ドーパミン硫酸抱合体の心血管系に及ぼす薬理学的作用.

竹尾　聰，田野中浩一，阿南美奈子，平賀聖子

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Pharmacological Actions of Dopamine Sulfoconjugate on Cardiovascular System

Satoshi TAKEO, Kouichi TANONAKA, Minako ANAN, Seiko HIRAGA

Pharmacological actions of dopamine 4–sulfate on the cardiovascular system were examined and compared with those of dopamine. Dopamine 4–sulfate, used in the present study, was minimally contaminated with dopamine (less than 0.02%). Dopamine 4–sulfate at doses ranging from 0.1 to 1 μmol/kg did not elicit any appreciable changes in systemic blood pressure and heart rate of anesthetized rabbits. Contractile activity and heart rate of isolated perfused rat heart were also unaffected by the agent. Dopamine 4–sulfate at concentrations of 1 and 0.3 mM, induced a signifficant contraction of isolated rabbit renal and femoral arteries, respectively, but not in the aorta. The extent of the increase in tension development induced by 1 mM dopamine 4–sulfate in the femoral artery, was almost similar to that induced by 3 μM dopamine. The maximal tension development induced by 1 mM dopamine 4–sulfate in the femoral artery occurred more slowly than that induced by 3 μM dopamine. Furthermore, dopamine 4-sulfate–induced increase in tension development, like that of dopamine itself, was inhibited by 0.3 μM phentolamine and 0.1 μM haloperidol. Any appreciable conversion of dopamine 4–sulfate into dopamine was not seen in the medium of the organ bath in vitro during the experiment. The results suggest that dopamine sulfoconjugate exerts little effect on the cardiovascular system and, if any, induces a constriction of some vascular beds without conversion into dopamine.

抄録　ドーパミン４－スルフェートの心血管系に及ぼす薬理学的作用を検討し，ドーパミン４－スルフェートの0.1－１μml/kgの用量では麻酔家兎の全身血圧，心拍数になんら影響を及ぼさなかった。収縮力と心拍数には摘出心臓においても影響がなかった。ドーパミン４－スルフェートの１－0.3mMで家兎摘出腎動脈と大腿動脈の収縮を認めた。この作用強度はドーパミンのそれの１／300 程度であった。結果はドーパミン４－スルフェート自体では心血管系に対してほとんど影響を及ぼさないことを示唆した。