

论著

抗血小板药物对缺血再灌注后一氧化氮合酶的影响

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摘要 目的:评价急性心肌梗死(acute myocardial infarction, AMI)再灌注后一氧化氮合酶(NOS)的变化及抗血小板药物对其影响。方法:中华小型猪24只,随机分成对照组、氯吡格雷与阿司匹林合用治疗组、替罗非斑治疗组和假手术组,每组8只。冠状动脉结扎3 h,松解1 h制备AMI再灌注模型。采用硝酸还原酶法检测AMI前、后和再灌注后血一氧化氮(NO)的含量;采用催化L-Arg法和逆转录-聚合酶链反应(RT-PCR)的方法观察正常、再流和无再流区心肌组织内NOS及其mRNA的表达。结果:(1)替罗非斑组可提高血NO水平($P<0.05-0.01$),增加再流区心肌组织中cNOS活性及其mRNA表达,减少再流区心肌组织中iNOS活性及其mRNA表达(均 $P<0.05-0.01$)。而氯吡格雷与阿司匹林合用不能提高血NO水平,增加再流区心肌组织中cNOS活性及其mRNA表达,仅能减少再流区心肌组织中iNOS活性及其mRNA表达。结论:替罗非斑可能通过保护内皮细胞起到了减少无再流的作用,而氯吡格雷与阿司匹林合用并不能保护内皮功能,仅能减轻再灌注后的炎症反应。

关键词 [血小板](#) [氯吡格雷](#) [替罗非斑](#) [一氧化氮合酶](#) [再灌注](#)

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The effect of antiplatelet drugs on nitric oxide synthase activity after coronary occlusion and reperfusion

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Abstract

AIM: This study was aimed to test the hypothesis that glycoprotein IIb/IIIa inhibitor may protect endothelium from injury through evaluating nitric oxide synthase (NOS) activity after coronary occlusion and reperfusion.
METHODS: Thirty-two mini-swines were randomized into 4 groups: 8 in control, 8 swines pretreated with aspirin-clopidogrel combination for 3 days, 8 given an intravenous bolus followed by continuous intravenous infusion of tirofiban, starting 30 min before occlusion and 8 in sham-operation. AMI and reperfusion model were created with three-hour occlusion of the left anterior descending coronary artery followed by one hour reperfusion. Normal, reflow and no-reflow zones were determined by thioflavin-S, Evans blue staining. Nitric oxide (NO) in blood sample, constitutive NOS (cNOS) activity and cNOS mRNA, inducible NOS (iNOS) activity and iNOS mRNA in the myocardium were evaluated by nitrate reductase method and reverse transcription-polymerase chain reaction (RT-PCR), respectively.
RESULTS: Tirofiban significantly improved the level of NO in blood sample ($P<0.05$, $P<0.01$), increased cNOS activity and cNOS mRNA expression, decreased iNOS activity and iNOS mRNA expression in the reflow myocardium (all $P<0.05$, $P<0.01$) after coronary occlusion and reperfusion. Aspirin-clopidogrel combination decreased iNOS activity and iNOS mRNA expression in the reflow myocardium, but it failed to significantly modify NO, activity of cNOS and its gene expression.
CONCLUSION: Tirofiban prevents endothelium from injury and reduces no-reflow by protecting endothelium, while aspirin in combination with clopidogrel does not.

Key words [Blood platelets](#) [Clopidogrel](#) [Tirofiban](#) [Nitric oxide synthase](#) [Reperfusion](#)

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