The effect of aqueous extract of Croucus sativus on the basic and functional electrophysiological properties of isolated perfused rabbit AV-Nodal preparation

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Abstract

Background&Objective: Herbal remedies are suitable alternatives for synthetic drugs due to their availability, minimal side effects and lower price. Biologically active substances of plant origin represent an essential branch of modern cardiovascular pharmacotherapy. The aim of the present study was to determine concentration-dependent effects of aqueous extract of Croucus sativus on the nodal basic and functional properties.

Materials&Methods: This was an experimental study. Male Newsland rabbits (1-1.3 kg) were used in all of experiments; various experimental stimulating protocols (WBCL, Recovery, Facilitation, Fatigue) were applied to assessing electrophysiological properties of Node in two groups (first group n=10 and second group n=7). We used isolated preparation including some post up AV-nodal tissue preparation. All protocols were repeated in the presence and absence (control) of different concentration ($A=9\times10^{-2}$, $B=19\times10^{-2}$, $C=28\times10^{-2}$ mg/l) of Croucus sativus and verapamil (0.1μM). Results were shown as Mean±SE and a probability of 5% was taken to indicate statistical significance.

Results: Our results showed concentratration dependent depressant effects of extract of Croucus.s on Wenchebach Cycle Length (WBCL), AV Conduction Time (AVCT), Functional Refractory Periods (FRP).Rate-dependent properties such as Facilitation and fatigue significantly increased by 19×10^{-2} mg/l of Croucus.s. The effect of extract was prominent on fast pathway.

Conclusion: The above results indicated potential antiarrhythmic effect of Croucus.s in treating supraventricular tachyarrhythmia.

Key Words: Croucus sativus- Isolated AV-node- Arrhythmia- Herbal drugs