DR. R. N. MAINI (*London*) How did you diagnose systemic sclerosis and was there any information on antinuclear factors available on any of these patients?

DR. ROWELL All the patients had Raynaud's phenomenon followed by characteristic cutaneous changes and multisystem involvement of systemic sclerosis. Antinuclear factor was done on all cases. There was no consistent pattern to suggest any relation between antinuclear antibodies and the pattern of staining seen in the sections. All this series had one or more antinuclear factors. It has been shown that nearly 70 per cent. of patients with systemic sclerosis have antinuclear factor of one pattern or another (Rowell and Beck, 1967).

DR. G. HUGHES (*London*) I should like to ask you again about your controls, because this sort of straining is not specific. The second point is that mesangial deposition is found in patients with systemic lupus without clinical evidence of renal disease and is of uncertain significance.

DR. SCOTT I agree. In our study, too, mesangial staining had little clinical significance. The question is why is this so? Are there two different types of complexes involved in systemic lupus erythematosus, one which lodges in or on capillary basement membranes and one which lodges in the mesangium? As to the controls used; the antiglomerulus conjugates were absorbed with normal human serum and Group A and B red cells before use. The usual blocking procedures were run in parallel with staining experiments. The staining seen in the systemic sclerosis and systemic lupus erythematosus material was compared with that seen in sections of normal kidney.

References

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Occurrence of DNA-antibodies in Antinuclear Factor containing Sera and a Comparison with Immunofluorescence. By D. N. GLASS, J. CAFFIN, H. J. ANDREWS, R. N. MAINI, and J. T. SCOTT (*Kennedy Institute of Rheumatology and Charing Cross Hospital*)

HeLa cell C_{14} DNA at a final concentration of 0·5 μg./ml. was used in a 'Farr' type ammonium sulphate assay for the detection of DNA binding in ANF positive sera. The sera had been obtained from a range of connective tissue diseases including systemic lupus erythematosus (SLE). ANF was detected by the usual immunofluorescent technique using rat liver sections. Of the 150 ANF positive sera tested, 25 showed raised DNA binding correlated with clinically active SLE.

The relationship of DNA binding to ANF tested at serum dilutions of 1:10 and 1:1,000 is shown below:

DNA binding	*No. ANF positive at a dilution of:*	
	1:10	1:1,000
Positive	25	9
Negative	125	17
Total sera	150	26

Eleven out of 26 sera with ANF at 1:1,000 dilution were derived from patients with SLE and of these seven were positive and four negative for DNA binding. Two other sera with ANF from non-SLE patients gave low DNA binding values and were negative on repeating the test. It will be noted that there was a better correlation between DNA binding and sera positive for ANF at a 1:1,000 dilution than at 1:10. 25 DNA antibody positive sera gave homogenous pattern fluorescence in most instances and comet or membraneous in the rest. No particular pattern of fluorescence correlated specifically with DNA antibodies, each pattern also being found in DNA antibody negative sera.

DNA of high purity (containing RNA protein contamination of less than 0·1 per cent.) gave very similar results to those obtained with the crude DNA preparation. DNA from other sources (kindly supplied by Dr. H. Harley, University College Hospital Medical School) such as CVI (monkey) cells was also undertaken and the results were comparable. However, the ammonium sulphate precipitation technique has several unsatisfactory aspects for routine use. The technical problems include a necessity to work at 4°C. for separation and difficulty in centrifuging down the whole of the rather fragile ammonium sulphate precipitation, giving an unsatisfactory extrapolation of results by having to count the upper half of the supernatant as well as the remainder of the precipitate and supernatant. The latter occasionally gave rise to DNA binding with a negative value. A lack of precision due to large replicate variation between duplicate samples, especially at the low level of binding, was noted and accounted for values above the normal range (false positives) in normal sera. For some investigative and research purposes a more precise assay is necessary, and a double antibody technique developed in this laboratory might be suitable.

Reference

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A Study of Depression in Rheumatoid Disease. By G. ZAPHIROPOULOS and H. C. BURRY (*Department of Rheumatology, Guy's Hospital, London*)

It has long been suggested that patients suffering from rheumatoid disease may suffer a mild depressive reaction which can materially impede their progress and delay rehabilitation.

We have endeavoured to determine the incidence of depressive reaction in patients suffering from rheumatoid disease admitted for in-patient therapy to the Hume-Kendall Unit at New Cross Hospital. For the purpose of this study the Beck Depression Self-Assessment Inventory was used. This is designed to incorporate all symptoms relevant to the depressive constellation of symptoms, at the same time providing for grading of the intensity of symptoms. With this method the highest score (26–45) corresponds to the clinical rating of 'moderate to severe' degree of depression, the middle range (15–25) to 'mild to moderate', and the lowest range (0–14) to 'no-depression'. Symptom complexes which could have had a physical rather than psychological basis were not scored, *e.g.* work inhibition, weight loss, or loss of libido.

Fifty unselected patients with rheumatoid disease fulfilling the A.R.A. criteria for definite or classical RA were included in the study. They completed the inventory

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