

electric field containing a preformed pH gradient. The antigen was found to focus in two discrete zones corresponding to two isoelectric points. The zones in which focusing occurred were at pH 3.95 and 4.90 for the *ay* subtype of hepatitis B antigen and pH 3.62 and 4.33 for the *ad* subtype. Both zones were free of serum proteins and were found to contain intact 22 nm spherical particles characteristic of this antigen when examined by immune electron microscopy. The results reveal a difference between the two major subtypes in the pH values at which electrofocusing occurs, although one of these zones may contain material common to both subtypes. Further studies on the chemical multiformity of hepatitis B antigen may enhance the detection potential of available serological tests for the antigen, including the preparation of purified reagents for radioimmunoassay.

Radioimmunoassay, which combines the specificity of antigen-antibody interaction with the sensitivity of radioisotope detection, is the most sensitive technique currently available for detecting hepatitis B antigen. Comparative tests have shown that the sensitivity of radioimmunoassay is 2000 to 10 000 times greater than immunodiffusion for detection of antigen and 10 000 to 1 000 000 times more sensitive than immunodiffusion for detection of antibody. The specificity of the technique was confirmed by concentrating serum which was positive only by radioimmunoassay and examination by electron microscopy after negative staining.

#### Human Lymphocyte Antigens as a Possible Diagnostic Aid in Ankylosing Spondylitis

M. CAFFREY, D. A. BREWERTON, F. D. HART, AND D. C. O. JAMES (*Blood Transfusion Unit, Westminster Hospital, London*) To aid the diagnosis of ankylosing spondylitis in patients a study of a genetic parameter was made.

Human lymphocyte antigens were determined for 85 unrelated ankylosing spondylitic patients using a standard lymphocytotoxicity test. Twenty-six human lymphocyte antigens were studied and significant differences were observed between the frequency of the HL-A 27 in ankylosing spondylitic patients (95%) and normal controls in a Caucasian population (5%).

The finding that the antigen HL-A 27 appears to have a higher frequency among certain isolated communities, where there is a greater incidence of ankylosing spondylitis than in others, lends support to the above observation. Likewise, its low frequency among negroid populations, which have a very low incidence of this disease, is also of interest.

The presence of HL-A 27 among these patients

with such a high frequency suggests that the observation could be used as a diagnostic aid.

#### Some Interesting Serological Findings in Patients with Epilepsy

P. HAMILTON (*City Hospital, Aberdeen*; introduced by R. J. L. DAVIDSON) The chance observation in our laboratory that apparently false positive screening tests for infectious mononucleosis (IM) could occur in epileptic patients prompted us to undertake this study of 119 epileptic and 62 non-epileptic control patients from the same long-stay hospital. Investigations included peripheral blood examination, immunoglobulin analysis, direct Coombs, LE-latex, and three commercially available IM slide tests. Differential absorption and EB virus antibody tests were performed on selected groups.

Positive IM slide tests were obtained in 35 (29%) of the epileptic patients compared with seven (11%) in the control group. None of these positively reacting patients had a positive differential absorption test nor a white cell pattern diagnostic of infectious mononucleosis. Further, their age distribution was not typical of the clinically manifest disease. The multiplicity of anticonvulsant drug regimens made analysis difficult but significantly about a third of patients receiving phenobarbitone and/or primidone had positive IM slide reactions. Twenty-eight of 35 (80%) IM-positive epileptic patients had raised IgG and/or IgM levels compared with 45 of 84 (53%) IM-negative epileptic patients. Very low IgA levels were found in 31 (26%) of the epileptic patients. The incidence of positive LE-latex tests was similar in both epileptic and non-epileptic groups: of the 18 positively reacting sera 16 had raised IgM levels. EB virus antibody titres were generally higher in those patients with positive rather than negative IM tests.

The importance of recognizing the high incidence of false positive IM slide reactions in patients receiving anticonvulsants is emphasized. Some of the implications of the overall findings, including their possible relevance to an immunosuppressive effect of anticonvulsant drugs, are briefly discussed.

#### An Assessment of Acid and Alkaline Phosphatase Determinations in the Diagnosis of Prostatic Cancer

D. M. GOLDBERG AND G. ELLIS (*The Royal Hospital, Sheffield*) Serum acid phosphatase (AcPase) was routinely measured by the method of Ellis, Belfield, and Goldberg (1971) on 389 patients grouped as follows: (a) untreated carcinoma of prostate (45 cases); (b) treated carcinoma of prostate (22 cases); (c) benign prostatic hypertrophy—biopsy positive