

Category : **Glucose control**

**A127 - Assessment of insulin requirements and glycemic control in adult patients on extracorporeal membrane oxygenation.**

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**Introduction:**

Hyperglycemia is a known complication associated with poor patient outcomes in critically ill patients [1-2]. Current evidence on glycemic control and insulin (ins) requirements for patients on extracorporeal membrane oxygenation (ECMO) is limited to smaller retrospective studies. Prior studies reported glycemic control had no effect on mortality for pediatric or adult patients on ECMO despite finding higher rates of hyperglycemia [3-4]. Hyperglycemia has been associated with ECMO, but no further studies have evaluated ins requirements for patients on ECMO. Ins requirements and glycemic control were assessed in patients on ECMO at a level 1 trauma and academic medical center.

**Methods:**

This single-center retrospective analysis was conducted in adult patients who received ECMO for  $\geq 48$  hours between 1 June 2015 and 1 June 2023. The primary objective was the mean daily ins requirements while receiving ECMO support compared to mean daily ins requirements while not receiving ECMO support. Hypoglycemia was defined as blood glucose  $\leq 70$  mg/dL and hyperglycemia was defined as a blood glucose  $\geq 180$  mg/dL.

**Results:**

Preliminary analysis included 107 patients. Most patients required veno-venous ECMO (62%) for a mean duration of 10.2 days. At baseline, 17% of patients had diabetes. The mean daily ins requirements were higher in patients while receiving ECMO (26.7 units/day) compared to when off ECMO (10.9 units/day). Hypoglycemia occurred in 8 patients while receiving ECMO and 14 patients off ECMO. Patients on ECMO had an increased rate of hyperglycemia compared to when off ECMO (46.5% vs. 19.6%).

**Conclusion:**

Patients on ECMO had a higher rate of hyperglycemia, while receiving more ins compared to when off ECMO.

**References:**

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3. Lou S, et al. Pediatric Critical Care Medicine 16(3):p 270-275, March 2015.
4. Lou S, et al. J Extra Corpor Technol. 2010;42(4):281-285.