Antithrombotic effect of PMC, a potent alpha-tocopherol analogue on platelet plug formation in vivo.

許準榕
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Abstract

Platelet thrombi formation was induced by irradiation of mesenteric venules with filtered light in mice pretreated intravenously with fluorescein sodium. PMC (2,2,5,7,8-pentamethyl-6-hydroxychromane; 20 &mgr;g/g, i.v.) significantly prolonged the latent period of inducing platelet plug formation in mesenteric venules. When fluorescein sodium was given at 10 &mgr;g/kg, PMC (20 &mgr;g/g) delayed occlusion time by about 1.7-fold. Furthermore, aspirin (250 &mgr;g/g) also showed similar activity in delaying the occlusion time. On a molar basis, PMC was about 14-fold more potent than aspirin at delaying the occlusion time. PMC was also effective in reducing the mortality of ADP-induced acute pulmonary thromboembolism in mice when administered intravenously at doses of 5 and 10 &mgr;g/g. In addition, intravenous injection of PMC (5 &mgr;g/g) significantly prolonged bleeding time by about 1.6-fold compared with normal saline in severed mesenteric arteries of rats. Continuous infusion of PMC (1 &mgr;g/g/min) significantly increased the bleeding time by about 1.6-fold and the bleeding time was also significantly prolonged for up to 90 min after cessation of PMC infusion. These results suggest that PMC has an effective antiplatelet effect in vivo and may be a potential therapeutic agent for arterial thrombosis, but must be assessed further for toxicity.