

Routine screening CT in V-V ECMO: Incidental Findings and Clinical Impact

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Argomento: ECMO

Rationale

Some centres carry out routine screening CT for patients receiving veno-venous ECMO (V-V ECMO) but evidence regarding the prevalence of extrathoracic findings and their clinical impact is limited.

Objectives

Describe extrathoracic findings on admission screening CT during V-V ECMO and evaluate the impact upon clinical decision-making and mortality.

Methods

Retrospective analysis of admission head, chest, abdomen and pelvis CT of patients who underwent V-V ECMO at a single high-volume centre between January 2011- September 2021.

Measurements

The contemporaneous, prospective reports from the attending consultant radiologist were reviewed and diagnostic findings documented. Electronic health records were reviewed for baseline demographics, admission physiological and laboratory data, clinical decision-making following CT and ECMO ICU mortality. Logistic regression (adjusted for Age, Sex and APACHE II score) and Kaplan-Meier curves (log-rank test) were used to evaluate associations between extrathoracic findings and ECMO ICU mortality.

Main Results

833 patients received V-V ECMO, among whom 761 underwent routine admission CT (91.4%). ECMO ICU length of stay was 19 days (IQR: 12-23) and ECMO ICU mortality was 18.9%.

An incidental extrathoracic finding was reported in 227 patients (29.8%), leading to an invasive procedure in 12 cases (5.3%) and a change in medical management (mainly in anticoagulation strategy) in 119 (52.4%). Extrathoracic findings independently associated with mortality on logistic regression were: intracranial haemorrhage (OR (95% CI): 2.34 (1.31, 4.12), cerebral infarction (OR (95% CI): 3.59 (1.26, 9.86) and colitis (OR (95% CI): 2.80 (1.35, 5.67)). Similar findings were found with the log-rank test.

Conclusions

Screening CT of the head, chest, abdomen and pelvis following cannulation for V-V ECMO frequently

identifies incidental pathology which is prognostic of outcome and often changes clinical management. ECMO centres should consider the utility of screening CT for patients receiving V-V ECMO depending on their case mix, feasibility and the resulting resource implications.



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