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28th Annual Research Day

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May 2nd, 12:00 AM

### Clinical Outcomes for VA-ECMO Patients Associated with Hyperlipidemia: An Analysis of the National Inpatient Sample

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Pastore, Dakota B.; Elias, Tony; Beshai, Rafail; Girgis, Kyrillos; Daneshvar, Maziyar; and Anacker, Keith, "Clinical Outcomes for VA-ECMO Patients Associated with Hyperlipidemia: An Analysis of the National Inpatient Sample" (2024). *Rowan-Virtua Research Day*. 16.

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This table presents the outcomes, odds ratios, 95% confidence intervals (CI), and P-values for the associations between various conditions and hyperlipidemia among VA-ECMO patients.

# Clinical Outcomes for VA-ECMO patients Associated with Hyperlipidemia: An Analysis of the National Inpatient Sample

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## Background

- Veno-arterial extracorporeal membrane oxygenation (VA-ECMO) is considered the most advanced temporary life support which provides complete hemodynamic support in addition to gas exchange.<sup>1</sup>
- There is limited data available on the impact of hyperlipidemia (HLD) on VA-ECMO patients.

## Aims

- We sought to examine the National Inpatient Sample (NIS) database to describe in-hospital outcomes among these patients.

## Methods

- Data was extracted from the NIS Database for the years 2019 and 2020.
- The NIS was searched for hospitalizations of adult VA-ECMO patients with and without a concomitant diagnosis of HLD using international classification of diseases 10th revision codes.
- Multivariate logistic was used to adjust for confounders. The primary outcome was inpatient mortality.
- SPSS software was used for statistical analysis.

## Results

- This study included 3,885 VA-ECMO patients, of which 1,082 (27.8%) patients had HLD.
- VA-ECMO patients with hyperlipidemia had higher prevalence of hypertension (57.3% vs. 71.4%,  $p < 0.001$ ), and chronic kidney disease (26.3% vs. 17.0%,  $p < 0.001$ ) compared to VA-ECMO patients without HLD.
- In-hospital mortality was higher among those with HLD (61.5% vs. 45.5%  $p < 0.001$ ).
- Multivariate regression showed that VA-ECMO patients with HLD had higher inpatient mortality (OR 1.371, 95% CI 1.332-1.410,  $p < 0.001$ ).
- On secondary analysis it has shown that those patients had higher odds of having ventricular arrhythmia, acute kidney failure, intracranial hemorrhage, deep vein thrombosis (DVT), and sepsis compared to VA-ECMO patients without HLD (Table 1).

Outcome	Odds Ratio	95% Confidence Interval	P-Value
Ventricular Arrhythmia	1.472	(1.416 - 1.531)	< 0.001
Acute Kidney Failure	1.394	(1.359 - 1.429)	< 0.001
Intracranial Hemorrhage	1.157	(1.099 - 1.219)	< 0.001
DVT	1.252	(1.200 - 1.306)	< 0.001
Sepsis	1.226	(1.195 - 1.257)	< 0.001

**Table 1.** Odds ratio, 95% confidence interval, and p-values for various outcomes in VA-ECMO patients with HLD compared to VA-ECMO patients without HLD

## Conclusions

- In this nationally representative population-based retrospective cohort study, HLD was associated with higher mortality and worse outcomes among VA-ECMO patients.

## References

1. Tsangaris A, Alexy T, Kalra R, et al. Overview of Veno-Arterial Extracorporeal Membrane Oxygenation (VA-ECMO) Support for the Management of Cardiogenic Shock. *Front Cardiovasc Med.* 2021;8:686558. Published 2021 Jul 7. doi:10.3389/fcvm.2021.686558