MODELING OF THE CARDIO-PULMONARY SYSTEM ASSISTED BY ECMO

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Methods

- Lumped parameter model:
  o 6 “boxes” for the cardio-vascular system
  o 2 “boxes” for the respiratory system
  o 1 “boxes” for the ECMO
- Pulmonary shunt, the acid-base chemistry of CO2/HCO3- and Bohr effect are considered

Results

- Simulation of a patient with pulmonary insufficiency assisted by ECMO.
- ECMO allows to decrease the CO2 partial pressure and to increase the blood pH to physiological values.