

ANTIGENIC SPECTRUM OF WATER-SOLUBLE LIVER PROTEINS  
FROM PATIENTS DYING FROM EPIDEMIC HEPATITIS  
IN THE STAGE OF ACUTE ATROPHY

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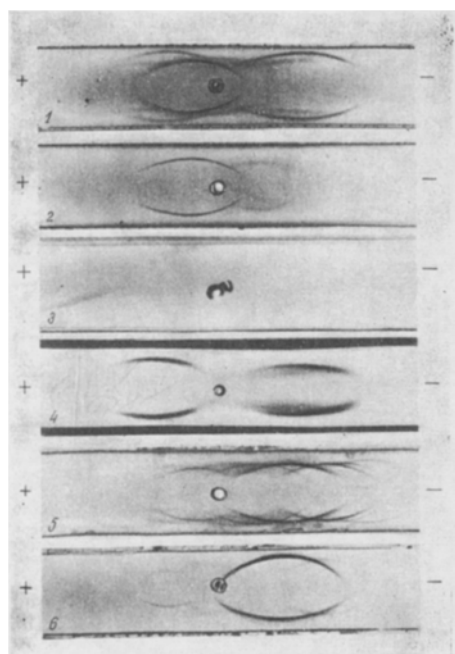
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The object of this investigation was to study the antigenic composition of the water-soluble proteins of the liver tissue from patients dying from epidemic hepatitis in the stage of acute atrophy.

EXPERIMENTAL METHOD

The material for the investigation consisted of the liver from 3 patients with epidemic hepatitis (clinical and pathological diagnosis) dying from acute liver atrophy.

The usual method of immunoelectrophoretic analysis of the water-soluble liver tissue proteins was used [1-2]. After careful perfusion with a large volume of physiological saline through the blood vessels, the liver tissue was cut into small pieces and ground in a mortar at 1-2°. The proteins were extracted with isotonic sodium chloride solution (pH 8.8) in the proportion of 1 : 1. After 24 h the extract was clarified by prolonged centrifugation at 10,000-12,000 rpm and at 1-2°. Electrophoretic fractionation of the extract was performed in 1% Difco agar at a voltage gradient of 5 V/cm for 2 h. Development of the stains produced by electrophoresis was carried out by means of the serum of rabbits immunized with extract of liver tissue from the patients dying from acute hepatitis in the stage of acute atrophy. To obtain an antiserum with a high titer of antibodies, Freund's adjuvant was used. Usually a mixed antiserum (from several rabbits) after immunization for 4-5 months was used. To detect tissue and organ-specific proteins, the antiserum was exhausted with serum proteins and proteins of other organs (spleen, kidney, lungs, heart). The serum proteins were determined by means of antiserum against human serum.



Immunoelectrophoresis of liver extract from a person dying from epidemic hepatitis in the stage of acute atrophy (1-4) and from a person dying from trauma (5-6). Development: 1) liver antiserum; 2) liver antiserum exhausted with donor's serum protein; 3) liver antiserum exhausted with donor's serum protein and proteins of other organs (kidney, spleen, lungs, heart); 4) antiserum against donor's serum; 5) liver antiserum exhausted with blood serum protein; 6) liver antiserum exhausted with donor's serum protein and proteins of other organs (kidneys, spleen, heart, and lungs).

## EXPERIMENTAL RESULTS

The immunoelectrophoretic analysis showed that the extracts of liver tissue from patients dying from epidemic hepatitis contain 8-9 antigenically different proteins (Fig. 1). Most were proteins identical with serum proteins (4). Especially clear precipitation bands were found in the regions of the albumins and  $\gamma$ -globulins. Four tissue proteins were found in the extract, but only one of them, with an electrophoretic mobility almost identical with that of serum  $\alpha$ -globulin, gave a clear precipitation band, and the other three were hardly visible. During detection of the organ-specific proteins, one very weak precipitation band was found in the cathode region (3), which hardly showed up on the photograph.

Comparison of the results of immunoelectrophoresis performed in the same way on an extract of liver tissue from cadavers of healthy persons dying from trauma (5, 6) showed that in patients with epidemic hepatitis in the stage of acute atrophy, a sharp decrease in the content, and possibly even the total disappearance, of tissue proteins, including organ-specific proteins, takes place.

## LITERATURE CITED

1. L. A. Zil'ber and G. I. Abelev, *The Virology and Immunology of Cancer* [in Russian], Moscow (1962).
2. P. Grabar and P. Burtin, *Immunoelectrophoretic Analysis* [Russian translation], Moscow (1963).