INTRODUCTION

Acute myocardial infarction with ST-segment elevation is caused by the rupture or erosion of an atherosclerotic plaque, initiating intraluminal thrombosis resulting in partial or complete occlusion of a coronary artery. ***(DeWood et al. 1980) , (Falk et al. 1983) & (Davies et al. 1984).***

Primary percutaneous coronary intervention (PCI) is the preferred treatment for myocardial infarction with ST-segment elevation and is effective in opening the infarct-related artery. ***(Zijlstra et al. 1999),(Keeley et al. 2003),(Silber et al. 2005)***

However, microvascular obstruction with diminished myocardial perfusion occurs in a large proportion of patients with a patent epicardial vessel after primary PCI, and this event is associated with an increased infarct size, reduced recovery of ventricular function, and increased mortality. ***(Van 't Hof et al 1998),(Van 't Hof et al. 1997),(Stone et al. 2002),(McLaughlin et al. 2004),(Poli et al. 2002)***

Microvascular obstruction is related to the embolization of plaque or thrombotic material downstream in the infarct-related artery. ***(Topol et al. 2000),(Kotani et al. 2002)***

Embolization can occur spontaneously or by means of mechanical fragmentation during PCI. ***(Topol et al. 2000),(Kotani et al. 2002),(Henriques et al. 2003)***

One coronary angiographic technique to assess the perfusion in the myocardial tissue is the myocardial blush grade. ***(Van 't Hof et al. 1998),(Stone et al. 2002),(Poli et al. 2002)***

In clinical practice, electrocardiographic (ECG) analysis of the degree of resolution of ST-segment elevation after PCI is often used. ***(Van 't Hof et al. 1997),(Poli et al. 2002) & (McLaughlin et al. 2004).***

The high frequency of suboptimal myocardial reperfusion after primary PCI has resulted in the development of various devices to protect the microcirculation. ***(Napodano et al. 2003)***