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应变显像舒张指数评价急性心肌梗死患者经皮冠状动脉介入治疗术后左心室舒张功能延迟恢复

Strain imaging diastolic index in assessment of left ventricular delayed relaxation after stent implantation in patients with acute myocardial infarction

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中文摘要:

目的 应用二维超声斑点追踪显像(STI)技术检测急性心肌梗死(AMI)患者经皮冠状动脉介入治疗术(PCI)后不同时期的左心室心肌应变指标的变化,探讨应变显像舒张指数(SI-DI)对定量评价再灌注后局部心肌舒张功能延迟恢复的临床应用价值。方法 选择40例AMI患者,分别在PCI术前、术后1天、7天及1个月接受超声心动图检查,应用二维应变显像技术测定缺血心肌及非缺血心肌的横向应变峰值(Speak)、应变峰值延迟时间(TPS)及SI-DI,并进行比较。结果 冠状动脉的急性闭塞会引起相应灌注区域心肌收缩及舒张功能的显著降低,与非缺血心肌相比较,缺血心肌的Speak显著降低,TPS明显延长,SI-DI显著降低($P < 0.05$)。PCI治疗7天及1个月后,与术前比较,缺血心肌的Speak明显升高,TPS明显缩短,SI-DI明显升高($P < 0.05$)。代表收缩功能的Speak和TPS两项参数在术后7天恢复至正常,而代表舒张功能的SI-DI在术后1个月恢复至正常。非缺血心肌的各项参数在各时期的改变无明显差异($P > 0.05$)。结论 SI-DI可用于评价AMI患者PCI术后左心室局部心肌舒张功能的延迟恢复情况。

英文摘要:

Objective To detect the changes of the left ventricular strain indicators in patients with acute myocardial infarction (AMI) after stent implantation by two-dimensional speckle tracking imaging (2D-STI), and to assess the clinical value of strain imaging diastolic index (SI-DI) in evaluation on regional myocardial delayed relaxation after reperfusion. **Methods** Totally 40 patients with AMI underwent echocardiography before, 1 day, 7 days and 1 month after percutaneous coronary intervention (PCI). Transverse peak strain (Speak), delayed time to peak strain (TPS) and strain imaging diastolic index (SI-DI) with strain imaging in both nonischemic segments and ischemic segments were measured and compared. **Results** Acute coronary artery occlusion would result in significant deterioration in regional myocardial systolic and diastolic function. Compared to nonischemic myocardium, Speak of ischemic myocardium significantly reduced, TPS significantly prolonged, and SI-DI significantly decreased (all $P < 0.05$). Speak of ischemic myocardium significantly increased, TPS significantly shorten, and SI-DI increased 7 days and 1 month after PCI (all $P < 0.05$). Though systolic deformation parameters Speak and TPS returned to normal after 7 days, the diastolic deformation parameter SI-DI of ischemic myocardium returned to normal after 1 month. No significant difference of the parameters in non-ischemic myocardium was found. **Conclusion** SI-DI can be used to evaluate the left ventricular delayed relaxation or diastolic stunning in patients with AMI after PCI.

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