



# Association between PAI-1 polymorphisms and plasma PAI-1 level with sepsis in severely burned patients

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**ABSTRACT.** We investigated the association between plasminogen activator inhibitor-1 (PAI-1) polymorphisms and plasma PAI-1 level with sepsis in severely burned patients. A total of 182 patients with burn areas larger than 30% of the body surface area were enrolled in this study. Peripheral blood samples were obtained from 103 patients with sepsis (sepsis group) and 79 patients without sepsis (control group). An allele-specific polymerase chain reaction assay was used to determine PAI-1 polymorphism 4G/5G distribution. Plasma PAI-1 levels were detected using an enzyme-linked immunosorbent assay. The frequency of the 4G/4G genotype and the 4G allele frequency in the sepsis group were 42.7 and 62.1% respectively, which were significantly higher than those in the control group ( $P < 0.05$ ). Sepsis patients had a significantly higher plasma PAI-1 level than the control group ( $P < 0.05$ ). Compared

with the 5G/5G genotype, PAI-1 concentrations were significantly higher in the 4G/4G genotype ( $P < 0.05$ ). The study indicates that the 4G/5G promoter polymorphism of PAI-1 gene may be related to the susceptibility to burn sepsis and that the 4G/4G genotype may be an important genetic risk factor of burn sepsis. Additionally, PAI-1 concentrations in the serum are increased in patients with burn sepsis.

**Key words:** Burn; Plasminogen activator inhibitor-1; Polymorphism; Sepsis