Study provides evaluation of new generation dual-lumen central venous catheter for neonatal ECMO

Abstract:

Objectives: The purpose of this study was to compare the newly designed dual-lumen venovenous catheter (VR13, OriGen Biomedical, Austin, TX) with the current dual-lumen catheter (VV12, OriGen Biomedical).

Methods: Five newborn lambs, 1 to 5 days old and weighing 4.2 ± 0.5 kg, were cannulated with the VV13 OriGen catheter and placed on extracorporeal membrane oxygenation (ECMO). ECMO flows were increased from 200 to 600 ml/min, with measurements taken after the changes. The experiment was then repeated using the VV12 catheter.

Results: Recirculation values were equal for both catheters. The pressure drop at the reinfusion port was equal for both catheters at 200 ml/min, increasing to 275 mmHg at 500 ml/min for the VR13 vs. 240 mmHg for the VV12 catheter.

Conclusion: These findings indicate that the VR13 catheter resulted in levels of recirculation equal to the VV12. Based on resistance measurements, we do not recommend the use of this new catheter beyond 400 ml/min until minor design changes are made.
Study provides evaluation of new generation dual-lumen central venous catheter for neonatal ECMO | 2