LETTERS TO THE EDITOR

Ambonestyl (2-Diethyl aminoethyl-*i*sonicotinamide) on Cardiac Cellular Potentials

SIR,—Lanzoni and Clark[1] have reported that 2-diethyl aminoethyl-*iso*nicotinamide (Ambonestyl) is as active as its analogue, procainamide (Pronestyl) in controlling ventricular arrhythmias in dogs. They stated that Ambonestyl did not depress cardiac conduction, nor raise the diastolic threshold for electrical stimulation and produced only a small increase in refractory period. Thus in antiarrhythmic doses it would have none of the therapeutic disadvantages of procainamide. Clark and Etsten[2] have reported the successful clinical use of Ambonestyl in the treatment of patients with ventricular arrhythmias.

However, Sjoerdsma and others[3] found the protective dose in experimental cardiac arrhythmias in dogs and cats varied from 3 to 30 times the corresponding dose of procainamide and also Ambonestyl was much less active therapeutically.

Weidmann[4] and Johnson[5] have shown that quinidine and procaine amide produce characteristic changes in the membrane action potential of myocardial fibres. The dominant feature being a reduction in the maximum rate of depolarisation which they believe to be due to an interference with the "sodium carrying" system. Following the method previously described[4], we failed to observe effects on the guinea pig ventricular action potential comparable with those due to a concentration of 100 μg./ml. of procainamide until a concentration of approximately 500 μg./ml. of Ambonestyl was attained. At this concentration an increase in diastolic threshold and decrease in conduction velocity were invariably observed. No qualitative difference was noticed between the effects of procainamide and Ambonestyl on the action potential. The results were from 7 experiments.

These results give support to those of Sjoerdsma and others[3] for if procainamide and Ambonestyl were equi-active as antiarrhythmic drugs as suggested by Lanzoni and Clark[1] our present findings that Ambonestyl has approximately one-fifth activity of procainamide would lead to the conclusion that hypotheses relating antiarrhythmic potency directly to changes in the membrane action potential[4–6] are incorrect.

One of us (E.A.J.) wishes to acknowledge a grant from the Life Insurance Medical Research Fund of Australia and New Zealand, which provided animals and all equipment.

The authors are grateful to Messrs. E. R. Squibb & Sons of New York for a free gift of Ambonestyl used in this work.

E. A. JOHNSON.
P. A. ROBERTSON.

Department of Pharmacology,
University of Sydney,
N.S.W., Australia.

September 1, 1957.

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