

Isoflurane sedation in patients undergoing VA-ECMO treatment for cardiogenic shock – an observational propensity-matched study

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Introduction: The feasibility and hemodynamic effects of isoflurane sedation in cardiogenic shock in the presence of extracorporeal membrane oxygenation (VA-ECMO) treatment is currently unknown.

Methods: Thirty-two cardiogenic shock patients with VA-ECMO treatment under sedation with volatile isoflurane on a cardiac intensive care unit have been enrolled in this retrospective single-center study and were matched by propensity score in a 1:1 ratio with intravenously (IV) sedated patients.

Results: Administration of isoflurane was associated with lower IV sedative drug use during VA-ECMO treatment (86% vs. 32%, $p=0.01$). Mean systolic arterial pressure was similar (94.3 ± 12.6 mmHg versus 92.9 ± 10.5

mmHg, $p=0.65$), but mean heart rate was significantly higher in the conventional sedation group, when compared to the isoflurane group (85.2 ± 20.5 / min vs. 74.7 ± 15.0 /min; $p=0.02$). Catecholamine doses, VA-ECMO blood and gas flow, ventilation time (304 ± 143 h vs. 398 ± 272 h, $p=0.16$), bleeding complications BARC3a or higher (59.3% vs. 65.3%, $p=0.76$) and 30-day mortality (59.2% vs. 63.4%, $p=0.80$) were similar in both groups.

Conclusions: Volatile sedation with isoflurane is feasible in patients with cardiogenic shock and VA-ECMO treatment and was not associated with higher catecholamine dosage or ECMO flow rate compared to IV sedation.

CPC score on ICU discharge

CPC score	Conventional (n)	Isoflurane (n)
CPC1	2	1
CPC2	2	1
CPC3	8	7
CPC4	3	4
CPC5	17	19

