P11 EFFECTS OF QUERCETIN AND NARINGENIN ON CONTRACTILITY OF ISOLATED RATS THORACIC AORTA

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Quercetin and naringenin are the flavonoids found in various types of plants and plant products. Recently, quercetin present in dietary supplements. Flavonoids are known to associated with decreased risk of cardiovascular heart disease (CHD). In this study, the effects of quercetin and naringenin on contractility of isolated rats thoracic aorta in the absence of endothelium were investigated. The thoracic aortic strips were isolated from male Wistar rats (250-300 g) , denuded the endothelium layer and the contractility responses were measured isometrically. Our results showed that quercetin (50 μM-1 mM) and naringenin (50 μM-3 mM) significantly inhibited the contraction induced by phenylephrine (PE 10^{-5} M) and KCl 40 mM. In addition, both quercetin and naringenin (500 μM) significantly inhibited the contraction induced by phenylephrine (PE 10^{-5} M) in Ca^{2+} free Krebs-Henseleit solution. Quercetin (500 μM), but not naringenin (500 μM), significantly inhibited the contraction induced by caffeine 10^{-2} M. Furthermore, quercetin and naringenin (500 μM) suppressed an increase in the resting tone in aorta (IRT) as well as suppressed $CaCl_2$ –induced contraction in high K^+,Ca^{2+} free solution.

In conclusion , quercetin and naringenin may affect vascular contractility involving several mechanisms. Ones of the mechanisms may involve the interference on Ca^{2+} entry into smooth muscle cells and intracellular Ca^{2+} mobilization.

Key Words: Quercetin, naringenin, calcium, vascular smooth muscle