

# Pilot experience of a network organization through hospitals for the advanced treatment of the cardiogenic refractory shock with veno-arterial ECMO

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## **Introduction**

More than 30% of patient with acute myocardial infarction autonomously arrive to the Emergency Department and choose the hospital according to the closeness, not to the medical services. In these conditions, the onset of a cardiogenic shock refractory to medical therapy could become life threatening and the patients could not get access to the advance treatment with short term mechanical circulation supports.

## **Materials and Methods**

This study is a clinical pilot experience realized between January 2016 and December 2018 involving Intensive Care and Cardiosurgery units of L. Sacco hospital in Milan. The aim was to analyze the collaboration through Lombardia's hospitals with different technological levels in order to offer an advanced treatment with veno-arterial ECMO also in first level centers. A therapeutic protocol was elaborated as a model of "sharing network" based on common diagnostic and therapeutic strategies.

The experience was based on the activity of a "shock team", 24h/24 ready to get to first level centers, to start veno-arterial support and then centralize the patient at the L.Sacco hospital.

## **Results**

In the period of observation, 12 patients have been assisted with v-a ECMO and 7 of them reached the weaning. In 5 cases this hasn't been possible: 3 died during ECMO, in a third level center where they were transferred one died and another is survived after weaning. The mean period in v-a ECMO was 7 days, the mean recovery in Intensive Care unit was 17 days, the mean of hospitalization was 20 days.

## **Discussion and Conclusion**

This experience shows that a network organization allows to assure advanced treatments in patients with refractory cardiogenic shock also in a first level centre.

From regional database, it can be assumed that about 50-80 patients for year could benefit from the shock team intervention in Lombardia: they would switch from an almost absolute death to a more than 60% rate of survival.