Venovenous Extracorporeal Membranous Oxygenation Device-related Infections and Colonizations.

Guillemette THOMAS

Background: Venovenous extracorporeal membrane oxygenation (VV-ECMO) has become a widely accepted treatment option for life-threatening acute respiratory failure. The main objective of this study was to evaluate the incidence of infections and colonizations related to ECMO device in VV-ECMO adult patients.

Methods: We prospectively included all consecutive adult patients treated with VV-ECMO for at least 48 hours in our intensive care unit (ICU), from February 2013 to February 2015. At the time of ECMO removal, we systematically collected blood cultures, swabs on insertion cannula site and intravascular cannula extremities, and classified each ECMO according to infectious status: Uninfected/Uncolonized ECMO device (U-I/C ED), ECMO device colonization (ED-C) and ECMO device infection (ED-I). Impact on outcome was analyzed.

Results: Seventy-three patients underwent 77 VV-ECMO for a total of 1118 ECMO-days. The incidence of ECMO device infection (ED-I) was 7.2 per 1000 ECMO-days (8 events, 10.4%) including 5 ECMO device-related bloodstream infections (4.5 per 1000 ECMO-days). The incidence of ECMO device colonization (ED-C) was 23.3 per 1000 ECMO-days (26 events, 33.8%). No difference was observed between U-I/C ED, ED-C and ED-I, regarding ICU length of stay and mortality. We observed a longer ECMO duration (14 (9-24) days versus 7 (5-15) days respectively, $p < 0.05$) and a higher proportion of male patients (73.1% versus 53.5%, $p < 0.05$) in ED-C group compare to U-I/C ED group, respectively.

Conclusion: We performed a systematic analysis of ECMO device at the time of removal leading to the first description of incidence of ECMO device-related infections and colonizations. A larger effective could permit to identify associated factor to ECMO device infections and colonizations.