

**Attenuation of thrombosis by crude rice (*Oryza sativa*) bran policosanol extract: Ex Vivo platelet aggregation and serum levels of arachidonic acid metabolites**

**ABSTRACT**

Background. Vascular occlusion or thrombosis was often attributed to uncontrolled platelet activation. Influence of sugarcane policosanol extract on platelet was reported but little was known of rice bran policosanol, particularly its mechanisms of actions on platelet activities. Objective. Antiplatelet mechanisms of rice bran policosanol extract (RBE) were studied using hyperlipidemic Sprague Dawley rats. Ex vivo platelet aggregation, platelet count (PC), bleeding time (BT), and coagulation time were assayed. Serum eicosanoids and other aggregation-related metabolites levels were quantified. Design. Rats were divided into 6 groups for comparisons (vehicle control Tween 20/H<sub>2</sub>O, high dose policosanol 500mg/kg, middle dose policosanol 250mg/kg, low dose policosanol 100mg/kg, and positive control aspirin 30mg/kg). Results. Low dose 100mg/kg of RBE inhibited aggregation by  $42.32 \pm 4.31\%$  and this was comparable with the effect of 30mg/kg aspirin,  $43.91 \pm 5.27\%$ . Results showed that there were no significant differences in PC, BT, and coagulation time among various groups after RBE treatment. Serum thromboxane A<sub>2</sub> was attenuated while prostacyclin level increased upon RBE treatment. Conclusions. RBE reduced ex vivo ADP-induced platelet aggregation without giving adverse effects. No changes in full blood count suggested that rice bran policosanol did not disturb biological blood cell production and destruction yet it reduced aggregation through different mechanisms.