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WIDARAT SUKKAMOLRAT : EFFECTS OF ANDROGRAPHOLIDE, PIPERINE, AND ROHITUKINE ON THE CONTRACTION OF HUMAN ISOLATED UMBILICAL ARTERIES AND VEINS. THESIS ADVISOR : ASSO. PROF. DR. PRASAN DHUMMA-UPAKORN, Ph.D. 81 pp. ISBN 974-634-869-8

Andrographolide is a member of lactone compounds isolated from leaves of Thai medicinal plant, *Andrographis paniculata* Wall.ex Nees. Piperine is a main alkaloid of *Piper nigrum* Linn. and rohitukine is a main pure cromone alkaloid that extracted from *Dysoxylum crytobotryum* Miq. The effects of these compounds on the contraction of isolated human umbilical arteries and veins were investigated. Acetylcholine and NE ($2x10^{-6}$M) produced only a slight vasoconstriction comparing with 5-HT and histamine ($2x10^{-6}$M) which produced strong vasoconstriction and were significantly reduced by ketanserin and chlorpheniramine respectively in Krebs-Henseleit solution. Andrographolide ($3x10^{-4}$M) significantly reduced contraction of umbilical arteries and veins induced by 5-HT and histamine ($2x10^{-6}$M) . In the lower dose ($3x10^{-5}$M) andrographolide significantly reduced only the contraction of umbilical arteries induced by histamine ($2x10^{-6}$M) . Piperine ($1.5x10^{-5}$M and $3x10^{-5}$M) significantly reduced contraction of umbilical arteries and veins induced by histamine ($2x10^{-6}$M) and also piperine ($3x10^{-5}$M) significantly reduced contraction of both vessels induced by 5-HT ($2x10^{-6}$M). Rohitukine ($3.69x10^{-4}$M) significantly reduced contraction of umbilical arteries and veins induced by 5-HT and histamine ($2x10^{-6}$M) but in lower dose ($3x10^{-5}$M) showed variable increase contraction of umbilical vessels. Due to the previous studies of these compounds on the other smooth muscles it could be suggested that their machanism on umbilical vessels may not mediated via specific receptor and may probably due to interference with Ca^{2+} influx through membrane calcium channels. These results could be considered for clinical application.

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