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A comparison of the action in patients of g-strophanthin and digitalis.By **ALFRED E. COHN** and **ROBERT L. LEVY**.*[From the Hospital of The Rockefeller Institute for Medical Research, New York.]*

In the same patients we have compared the action of g-strophanthin given intravenously with the action of digitalis (digipuratum) given by mouth. Both drugs were standardized by the cat method. One cat unit equalled 0.1 mgm. g-strophanthin; one cat unit was equal to 0.1 gm. of digipuratum. The patients selected for treatment were as far as possible sufferers from fibrillation of the auricles. Both drugs were usually given in divided doses, the duration of administration being in several instances comparable.

The effect of the drugs on the speed of action, on the electrocardiogram, and on the duration of the effect on the rate of the ventricles when the auricles fibrillate, we report in brief now. The speed of the action is often faster with strophanthin than with digitalis, though when strophanthin is given in divided doses it may require nearly two hours to obtain an effect. In other instances an effect may be obtained, as is well known, in twenty minutes or less. An effect with digitalis has been observed in a little more than two hours.

With digitalis the effect on the rate of the ventricles outlasts that of strophanthin. It is rare for strophanthin to keep the rate low for more than five days; it did so once for nine days. Digitalis effect endures usually beyond ten days and has lasted as long as twenty-three days.

The effect on the T-wave of the electrocardiogram is absent or slight with strophanthin, and its duration when present transient. The effect with digitalis endures in the manner now familiar. With doses equal, in cat units, to the strophanthin given, the effect on the T-wave is not maximal. Larger doses of strophanthin than 1.1 mgm. were not given, so that the dose of

digitalis in this series was usually low (1.1 gm.). When on occasion we gave larger doses of digitalis, more striking effects on the T-wave were observed.

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The isoagglutinins and isohemolysins of the rat.

By **G. L. ROHDENBURG** (by invitation).

[*From Columbia University, George Crocker Special Research Fund, F. C. Wood, Director.*]

The possibility that some of the irregularities in immunity against transplanted tumors might be correlated with the isoagglutinins or isohemolysins of the respective hosts prompted an investigation of these substances in the blood of rats. The animals tested were derived from three different sources showing rather marked external as well as biological differences. One group, pure white in color, was resistant to the growth of the Jensen rat sarcoma, showing a very high percentage of natural immunity; a second group, red and white in color, was equally resistant to the growth of the Flexner-Jobling rat carcinoma; a third group, hooded black and white, was equally susceptible to both tumor strains.

Fifty animals were tested in the following manner for the presence of either isoagglutinins or isohemolysins. Nine drops of serum were mixed with one drop of a 5 per cent. suspension of washed red cells in a test tube. In the first series of ten animals the serum of each animal was tested against the cells of every other animal, and the cells of each animal were tested against the serum of every other. Five series were carried through in this fashion, each series consisting of three animals of two of the groups and four of a third group.

Tests between animals of the same strain or between animals of different strains showed that neither agglutinins or hemolysins were demonstrable, this being contrary to the well-established phenomena in man, where four distinct groups have been found.