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论著

原矛头蝮蛇毒的抗凝作用

李亚男[1,2], 孙黔云[2]

1. 贵州大学生命科学学院, 贵州 贵阳 550025;
2. 贵州省中国科学院天然产物化学重点实验室, 贵州 贵阳 550002

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摘要 目的 研究原矛头蝮蛇毒(PMV)对血液系统的作用。方法 将PMV 0.2 mg·kg^{-1}一次性尾静脉注射给予SD大鼠。注射后0.5, 1, 3, 6和24 h分别取下腔静脉血,制备抗凝全血、抗凝血浆和富血小板血浆(PRP)。利用血细胞计数板对抗凝全血和PRP进行血小板计数;将抗凝血浆用生理盐水稀释5倍,在412 nm测定血红蛋白含量;采用凝血酶时间(TT)、凝血酶原时间(PT)、活化部分凝血活酶时间(APTT)和纤维蛋白原(FIB)含量测定试剂盒分别测定抗凝血浆的TT, APTT, PT和FIB含量;用发色底物法测定抗凝血浆酶切发色底物S-2251的活性。给昆明小鼠一次性尾静脉注射PMV 0.28 mg·kg^{-1},在0.5, 1, 3, 6和24 h测定尾部出血时间。结果 给予PMV 0.2 mg·kg^{-1} 30 min大鼠抗凝全血血小板计数减少至正常对照组的1/3(P<0.01),PRP中血小板计数减少至正常对照组的1/20(P<0.01),抗凝血浆血红蛋白含量增加约6倍(P<0.01);给予PMV 6 h APTT明显延长(P<0.05),3和6 h TT明显延长(P<0.01),1和3 h PT明显缩短(P<0.01);FIB含量和抗凝血浆酶切发色底物S-2251的活性无明显变化。给予小鼠PMV 0.28 mg·kg^{-1} 30 min小鼠尾部出血时间达(2341±742)s,较正常对照组小鼠(81±11)s明显延长(P<0.01),1 h逐渐缩短(P<0.01),24 h仍未恢复至正常水平(P<0.05)。结论 PMV具有明显的抗凝作用。

关键词 原矛头蝮蛇毒 血小板 凝血功能

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Anticoagulation effect of *Protobothrops mucrosquamatus* venom

LI Ya-nan[1,2], SUN Qian-yun[2]

1. College of Life Sciences, Guizhou University, Guiyang 550025, China;
2. Key Laboratory of Chemistry for Natural Products, Guizhou Province and Chinese Academy of Sciences, Guiyang 550002, China

Abstract

OBJECTIVE To investigate the effect of *Protobothrops mucrosquamatus* venom (PMV) on the hematological system. **METHODS** A single dose of PMV 0.2 mg • kg^{-1} was injected to rats by tail vein. After 0.5,1,3,6 and 24 h, the anticoagulant whole blood, anticoagulant plasma and platelet rich plasma (PRP) were prepared. The platelets were counted with a hemocytometer in whole blood and PRP. Anticoagulant blood plasma was diluted with saline water, while the hemoglobin level was determined through 412 nm absorbance value. The thrombin time (TT), activated partial thromboplastin time (APTT), prothrombin time (PT), and fibrinogen (FIB) were assayed with kits. The activity of the plasminogen activator was assayed by hydrolyzed S-2251. The bleeding time of mice was measured with a single dose 0.28 mg • kg^{-1} of PMV. **RESULTS** Compared with normal control group, platelet count in whole blood decreased to 1/3 (P<0.01) and platelet count in PRP decreased to 1/20 (P<0.01) in groups that received PMV. The hemoglobin level rose significantly (P<0.01) at 30 min point, APTT was significantiy prolonged at 6 h point (P<0.05), TT was significantly prolonged at 3 and 6 h points (P<0.01), and PT was significantly shortened at 1 and 3 h points (P<0.01). The content of FIB and activity of plasminogen activator had no obvious change. The tail bleeding time of mice which received PMV was (2341±742)s at 30 min point, longer than (81±11)s of the control group(P<0.01), but was