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Echocardiography guided septic shock management

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Echocardiography is pivotal in the diagnosis and management of the complex hemodynamics of septic shock. Important characteristics are non-invasive, quick, differentiate hypodynamic from hyperdynamic sepsis and, not only, tailor management accordingly, but follow the trends as well to decide when to go up or down on each line of management. Following are three good examples of patients presented with sepsis and shock: Case1: Elderly male with presented with septic shock due to tertiary peritonitis that was previously healthy. Open laparotomy and resection anastomosis presented to ICU with refractory septic shock and severe lactic acidosis on high noradrenaline/adrenaline requirements and anuric. Echocardiography showed: Hyper dynamic left ventricle, Small right ventricle, good systolic functions, Diastolic dysfunction G II "Pseudo normal" , stroke volume variation (SVV) on left ventricular outflow tract (LVOT) showed positive fluid responsiveness. Adrenaline was replaced with vasopressin and IV fluids were delayed. Re-evaluation showed improving Diastolic dysfunction to GI, SVV on LVOT showed fluid responsiveness. one litre of CSL was infused. Eight hours later acid base status was normalized. Patient was stable enough to be extubated next day and discharged to the ward few days later. Post extubation Echocardiography showed normal ECHO study. Case2: 74-year-old man with a history of COPD presents with infective COPD exacerbation with atrial fibrillation. Intubated d.t. worsening shock, lactate/troponin rising With No ECG Ischemic changes. Bedside echocardiography showed AHFREF with RWMA, Hypodynamic left ventricle, full non-collapsing IVC, with low left ventricular end diastolic and systolic volumes with PAOP is 6 mmHg. Patient was treated with noradrenaline 2 mcg/min dobutamine 5 mcg/kg/min. and received a liter of CSL. Stable to be extubated next morning, Anti-failure measures were introduced and patient was discharged from the ICU 3 days later. Case 3: 63 years old lady presented to ED with CAP, previously healthy except for undiagnosed murmur. Fluids 3L failed to improve her hypoperfusion, Vasopressors added which failed to control the shock, she was intubated and mechanically ventilated with worsening shock. Echocardiography showed AHFREF with severe Aortic stenosis and Mitral regurgitation. Improved with Diuretics, Milrinone and weaning down of Noradrenaline. Sepsis with shock is not infrequently complex management with no clinically distinct clue which line to start with first.

Recent Publications

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Biography

Walid Saad Alhabashy is an Anesthesia and Critical Care Egyptian Consultant with multiple certifications, including MSc, EDIC, EDAIC, Arab Board of Anesthesiology and FCAI. His main expertise is POCUS in critically ill patients particularly when complex hemodynamic management is the scenario. He finished Master's Degree in Echocardiography from Austria, Vienna. He has conducted many national and international courses as course Instructor/Director in Egypt, Gulf area and Europe and worked under different societies, e.g. WINFOCUS and SCCM. He is the founder of YouTube Channel "US/ECHO in Anesthesia/ICU" concerned with POCUS teaching. He has built this own way after years of experience in POCUS teaching in both hospitals and education institutions.

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