The ongoing MESAMI translational research program.

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Purpose: Despite the improvement of pharmacological and surgical therapies, the mortality related to ischemic heart failure remains high. During the last years, bone marrow-mesenchymal stem cell (BM-MSC) therapy has been proposed as a novel approach for the prevention and therapy of heart failure. Intramyocardial injection allows concentration of grafted cells within the injured zone. However, a major problem of with intraparenchymal route of administration is the early death of most of grafted cells. The goal of the MESAMI program is to evaluate the effect of intramyocardial administration of BM-MSC preconditioned or not with the pineal hormone melatonin in ischemic cardiomyopathy.

Methods and Results: Our preclinical investigations have designed a pre-conditioning strategy of BM-MSCs with the melanotin that significantly increases survival and efficacy of grafted cells in animal models of myocardial ischemia. Melatonin treatment significantly ameliorates the detrimental effects of BM-MSC on the recovery of cardiac function. In the mean time, we started a phase I clinical trial in patients with severe ischemic cardiomyopathy and no option of revascularization, using the NOGA XP system to guide injections into the myocardium. Based on our basic research results, we are developing a multicenter phase II trial on the effects of intramyocardial administration of melanotin-preconditioned BM-MSC in patients with chronic ischemic cardiomyopathy.

Conclusion: The ongoing MESAMI program is representative of a translational research program in France.

Impact of immediate coronary angiography and new reanimation techniques in cardiac arrest patients.

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Background: Prognosis of patients surviving having an out-of-hospital or an in-hospital cardiac arrest is still very poor. Immediate coronary angiography with successful angioplasty has shown to improve prognosis of these patients. Nevertheless this strategy in the setting of new reanimation techniques using hypothermia or cardiac assistance has not yet been evaluated.

Aim: To evaluate the impact of coronaryography and ad hoc angioplasty on survival rate.

Methods: The Pitié-Salpêtrière registry included 328 consecutive patients who survived a cardiac arrest and were transferred to the cath-lab for emergency coronary angiography followed by ad-hoc PCI and state of the art critical care techniques. We present here intermediate results with the follow up of 223 consecutive patients.

Results: Most (65.7%) cardiac arrest survivors had angiographic coronary artery disease (at least one lesion >70%), with an attempted angioplasty in 49.1% of the total patients and in 75% of patients with coronary artery disease. Angioplasty was successful in 82.4% of attempted PCI. Total hospital survival rate was 43.8% when it was 45.7% in patients with CAD and 40.8% in patients without CAD, p=0.1 with non adjusted HR 1.29 (95% CI 0.71-2.3). Survival rate was 48.3% in patients with successful PCI and 40.6% in patients without PCI or PCI failure, p=0.3 with non adjusted HR 1.29 (95% CI 0.81-1.9). Complete follow up of the cohort is pending.

Conclusions: Two third of cardiac arrest survivors present with angiographic coronary artery disease and undergo 75% of attempted PCI. In this

Impact of successful PCI on survival n=223

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