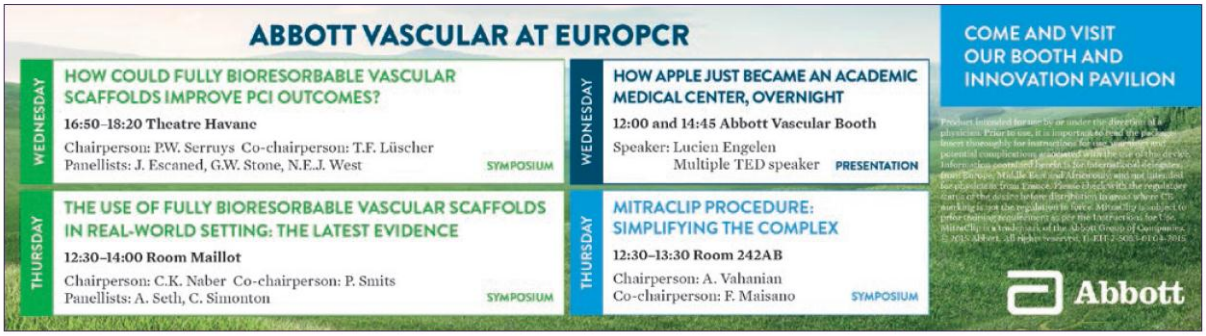

15:45-16:45

Room 243

Innovation HUB

A successful experimental model for intimal hyperplasia prevention using a Resveratrol eluting balloon.(Valerio Tolva; Silvia Mazzola; Pietro Zerbi; Renato Casana; Gianfranco Parati; Francesca Selmin; Francesco Cilurzo)

Abstract: Purpose. Restenosis due to intimal hyperplasia (IH) is a major clinical problem that compromises the success of angioplasty and endovascular surgery. The pathogenesis of restenosis is multifactorial, involving events such as endothelial injury, inflammation, platelet activation, and hyperplasia of the intima, primarily as a result of vascular smooth muscle cell (VSMC). Resveratrol (RV) is a polyphenolic phytoalexin produced by grapes and other plants in response to infection of injury. RV has a demonstrated beneficial effect on restenosis from angioplasty. The molecular structure of RV, unfortunately, reduces its immediate clinical application. Methods. To obtain a sterile injectable solution we worked on the solubility of RV and its viscosity. In order to avoid fast shifting of the RV in the blood stream after intimal delivering we searched for a high viscosity solution. TSP, a well-known biocompatible polymer, was used to conferee a suitable cinematic viscosity to the vehicle for the administration by drug eluting balloon. Thirty-six male New Zealand white rabbits, weighting 2.8 to 3.6 kg, were assigned randomly and in equal numbers to different study groups. To induce and establish intimal hyperplasia in the rabbit iliac artery we performed a traumatic angioplasty with an angioplasty catheter and dedicated devices (GenieTM Acrostak, Geneve, CH) were used to locally deliver the novel Resveratrol compound (RV-c). Results and conclusions. Genie® catheter has been applied in rabbits vessels and the local delivery has resulted effective in reducing the restenosis both after POBA and stenting. As a matter of fact, RV-c forced in the artery wall by balloon expansion might accumulate in the interstitials and/or within cells avoiding the wash-out occurring of solutions. In our experience magnification micrographs showed a significant inhibition of vSMC proliferation when RV-c has been applied moreover no adverse events has been documented both in vitro and in vivo studies.