Rheumatic Diseases, Bath and British Royal Infirmary*)

Cardiac involvement is uncommon in Reiter's syndrome and in ankylosing spondylitis, but is remarkably similar in the two conditions. The characteristic lesion in both, arising after some years, is proximal aortitis leading to aortic dilatation and aortic valve regurgitation; this may be severe enough to warrant valve replacement. Various grades of heart block may develop, either alone or combined with aortic regurgitation, and pacing may be required for total heart block. In the early stages of Reiter's syndrome transient pericarditis and transient first-degree block may occur, and pericarditis occasionally develops too with ankylosing spondylitis.

Two patients with Reiter's syndrome had valve replacements for severe aortic regurgitation. In each the excised valve cusps histologically showed nonspecific fibrous thickening. One patient remains well 5 years after operation but has symptomless atrioventricular dissociation. The other has done less well; he had marked narrowing of the coronary ostia resulting in a poorly functioning left ventricular myocardium. Another patient had temporary first-degree heart block in the early stages of Reiter's syndrome.

Among a series of 128 patients with ankylosing spondylitic aortic regurgitation was found in three, all mild. Four other examples of aortic regurgitation were found from other sources, of whom two died and autopsy findings are available. One died of heart failure due to the valve lesion. The other died in renal failure from analgesic nephropathy, having already had bacterial endocarditis on the aortic valve successfully treated.

Four spondylitic patients have first-degree heart block without aortic regurgitation. One other spondylitic had unexplained heart failure with temporary atrial flutter, thought to be due to cardiomyopathy.

The foot in chronic rheumatoid arthritis. By E. VIDIGAL, R. K. JACOBY, A. ST. J. DIXON, A. H. RATCLIFF, and J. KIRKUP (*The Departments of Medicine and Orthopaedic Surgery, University of Bristol and the Royal National Hospital for Rheumatic Diseases, Bath*). To be published in full in the *Annals*.

Pain threshold (PT) analysis in patients with osteoarthritis of the hip. By SUSAN L. O'DRISCOLL and MALCOLM I. V. JAYSON (*Department of Medicine, University of Bristol and the Royal National Hospital for Rheumatic Diseases, Bath*) Pain is generally recognized as a protective sensation. If the threshold for a noxious stimulus to just produce the symptom of pain is high, then a subject may be more liable to damage joints and develop degenerative joint disease. Alternatively, it could be considered that if the PT is low, then patients are more liable to suffer pain from degenerative arthritis than if it is normal. The PT was, therefore, determined by Keele's method (1954) using a modified algometer with a special reference to osteoarthritis of the hip. The radiological changes in the joints were quantified by reference to the 'Atlas of Standard Radiographs of Arthritis' (1963) and only patients with grade III or grade IV changes were included.

Measurements were obtained in 21 patients awaiting total hip replacement and in 22 after such surgery. In 9 of these subjects, sequential measurements were made before and after operation. 12 patients were also seen with comparable radiographic osteoarthritis but whose symptoms did not warrant surgery. The PT was also measured in 21 normal controls, matched to the preoperative group for age and sex. The pain threshold for the 4 groups is shown in Table I.

The PT in the preoperative group was significantly lower than that of the controls ($P < 0.05$). There was no difference between the controls and the postoperative group ($P > 0.01$). The PT was considerably higher in the postoperative group than in the preoperative patients ($P < 0.001$) and an increase in the PT was observed in the 9 patients who were studied before and after surgery (Table II; $P < 0.01$).

Despite comparable radiographic changes, the PT was higher in the 12 patients not for surgery than in the preoperative group ($P < 0.001$) and indeed was slightly higher than in the controls ($P < 0.05$).

Table I

Group	PT(kg)
Controls (21)	3.71 $\pm$ 0.93
Preoperative (21)	2.98 $\pm$ 1.01
Postoperative (22)	4.24 $\pm$ 0.93
Not for surgery (12)	4.50 $\pm$ 0.83

Table II PT in the 9 patients studied before and after surgery

Group	PT (kg)
Preoperative	3.22 $\pm$ 1.20
Postoperative	4.06 $\pm$ 1.04

These results do not support the thesis that a high PT predisposes towards osteoarthritis of the hip. They suggest that exposure to chronic joint damage lowers the PT so increasing the symptoms and the PT can return to normal after successful surgery. If the PT does not fall, then symptoms are not so severe and surgery is less likely to be indicated.

Reference

'Atlas of Standard Radiographs of Arthritis'. (1963) Oxford
KEELE, K. D. (1954) *Lancet*, **1**, 636

Factors governing safety and success of gold salt therapy in rheumatoid arthritis (RA). A prospective study. By Ph. DE BOSSET and T. BITTER (*Sandoz-hospital Arthritis Centre, Lausanne*)

Chrysotherapy 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 chrysotherapy 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 chrysotherapy in the elderly.

References

DE BOSSET, P., and BITTER, T. (1973) *Schweiz. med. Wschr.*, **103**, 1153
LORBER, A. *et al.* (1973) *Ann. rheum. Dis.*, **33**, 133
Co-operating clinics of the A.R.A. (1973) *Arthr. and Rheum.*, **16**, 353

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-labelled 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). Case 4 is of interest in that the lymphocyte cytotoxic test but not the transformation test was abnormal and in addition the patient was tested within one month of presentation at the hospital, i.e. of recent onset.

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

Case no.	Lymphocyte transformation* index	Lymphocyte cytotoxic† index
1	1.2	11.2
2	1.3	1.3
3	2.1	Not tested
4	62	1.2

* 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