Thrombocytosis in rheumatoid arthritis. R. M. Hutchinson, P. Davis, and M. I. V. Jayson (*Dept. of Medicine, Bristol*) Published in the *Annals*, 1976, 35, 138.

Nervous system involvement in systemic lupus erythematosus. T. Gibson and A. R. Myers (*Hospital, University of Pennsylvania, Philadelphia, and Guy's Arthritis Research Unit, London*). Published in the *Annals*, 1976, 35, 398.

Nature of pulmonary functional disturbances in SLE. G. J. Gibson, J. P. Edmonds, and G. R. V. Hughes (*Royal Postgraduate Medical School, London*)

The frequent involvement of the pleura and lungs in SLE has been shown in several clinical, physiological, and pathological studies. Tests of pulmonary function in particular show abnormalities in the majority of patients, sometimes in the absence of clinical or radiographic signs. 28 patients with SLE have been examined clinically, radiologically, and physiologically in an attempt to clarify the nature and pathogenesis of pulmonary involvement. Functional abnormalities were found in 22. A restrictive ventilatory defect or a defect of gas transfer may occur either individually or together. Weakness of the respiratory muscles, in particular the diaphragm, may contribute to the reduction of lung volumes and may account for the raised diaphragms seen radiographically in some patients with otherwise unexplained dyspnoea and orthopnoea. A defect of gas transfer out of proportion to any volume reduction implies abnormalities of the alveolar walls or pulmonary vasculature. No correlations were found between indices of immunological activity and the functional abnormalities which might be expected to accompany immune complex deposition in pulmonary vessels. It is likely, however, that the abnormalities of pulmonary function in SLE are of multifactorial pathogenesis and this might obscure any such causal relationship.

IgG and IgM anti-DNA antibodies in systemic lupus erythematosus. I. D. Griffiths, D. N. Glass, R. N. Maini, and J. T. Scott (*Kennedy Institute of Rheumatology, London*)

While antibodies directed against native DNA are of diagnostic value for SLE and are usually associated with disease activity, the factors which lead to the varying patterns of multisystem involvement are ill understood. We have investigated the possibility that the immunoglobulin (Ig) class of anti-DNA antibody may be associated with specific system involvement. Using ¹²⁵I-DNA and the second antibody technique (Glass *et al.*, 1973) for the detection of IgG, IgA, and IgM anti-DNA antibodies, we have found raised levels of IgG DNA binding in 35 sera and in these sera IgM DNA binding was also present in 9 and IgA DNA binding in 2. We have not detected any sera which show IgM or IgA DNA binding without IgG DNA binding.

The measurement of the immunoglobulin class of anti-DNA antibody has to take into account spontaneous precipitation of ¹²⁵I-DNA by sera in the assay before the addition of the second antibody and examples of this phenomenon are illustrated in Table I.

Table I Measurement of spontaneous precipitation and IgM class of antibody in 2 sera

Serum dilution	Patient H.K. % DNA binding			Patient F.P. % DNA binding		
	Sp(a)	IgG(b)	IgM	Sp	IgG	IgM
1:1280	5	12	7	8	27	6
1:640	5	12	14	10	39	7
1:320	8	16	20	10	56	5
1:160	14	25	41	10	69	9
1:80	50	61	74	11	78	9
1:40	59	92	88	10	79	13
1:20	39	98	98	13	82	30
1:10	19	99	100	16	82	66

(a) Spontaneous precipitation without 2nd antibody; (b) value obtained following addition of monospecific 2nd antibody.

In practice, therefore, when measuring DNA binding of an immunoglobulin class the amount of DNA spontaneously precipitated has been subtracted in each case.

Seven of the sera with IgM anti-DNA antibody have been studied further to obtain information on the relative amounts of IgG and IgM DNA binding. Dilution curves of the DNA binding activity with the appropriate class-specific second antibody were constructed and the relative amounts were expressed as the ratios of the serum dilution factors which gave 30% DNA binding for the IgG and IgM antibody (Table II).

Table II Ratios of IgG:IgM DNA binding in patients with raised IgM DNA binding

Patient	DNA binding ratios G:M	Total DNA binding activity*	System involvement
H.K.	1:1	2000	CNS
G.H.	1:1	250	CNS
G.M.	6:1	600	Vasculitis & renal
M.T.	14:1	300	Renal
G.T.	16:1	400	Renal
F.P.	53:1	3000	Renal
J.C.	60:1	1400	Renal

* Standardized units (normal range < 25 units/ml).

The total DNA binding activity of these sera measured in the standardized Farr assay (Holian *et al.*, 1975) is shown in Table II and gives an indication of the high levels of activity present. 2 of the patients (H.K. and G.H.) had no demonstrable renal disease. It was of interest that in these 7 sera IgM DNA binding in amounts equivalent to IgG DNA binding occurred in the 2 patients who have shown severe central nervous involvement.

The finding of equal proportions of IgG and IgM DNA binding may be of clinical significance since these 2 patients were the only ones in our series of patients with raised DNA binding who have developed unequivocal organic brain damage.

References

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