plague confirmed information on its immunological identity with a variant virus of low virulence isolated from it. The results obtained with the fowl plague virus are in agreement with those recorded by Pyl. The stability patterns appear to be useful in the identification of the virus of Newcastle disease and of fowl plague.

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Effect of Gamma Globulin on Circulating Human Complement

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It has been shown by Davis, Kabat, Harris, and Moore (*1*) that the gamma globulin fraction of human serum separated by electrophoresis displays the same tendency to interfere with the activity of alexin as do globulin solutions prepared by other methods. These investigators noted that this effect was diminished or reversed by the addition of albumin and certain other serum proteins. However, since human gamma globulin is being used clinically for the prevention and modification of rubeola and infective hepatitis and has been under study as a therapeutic agent in scarlet fever, it appeared important to ascertain whether patients treated with this material exhibited any changes in the complement levels of their sera. This clinic has participated in a study of the therapy of scarlet fever with human gamma globulin, and the opportunity to study this question thus presented itself.

METHODS

Normal gamma globulin was furnished by Sharp and Dohme. This fraction was prepared under the direction of E. J. Cohn and his associates in the Department of Physical Chemistry, Harvard Medical School, from pooled human plasma collected by the American Red Cross. Only lots containing 45 or more units of streptococcal antierythrogenic antibody/ml. were employed. In the course of other investigations with this material it was found to be anticomplementary in the test tube even after the addition of considerable amounts of human albumin (*2*). As stated previously, in the hands of Davis and his colleagues, human albumin decreased or abolished the inactivating effect of globulin on alexin. It is probable, therefore, that the preparation administered in this study was anticomplementary in high titer. Nine patients, whose weight exceeded 60 pounds, received intramuscular injections of 60 ml. of the globulin, while one child weighing 50 pounds was given 50 ml.

Blood was obtained prior to the administration of globulin and at 2-, 4-, 8-, 12-, 16-, 20-, 24-, 36-, and 48-hour intervals thereafter. In each case, one specimen was omitted, withdrawal of blood being avoided in the hours after midnight. However, the schedule was so arranged that no interval was consistently neglected. The sera were separated immediately after bleeding and promptly frozen. Complement titration was carried out with sheep erythrocytes and rabbit amboceptor, 2 units of amboceptor being added to 0.5 ml. of 5 per cent sheep erythrocytes. Determinations were made in saline containing .01, .02, .03, .04, .05, .06, .07, .08, .09, .10, .20, .30, .40, and .50 ml. of the serum being tested, respectively. All tubes contained a total volume of 2.5 ml. and were incubated for one hour at 37°C. before reading. On the basis of rather extensive experience with this method it has been found that the alexin titer (50 per cent hemolysis) of human serum is usually 0.03–0.04 ml. It has been shown repeatedly with this technique that in certain diseases the complement titer may be depressed to 0.10 ml. or more (*5*).

RESULTS

The sera of the 10 patients examined before, and at frequent intervals for 48 hours after, the injection of normal gamma globulin all contained normal levels of complement; 0.04 ml. or less produced 50 per cent hemolysis regularly. Thus, no difference could be detected between control and postglobulin injection alexin titers.

DISCUSSION

Because of its high antibody content (*2*), human gamma globulin is being used as a prophylactic and therapeutic agent in certain diseases (*4*). In light of the known complement-binding character of this material, the sera of patients injected with globulin were examined for alexin levels. No change was demonstrated. In view of the albumin content of human serum, the dilution by the circulating blood, and possibly the relatively slow rate of absorption following intramuscular injection, it is not surprising that gamma globulin, in the dosages usually employed, produced no demonstrable alteration in complement activity when administered intramuscularly to man. If preparations suitable for intravenous injection become available, the possibility that they may produce complement depression when administered by this route should merit investigation.

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