

# Improved Survival of Cardiogenic Shock Patients After High-Risk Coronary Interventions under Portable Cardiopulmonary Bypass Support



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## Background

Infarct-related cardiogenic shock patients and elective very high-risk patients benefit from circulatory support when undergoing percutaneous coronary intervention (PCI). Various methods of percutaneous circulatory support have been evaluated previously. However, the results are still under debate.

## Objectives

We report on the first multi-center series of patients receiving temporary circulatory and pulmonary support with a portable cardiopulmonary bypass device (PCPB) in the catheter laboratory.

## Methods

A prospective, consecutive enrollment study was conducted to gather demographic, procedural, and discharge data of patients being treated with the novel “plug-and-play” PCPB system LIFE BRIDGE B2T. Patient diagnostic codes, procedural codes, hemodynamic data and survival rate were analyzed.

Femoral arterial (14-17F) and venous cannulation (17-21F) was used to connect the patient’s circulation to the device which automatically eliminates air. Up to 6 l/min flow can be provided without any specially trained personnel.

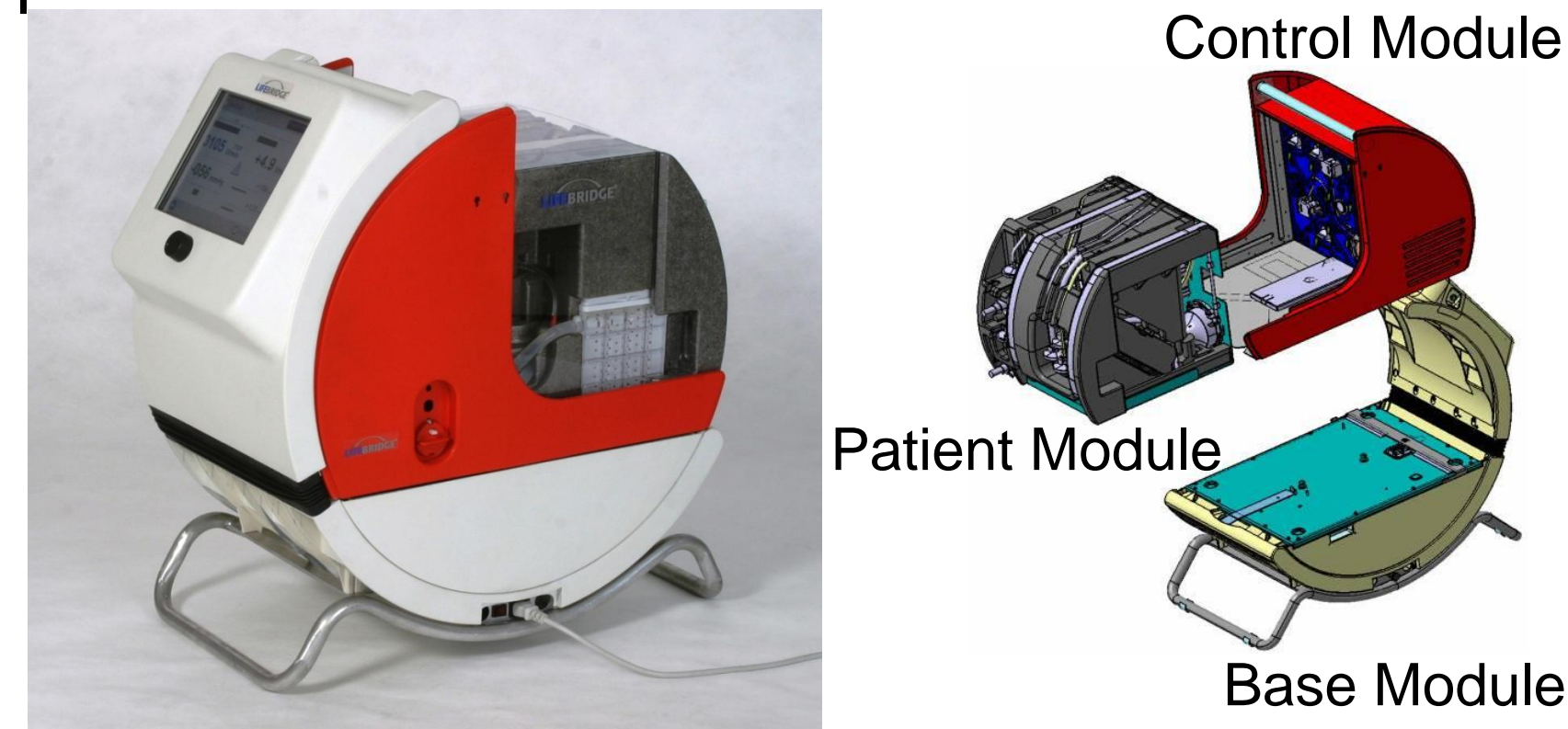


Fig.1) A novel, plug-and-play, portable percutaneous Cardio-Pulmonary Bypass System, LIFE BRIDGE B2T®.

5 patients (36 %) were scheduled for elective high-risk PCI for left main disease. 2 patients also underwent aortic valvuloplasty. 13 patients survived, 12 pts were either discharged or survived seven days after treatment. One cardiogenic shock patient died during intensive care stay after being successfully treated in the cath lab. Mean duration of PCPB support was 187 min., range 20-918 min.. During high-risk PCI a normal arterial blood pressure could be preserved:

	mean art. BP [mmHg]
Pre	76 (+/- 25)
After 30 min	79 (+/- 18)
Procedure End	77 (+/-21)

Tab.2) Hemodynamic performance during high-risk PCI

No device-related severe adverse events were reported and especially no relevant bleeding complication or leg ischemia occurred.

## Conclusions

In this early experience, PCPB provided a safe and effective bridge for interventional therapy and improved survival for these high risk patients. Further studies should evaluate the appropriate indications and algorithms for use of PCPB in the catheter laboratory.

## Results

We included 14 pts with severe coronary artery disease who underwent high-risk PCI in 2 centers under PCPB.

Age	79 +/- 9 years
NYHA III or IV	86%
LVEF	44% (+/-19%)
AMI	64%
Cardiogenic Shock	57%

Tab.1) Patient characteristics