**Summary of our last Ethics for Lunch**
**The Ethical Challenges Surrounding Decisions for ECMO Initiation in the COVID-19 Pandemic**
Presented May 19, 2020

The May Ethics for Lunch addressed ethical challenges surrounding decisions for ECMO initiation in the COVID-19 pandemic, including those of shared decision making and communication with families who cannot be with their family members, how the healthcare team balances an uncertain prognosis and benefit of this technology with distributive justice and overutilization of hospital resources, and how the healthcare team has supported these patients’ families and managed their own distress caused by taking care of this patient population.

Summary of key points:

1. We began with a brief explanation of ECMO, which stands for extracorporeal membrane oxygenation, and is also referred to as extracorporeal life support. The role of venovenous ECMO is to take over for injured lungs. It is very resource intensive, with limited ECMO circuits and available personnel with the expertise to manage patients on ECMO.
2. ECMO was placed in a historical context. It was first used in the mid 1970s, mainly in neonates and infants, but interest in use of ECMO in adults grew during the H1N1 influenza in 2009. Unlike in 2009, as Ramanathan and coauthors note, this outbreak is occurring at a time when worldwide ECMO infrastructure and resources for education and research are considerably more evolved and organized. ELSO (extracorporeal life support organization) reports over 900 COVID-19 patients who have been placed on ECMO during the COVID-19 pandemic, over 600 of whom are in North America.
3. The panelists were asked to discuss the factors that they consider when receiving the Hopkins Access Line call to evaluate a patient for ECMO, and whether or not they felt that these factors had changed in the COVID-19 era. First, patients must be becoming refractory to conventional modes of ventilator support. All other possible medical interventions possible must have failed, and they must have signs of lung injury. Exclusions would include it being unsafe to cannulate for ECMO, and a low likelihood of improving and being able to be weaned from the circuit with good quality of life.
4. Conversations with the patient regarding initiation of ECMO are often not possible because of how sick they are, and must often be held with family members. This is challenging as family cannot be in the hospital with these patients, ECMO is a complex therapy to explain, and families must understand it is a heroic measure.
5. The cost of ECMO was discussed, including that of the circuit (around $2,000), 24-hour 1:1 care by nurses with specific ECMO training, and oversight by practitioners with experience with ECMO. This is balanced against the potential ability to help each individual patient.
6. The toll of caring for COVID-19 ECMO patients at the bedside was expounded upon, including the 1:1 nursing assignment, where the nurse is bedside in full PPE gear for most of a twelve hour shift, the extra training required for nurses that take care of ECMO patients (making such specialized nurses a scarce resource), and the labor-intensive nature of caring for such complex patients.
7. The difficulty of resource allocation when ECMO circuits are in short supply was discussed. 200 hospitals are currently participating in reporting ECMO utilization to ELSO, and approximately 50% of patients sick enough to be put on ECMO do not survive. Criteria for ECMO in the COVID-19 era were discussed in a multidisciplinary fashion, and an action plan was created for a potential shortage of ECMO circuits, including building 20 ECMO circuits in preparation. What has been found is that hospital capacity is a larger factor than the availability of ECMO circuits. With both ECMO and ventilator shortages, a critical action team would be activated and would determine which patients receive these therapies, and which patients would need to come off. Importantly, there is also an appeal process in place. Scoring systems can be helpful, but do not constitute the most important criteria for ECMO decisions.
8. The importance of multidisciplinary consensus building was discussed, and when a decision is reached that ECMO is no longer effective at facilitating patient care goals, a discussion with family is undertaken. Members of the healthcare team must feel heard and feel comfortable that their values are aligned with the decision. Bias must be actively fought against, whether it be based on race, gender, sexual orientation, or other factors Breaking the news that the patient will not survive, with or without ECMO, is devastating, and support must be provided to the patient, the family, and healthcare team.
9. The challenge of not having families at the bedside was discussed, including that they cannot see the patient in person, which makes it difficult to appreciate the severity of their loved one’s illness. Many patients cannot communicate their wishes, and did not communicate with their families beforehand, making decision-making more difficult for families. “Facetime” or “Zoom”and other means to communicate remotely is felt to be inferior to in-person conversations, but these methods are necessary during the pandemic.
10. As part of a shared decision making model, every effort is made to have frequent Zoom meetings with families (the Zoom aspect being unique to the COVID-19 era), and weekly meetings held to discuss goals of care. It is very time-intensive and an added layer of complexity is added by family not being at bedside, language barriers, and disagreement between family members over the best course of action.
11. We have tried to prevent, as much as possible, turning down patients who would die without ECMO due to lack of resources. In addition to building 20 ECMO circuits (we normally have around 6-7), all of the hospitals in the area with ECMO capability started a weekly phone call with plans to share resources and capacity. They agreed to transfer patients if ECMO beds are open at other hospitals.
12. The unique challenges of understanding ECMO were discussed. A loved one can be alive on this machine, and doing well, but die immediately if the machine is stopped, and this is very difficult to explain. There is no education currently or widespread knowledge of what ECMO entails (unlike CPR, for instance) and it can be near-impossible for families to know what to expect.
13. Healthcare workers are experiencing an especially high level of stress in the COVID-19 era. The current resources available for support were discussed. There are MEPRA-trained (Mindful Ethical Practice and Resiliency Academy) bedside nurses who are specially trained to facilitate moral conversations. An ethics consult can be placed if the entire healthcare team is experiencing moral distress. RISE (resiliency in stressful events) is a peer support group that can be reached on CORUS and can be helpful after the conclusion of a stressful event. MySupport was developed in the past two years and is a confidential employee counseling service. Hopkins is offering free access to the Calm app to give employees access to mindfulness practices. Moral Resilience Rounds are also happening weekly for clinicians to interact in a supportive community.

References:

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4. Kon AA, Davidson JE, Morrison W, Danis M, White DB; American College of Critical Care Medicine; American Thoracic Society. Shared decision making in ICUs: an American College of Critical Care Medicine and American Thoracic Society policy statement. *Crit Care Med*. 2016;44(1):188-201.