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Lessons learnt from the initiation of ECMO experience in Lebanon

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Introduction: At the start of every new extracorporeal membrane oxygenation (ECMO) center, safe and effective use of ECMO therapy requires unique institutional resources and strategies to optimize patient care and outcome. This is a report of the initial experience at the first ECMO center in Lebanon; the course of five patients is described, focusing on the monitoring considerations.[1–4] Lessons learnt help improve patient ECMO care, safety, and outcome.
Methods: Two adult cases treated with veno-arterial (VA) ECMO for refractory cardiac failure, and three neonates (two veno-arterial and one veno-venous (VV) ECMO) treated for refractory respiratory failure were retrospectively reviewed with special focus on both medical and mechanical complications.
Results: All complications were recognized early and managed successfully. The main complications encountered were: limb ischemia (1 patient), bleeding and clotting requiring circuit change (2 patients), overflow and aortic regurgitation (1 patient), hemolysis (1 patient), acute kidney injury and fluid overload (3 patients), patient–ventilator asynchrony, and technical problems (mainly related to cannula's positioning) (2 patients). In some instances, diagnosis was limited or delayed due to unavailability of monitoring tools, mainly multimodal coagulation studies. All five patients were successfully decannulated. Two patients died following decannulation and three patients were discharged home; one among them needed to go to a rehabilitation center for a few weeks before going back home.
Conclusion: Optimal monitoring tools such as cerebral and somatic near infrared spectroscopy, echocardiography, head ultrasound, and multimodal coagulation studies (activated clotting time, aPTT, antiXa, thromboelastogram, and others) would allow for early recognition of complications. This would prevent or at

least help anticipate catastrophic events, thus minimizing the impact of life-threatening complications and improving the quality of care and outcome. Furthermore, organizational structure with investment in training and technology is needed to optimize patient care.[5]

Keywords: ECMO, outcome, near-infrared spectroscopy, echocardiography, anticoagulation

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