MIMOSA

MULTISPECTRAL IMAGING IN PEDIATRIC LOW CARDIAC OUTPUT SYNDROME

Low cardiac output syndrome (LCOS) is a devastating complication of cardiac surgery. Tragically, it is the leading cause of morbidity and mortality in pediatric patients who have undergone a cardiac surgery. The key to preventing LCOS during the postoperative period is early recognition and timely intervention. Current measurement methods for cardiac output are lacking in accuracy, convenience, and validation, especially in the pediatric population... Until now.

The Problem

40,000 Children Born with CHD in US Annually - 1 Child every 15 mins

25% of infact with CHD will require surgery early in life

Cost of CHD in pediatrics in US $6 Billion

Low Cardiac Output Sydrome (LCOS) Impacts

12X Increased Mortality

30% Increased Cost of Care

2X Increased ICU Stay

LCOS typically occurs in 25-65% of children with congenital heart disease (CHD), 6-8 hours post-surgery. It contributes not only to mortality increase but also length of stay. Therefore, determining the risk factors of LCOS has clinical significance in the management of CHD. Early recognition of LCOS and early treatment are key to improving outcomes but recognizing the condition is difficult. Standard physical examination does not correlate well to cardiac outout and clinical opinions vary greatly. Invasive techniques (e.g. thermodilution catheters) are rarely used in pediatrics, and current non-invasive cardiac output monitoring systems are limited or largely unsuitable. Today, LCOS is generally detected by and defined through multiple signs of inadequate oxygen delivery to the organ systems providing a complex diagnosis. These signs include tachycardia, poor systemic perfusion, decreased urine output, elevated lactate, decreased mixed venous oxygen saturation, and elevated arterial to central venous oxygen saturation difference.

Multispectral Imaging

MIMOSA Pro is a handheld device that uses near-infrared light to accurately and non-invasively assess tissue health. It can be easily used by a patient or a caregiver, and the images produced will help inform the next steps within patient navigation and management.

EASE OF USE

Portable and lightweight technology fits easily into your workflow. Both doctors and nurses can use it!

SAFE / NO - TOUCH

Non-invasive and COVID safe with no injectable dyes resulting in zero patient contact.

ACCURATE

Precise visualization of oxygen saturation for faster assessments and healing trajectory predictions.

ANY SKIN TONE

40% Global Population is NOT Caucasian. Built in control for skin melanin content. Overcomes systemic racial bias in healthcare.

ANY HEALTH SETTING

Portability and miniaturization permits utility in any healthcare setting directly by the patients side.

INSIGHT

Tissue health is determined by expert clinicians based on vascularity and oxygenation. Delays or lack of understanding of tissue health can lead to wounds, amputation, or even death.

POINT OF CARE

A portable technology, driving efficiency and accuracy in the diagnostic capabilities of clinicians. The magic of this technology is that its skin pigment, clinical specialty, and care setting agnostic - hence providing equitable access.

RISK PROFILE

A means to track and document patient progress to improve clinical outcomes and mitigate risks early.

MIMOSA Pro uses multispectral cameras to take pictures of tissues at multiple wavelengths and can be used to track longitudinal changes in tissue perfusion non-invasively. MIMOSA Pro is currently being evaluated in a long-term study (3 years) in the early detection of paediatric LCOS. When combined with advanced machine learning and other advanced analytic techniques clinicians believe they can develop predictive analytical tools for cardiac output and LCOS. At MIMOSA we already know that we make a difference saving the limbs and lives of mostly adults, in particular those at the "aged" end of life. But helping those at the start of life adds to our passion.