group who are e-antigen positive respond even less well is premature.

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CORRELATION BETWEEN TESTS OF CELL-MEDIATED IMMUNITY

SIR,—There is much interest in the use of in vivo and in vitro tests of immune competence in cancer patients. Sometimes only one of the many tests available is used, and frequently the results have been related to prognosis.

We have compared the results of four tests of immune competence in 58 women, 45 of whom had breast cancer. The control group of 13 were age-matched with the cancer groups. The four tests used were Mantoux and dinitrochlorobenzene (D.N.C.B.) skin tests, lymphocyte stimulation by phytohæmagglutinin (P.H.A.), and enumeration of T lymphocytes by means of sheep red-blood-cell rosettes. The techniques are described elsewhere.[1-3]

The results for each test were analysed by first defining whether a patient had a good or a poor response to that test. A patient was considered to have a poor response in the E-rosetting tests if her percentage T-lymphocyte count was more than 2 standard deviations below the mean of the control group. The response to P.H.A. stimulation was considered to be poor if the level of response to a suboptimal concentration of

FREQUENCY OF POOR RESPONSES TO TESTS OF IMMUNE COMPETENCE

Group	T lymphocytes	P.H.A. stimulation	D.N.C.B.	Mantoux
Breast cancer:				
Stage 1	8/13	0/13	0/12	8/12
Stage 2	13/15	6/15	0/15	4/15
Stage 3	2/10	0/10	1/8	4/8
Stage 4	6/7	3/7	2/7	1/7
All stages	28/45	9/45	3/42	17/42
Control	2/13	1/13	1/5	6/11

P.H.A. (0·3 μg/ml) was less than 5000 disintegrations/min. Responses to D.N.C.B. and Mantoux skin testing were scored as positive or negative.[1]

In the group studied different conclusions regarding the immune competence of patients in different stages of breast cancer might be drawn if the results of tests are considered individually (see table). The limited value of Mantoux skin testing as a test of immune competence is emphasised by the fact that 6/11 of the benign cases were negative.

Only 7 of the 42 patients with breast cancer had a good response in all four tests. If the results of the Mantoux test were excluded a good response to each of the remaining three tests was found in 13/42 patients. The best concordance was in the stage 3 patients where 7/8 patients had a good response in all three tests. There were however, no significant positive correlations between any of the tests. These findings suggest that each test measures a different facet of immune responsiveness or that the immune response is impaired in different ways in each patient or that the tests are intrinsically unreliable.

We conclude that breast-cancer patients with stage-3 disease are the most biologically homogeneous group (a conclusion that we have reached previously from independent evidence[3,4]) and that the information obtained from a single test of immune function in a study of this kind is of limited value. It seems that when a tumour leads to immune depression then the immune defect might be detected by any of the test systems. A defect was rarely detected in all tests, and this finding argues strongly for a battery of tests to be done for each patient.

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SINUSOIDAL HEPATIC INFILTRATES

SIR,—You state[1] that, apart from the tropical splenomegaly syndrome, Felty's syndrome is the only other condition known to be associated with a diffuse lymphocytic infiltration of the hepatic sinuses. Although we have not seen this pattern of lymphoid infiltration of the liver in Felty's syndrome we have seen a severe infiltrate of lymphoid cells in the sinuses of the liver in a number of conditions, including infectious mononucleosis and hairy-cell leukæmia (leukæmic reticuloendotheliosis).[2-5] An identical pattern of hepatic sinusoidal infiltration may also be seen in cases of malignant histiocytosis (histiocytic medullary reticulosis).[5] The cells in the sinuses in cases of infectious mononucleosis and in hairy-cell leukæmia appear cytologically benign, while the infiltrated histiocytic cells in malignant histiocytosis have malignant cytological features. The sinusoidal infiltrates in all these disorders may be heavy despite the fact that the number of these cells in the peripheral blood may not be increased or may even be low.

It is important for the pathologist to recognise that a number of benign as well as malignant disorders may be associated with a similar pattern of hepatic infiltrate. The reason for this pattern of infiltration in the liver is obscure.

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TRANSFER FACTOR IN MULTIPLE SCLEROSIS

SIR,—Dr Poser (June 19, p. 1352) and Dr Fog and Dr Duquette (July 10, p. 99) have commented on our trial[6] of transfer factor in multiple sclerosis; the points raised need clarification. Dr Poser claims that, once the disease process (i.e., plaque formation) is set in motion, it becomes irreversible. This is pure speculation.

The duration of the trial was chosen because if transfer factor caused the arrest and elimination of the putative demyelinating agent, it is most likely that some effect would have been detected by the methods we used in examining our patients. To be sure, one can never be certain that, if the trial had continued for several years, an effect might not be observed. This approach, whilst suitable for grantmanship, does not in any way invalidate the design of this study.

The criticism that the doses of transfer factor were too small seems unnecessary when, with each of the three injections, we gave five times the concentration of transfer factor stated to confer delayed hypersensitivity.

I would repeat, therefore, that further trials of transfer-factor therapy in multiple sclerosis are unwarranted until we know more about the disease and about transfer factor itself.

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