Research Journal of Pharmacognosy (RJP) 4(Supplement), 2017: 10

First Iranian Pharmacognosy Congress; Nov 29-30, 2017

Abstract

Inhibitory effects of *Urtica dioica* L. root on electrophysiological properties of isolated rabbit atrioventricular node

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Background and objectives: The ideal drug for treatment of a wide range of supraventricular arrhythmia hasn't yet been developed. Previous studies have shown antihypertensive and negative inotropic effects of the *Urtica dioica* L. (nettle). Therefore, the aim of present study is to determine the rate dependent inhibitory effects of ethanol extract of nettle root and investigate the role of adrenoceptors in the anti-arrhythmic mechanism of nettle on the isolated rabbit atrio-ventricular node. **Methods:** *Urtica dioica* roots were collected from Gorgan (Golestan, Iran). Male New Zealand rabbits (n=7) were used in all of the experiments. Experimental stimulation protocols (WBCL; Recovery, Facilitation, Fatigue) were applied to assess electrophysiological properties of Node. All protocols were repeated in the presence and absence (control) of different concentration (0.25-0.5 w/v %) of nettle and 1 μM nadolol. Data were shown as Mean±SE, difference between groups statistically were assessed by SPSS software. **Results:** Nettle (0.5 w/v) significantly decreased basic and functional properties of node as WBCL, ERP, FRP, AVCT and magnitude of fatigue (ΔAH) significantly increased but ΔFRP significantly decreased. In the presence of nadolol (1μM) as a nonselective β-blocker, nettle (0.3 mg/L) could not repeat its effects on electrophysiological properties of AV-node. **Conclusion:** The results showed the modifying properties of *Urtica dioica* root extract. It may be considered as a candidate for the treatment of supraventicular arrhythmias.

Keywords: adrenoceptors, arrhythmia, AV-Node, functional properties, *Urtica dioica*

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