Introduction:
Categorizing reasons for death after eCPR is important for comparing outcomes to other studies, assessing benefits of interventions, and better define this heterogeneous patient collective. A categorizing for death after cardiac arrest in both in-hospital (IHCA) and out-of-hospital (OHCA) arrests has been proposed in non-eCPR patients by Witten et al. Here, we adopt this categorization to eCPR patients.

Methods:
Single-center, retrospective, cohort study of patients without ROSC after IHCA or OHCA and eCPR between 2010 and 2017. Patients with survival below 24 hours were excluded. Patients were allocated to one of five predefined reasons for death.

Results:
231 va-ECMO patients were included (age 58.6±14.3, 29.9% female, 58% eCPR, 30 day survival 42.9%). Reasons for death for patients with va-ECMO for shock (survival 53%) and eCPR (36%) were: neurological withdrawal of care (10% vs 25%), comorbid withdrawal of care (18% vs 4%), refractory hemodynamic shock (16% vs 33%), respiratory failure (3% vs 2%), and withdrawal due to presumed patient will (0% vs 1%). The differences in reasons for death among the two groups were significant (p <0.001), driven by withdrawal due to neuroprognostication, comorbidity and hemodynamic instability.

Conclusion:
Categorizing death after va-ECMO into five categories is feasible. There are significant difference between patients with va-ECMO for shock and eCPR. Interestingly, only a quarter of patients after eCPR died due to brain damage.
Mode of death in VA-ECMO Patients and patients after ECPR