Microdialysis technique has been first developed for monitoring neurotransmitter release in the brain. We have applied this technique to the heart and monitored myocardial interstitial levels of endogenous substances including norepinephrine, serotonin, and their metabolites during myocardial ischemia-reperfusion. Cardiac microdialysis technique is a powerful tool for investigating the pathological changes within the ischemic region during myocardial ischemia-reperfusion. Advantages of using microdialysis technique during myocardial ischemia-reperfusion are following: 1) simultaneous monitoring myocardial interstitial levels of endogenous substances in both ischemic and non-ischemic regions of the heart; 2) continuous monitoring in the ischemic region during ischemia as well as after reperfusion; 3) local administration of pharmacological agents into the ischemic region without systemic effects. Although microdialysis technique has several disadvantages, cardiac microdialysis technique has been widely used at present. In this session, we would like to explore advantages of using microdialysis technique during myocardial ischemia-reperfusion by showing practical data.