extracorporeal life support, who have the greatest chance of being weaned from mechanical support and discharged from the hospital.

Methods: A retrospective study of 127 consecutive patients undergoing ECMO in a single centre from January 2010 to December 2019. All of them were devided into 6 groups according to the indications for ECMO application: 1- postcardiotomy heart failure (n=63, 49,6%), 2- cardiopulmonary resuscitation (n=26; 20,5%), 3- cardiac graft dysfunction (n=22; 17,3%), 4- end-stage heart failure/mechanical bridge to heart transplantation (n=9; 7,1%), 5- acute respiratory failure (n=6; 4,7%), 6- high-risk percutaneous coronary intervention (n=1; 0,8%).

Results: Time of mechanical circulatory support in groups: 1- 6,9±6,1 days, 2- 5,1±2,5 days, 3- 5,6±4,4 days, 4- 12±8 days, 5- 6,7±3,6 days, 6- 22,5 hours. Survival to decannulation: 1- 52,4%, 2- 77,3%, 3- 61,5%, 4- 66,7%, 5- 83,3%, 6- 100%. Survival to discharge or transfer from the hospital: 1- 41,3%, 2- 59,1%, 3- 50%, 4- 66,7%, 5- 66,7%, 6- 100%. The main causes of fatal outcomes are multiple organ failure, sepsis, bleeding, DIC, pneumonia, cerebrovascular accident.

Conclusions: Our clinical experience shows a higher survival of patients with veno-venous ECMO and with ECMO as a mechanical bridge to heart transplantation. The lowest survival rate for patients with postcardiotomy low cardiac output syndrome. Improving the survival of patients with ECMO is one of the main tasks for physicians. We still need more data on ECMO therapy contraindications, management and complications. It is also necessary to develop and implement a clinical protocol for ECMO application, accumulate some experience in its use, conduct round-the-clock monitoring of the patient's condition, timely prevention, diagnosis and treatment of complications.

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Preliminary results of extracorporeal cardiopulmonary resuscitation (eCPR) program in University Hospital Olomouc

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Objective: We sought to evaluate our initial experience with the eCPR for in-hospital and out-of-hospital refractory cardiac arrest.

Methods: Retrospective analysis of a cohort of 14 patients (male 10, female 4, mean age 55.1±17.3 year) who had been accepted for V-A ECMO support for refractory in-hospital (71 %) or out-of-hospital (29 %) cardiac arrest since February 2018 to December 2019. All patients were cannulated peripherally, mainly percutaneously (78 %), under angiographic (55 %) or ultrasound guidance (22 %), with secured distal leg perfusion. Cardiac arrest was predominantly caused by acute MI (36 %) or massive PE (28 %), in minority by intoxication (14 %), decompensated aortic stenosis (7 %), accidental deep hypothermia (7 %), and electrical storm (7 %).

Results: The mean cardiac-arrest-to-start-ECMO time was 57.3±21.8 minutes. 4 patients underwent PCI, 4 patients cardiac surgery (LV wall rupture repair, aortic valve replacement, pulmonary embolectomy, and thoracic sympathectomy), and 1 patient arrhythmogenic substrate ablation, while being on the support. An overall support length reached 61.6±17.5 hours, and 11 patients (79 %) were successfully weaned off. The mean in-hospital stay reached 17.5±16.2 days and finally, 6 patients (43 %) were discharged home with good neurological outcome (CPS 1,2). During the follow-up, 30-day, 3-month, and 1-year survival rate was 57 %, 43 %, and 43 % respectively, with 7 in-hospital deaths (4 diffuse brain oedemas, 2 sepsis, and 1 vasoplegic shock), and 1 late out-of-hospital death (CHF). No device-related complications occurred, however, in 1 case, arterial cannula misplacement with subsequent massive cannula-related haemorrhage needed to be surgically resolved. In survivor group significantly lower lactate (8.5 vs. 12.9 mmol/l, p=0.04) and higher ATIII levels (54.5 vs. 35.1 % p=0.02) at the commencement of the support were analysed.

Conclusions: The achieved results justify further development of eCPR program established on tight interdisciplinary cooperation and strict logistics rules.

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Importance of establishing continuing education on an ECMO program

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Objective: To evaluate the impact of investing in professional training and the improvement of equipment on the rate of weaning off and patient survival with ECMO.