ELSA Extracorporeal Life Support Assurance

- Quantify VV Recirculation
- Measure Oxygenator Clotting
- Verify Delivered Blood Flow

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Maximizing ECMO Efficiency

Optimize ECMO Delivery with Delivered Pump Flow Verification, Recirculation Percentage and Oxygenator Clot Detection

VERIFY DELIVERED BLOOD FLOW

Pump (delivered blood) flow errors and recirculation can compromise ECMO delivery of oxygenated blood. The Transonic ELSA Monitor measures true delivered blood flow through ECMO tubing using "gold standard" transit-time ultrasound technology. By comparing actual delivered blood flow to the pump's reading, any flow limiting cause such as incorrect cannulation placement can be identified and corrected.

Delivered Flow is used to:

- Verify circuit flows;
- Determine flows with bridges or shunts;
- Determine the optimal pump flow setting with any cannula or configuration;
- Identify tubing flow restrictions that might cause hemolysis or over pressure within the circuit.

MEASURE OXYGENATOR CLOTTING

Clotting in the oxygenator is one of the major complications of ECMO. The challenge is to minimize oxygenator clotting while preventing bleeding in fragile patients.

With an injection of a small volume of saline the ELSA Monitor measures oxygenator blood volume to quantify early clot formation in the ECMO circuit oxygenator. Early detection and trending of clot formation in ECMO circuits allows a wider window of opportuity to perform oxygenator change-outs when needed.

OPTIMIZE ECMO THERAPY

With a single bolus of saline, the Transonic ELSA Monitor detects and quantifies recirculation. Measuring recirculation with the Transonic ELSA Monitor provides an intensivist with vital information about a patient. High recirculation during VV ECMO may indicate:

- Cannula misplacement;
- Hypo- or hypervolemia;
- Cardiac failure.

Knowing the amount of recirculation helps an intensivist establish the optimal pump setting to minimize the length of ECMO runs, optimize cannula position, and identify restricted flow due to hypo-volemia and/or cardiac failure.

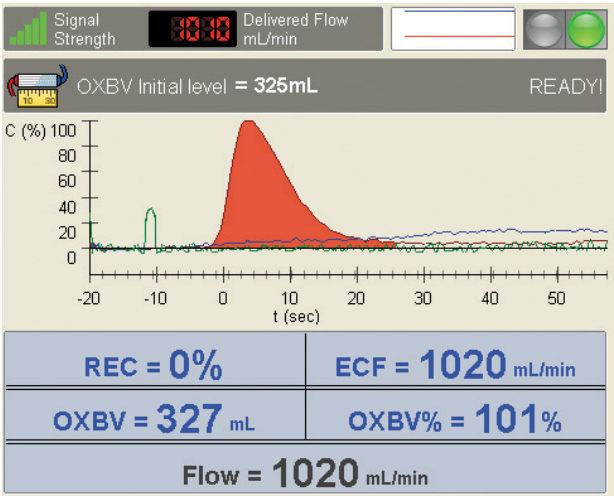

Fig. 1: Oxygenator Blood Volume (OXBV) plus Recirculation Results screen during VV ECMO.

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Transonic Systems Inc., global manufacturer of biomedical flow measurement equipment, sells "gold standard" ultrasound transit-time flowmeters, hemodialysis, endovascular and laser Doppler perfusion monitors worldwide to surgeons, nephrologists, interventional radiologists, researchers and original equipment manufacturers (OEMs).

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