ANTITHROMBOTIC EFFECT OF CAPTOPRIL AND ENALAPRIL IN YOUNG RATS

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Angiotensin converting enzyme inhibitors (ACE-Is) are the main drugs used in the treatment of essential hypertension and congestive heart failure in adults. Recently, we have demonstrated the antithrombotic effect of captopril (CAP) and enalapril (ENA) in venous thrombosis model in adult rats. One might also suggest the beneficial effect of those drugs on hemostasis in young individuals. Two months old male Wistar rats were used in the study. Acute administration of CAP at a dose of 50 and 100 mg kg\(^{-1}\) significantly reduced the venous thrombus weight. Dose-dependent reduction in the thrombus weight was also observed in ENA (3, 10, 30 mg kg\(^{-1}\))-treated rats. Strong reduction in the thrombus weight was also seen after chronic administration of CAP (2 × 25 mg kg\(^{-1}\)) and ENA (1 × 15 mg kg\(^{-1}\)). Both drugs given chronically reduced the frequency of thrombi. Systolic blood pressure was reduced to similar extent after acute and chronic application of the drugs. CAP shortened euglobulin clot lysis time (ECLT) when given acutely (100 mg kg\(^{-1}\)) and chronically (2 × 25 mg kg\(^{-1}\)). ENA decreased ECLT only when given at multiple doses (1 × 15 mg kg\(^{-1}\)). None of the drugs changed prothrombin time or activated partial thromboplastin time. We conclude that CAP and ENA possess antithrombotic effect in young individuals. Activation of the fibrinolytic pathway seems to play an important role in the mechanism of their antithrombotic action.

Key words: angiotensin converting enzyme inhibitors, young rats, thrombosis, fibrinolysis

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