**Title:** Patient factors associated with evaluation and candidacy for extracorporeal membrane oxygenation support

**Background:** Extracorporeal membrane oxygenation (ECMO) is an intensive life-sustaining technology that can support patients in cardiopulmonary failure when conventional therapies have failed1,2. Clinicians are faced with limited data to guide prognosis and available literature has shown decisions to offer ECMO support can be inconsistent.3,4 Population-level evidence also supports disparities in factors such as gender, race, and insurance exist in the use of mechanical circulatory support, including ECMO5-7. Our aim was to examine these factors across patients considered for ECMO support and patients offered ECMO support within our medical system.

**Methods:** We performed a retrospective review of the University of Washington (UW) electronic medical record (EMR) for all charts containing ‘ECMO’, all UW transfer center calls flagged as ECMO referrals and all Heart Shock calls for 2022. All patients 18 years of age or older with adequate documentation of provider evaluation for ECMO support were included. The primary outcome was an offer of ECMO support, as determined by documentation of patient as an ECMO candidate or by the patient’s clinical plan of receiving ECMO support. Subgroups of patients considered for perioperative support, for veno-venous (VV) ECMO, and for veno-arterial (VA) ECMO were analysed separately. R-studio was used to perform categorical preliminary analyses.

**Results:** We identified 161 patients with documentation of evaluation for ECMO support. Of these, 88 patients (54.6%) were offered ECMO, and 69 patients (42.9%) received ECMO. A higher proportion of patients who were offered ECMO identified as White, and this unadjusted association was not significant (75.0% vs 68.5%, p =0.36). Female patients were also more represented among patients who were offered ECMO but this unadjusted association was likewise not significant (38.6% vs 30.1%, p = 0.26). Private insurance status was significantly associated with being offered ECMO (RR 1.62, 95% CI 1.05, 2.49, p=0.018). This association was consistent when evaluating subgroups of patients not in the perioperative period (RR 1.55, 95% CI 1.02, 2.34, p=0.022) but not present when examining patients considered for VV-ECMO only (RR 1.51, 95% CI 0.87, 2.62, p=0.113).

**Conclusions:** Preliminary analyses from a retrospective cohort of patients evaluated for ECMO support did not find a significant association between patient factors of White race or sex. Private insurance status was associated with ECMO support being offered. This association was present even outside of the perioperative period, but not present in patients considered for VV-ECMO. Further study of the role of payor status in ECMO referral pathways may help address disparities in how ECMO support is offered.

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