

Electrophysiological effects of verapamil on primary and transitional pacemaker cells of the frog heart

Morales, M.

Hernández, D.

Ladrón de Guevara, R.

Guerrero, S.

1. 1. In spontaneously beating preparations of sinus venosus of the frog *Caudiverbera caudiverbera* the electro-physiologic effects of verapamil on action potential parameters of both primary and transitional pacemaker cells were investigated. 2. 2. Verapamil in concentrations ranging from $5 \times 10^{-8}M$ to $2 \times 10^{-8}M$ slowed the sinus rate and blocked impulse initiation. Action potential blockade was accompanied by oscillations of membrane potential and depolarization. 3. 3. During blockade of primary pacemaker cells, pacemaker shift originated the activation of transitional or atrial contractile fibres. 4. 4. Subthreshold concentrations of the drug to induce complete blockade ($5 \times 10^{-8}M$) allowed to observe a greater depression of bioelectric cell characteristics in primary than in transitional fibres. 5. 5. Verapamil-induced blockade of transitional pacemaker action potentials was preceded by the appearance of a notch in their upstroke and the persistence of a fast depolarizing section that