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EFFECTS OF OUABAIN ON K AND NA CONCENTRATIONS IN RESTING RABBIT AURICLES. P. N. Witt and R. S. Tuttle*. Dept. of Pharmacology, State Univ. of N.Y., Upstate Medical Center, Syracuse, N. Y.

A relationship was sought between dose of cardiac glycoside and its K depleting effect. In control experiments left rabbit auricles incubated for 2 hours at 37°C in Tyrode's solution gradually lost K (31%) and gained Na (202%) as determined in the digests by flame photometry. Ouabain 10^{-7} produced, in beating auricles, a steady increase in contractility. In resting auricles it diminished the 2 hour K loss to 13% while Na concentration was not above controls. 10^{-5} ouabain which produced failure in beating auricles in 30 minutes decreased intracellular K concentration in 2 hours 54% and increased intracellular Na 202%. These results can be interpreted as meaning that a low or "therapeutic" glycoside concentration prevents K loss which is observed under control experimental conditions. On the other hand concentrations of ouabain which are toxic deplete the auricles of K and allow Na entry into the cells. These effects of different concentrations of ouabain may explain discrepancies in the literature. (Supported by a grant from the American Heart Association).