

Validity of lung ultrasound FALLS-protocol in differentiating types of shock in critically ill patients

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سيد مدرس الحالات الحرجة

أسماء الباحثين:

د/ أسامة محمود ممتاز
أستاذ مساعد الحالات الحرجة- كلية الطب - جامعة الفيوم

د/ تامر محمد سيد
مدرس الحالات الحرجة- كلية الطب - جامعة الفيوم

د/ علياء عبد الحميد محمد
مدرس الحالات الحرجة- كلية الطب - جامعة الفيوم

ط/ أريج أشرف يوسف
مدرس مساعد الحالات الحرجة- كلية الطب - جامعة الفيوم

Abstract: Acute circulatory collapse is one of the most familiar challenges in ICUs. It is considered that artifacts generated by lung ultrasound (LUS) can help in diagnosis and management. FALLS-protocol using LUS is a tool proposed for the management of unexplained shock. **Objectives:** To investigate the role of LUS FALLS-protocol in differentiating types of shock in critically ill patients. **Patients and methods:** A total of 50 patients presented with undiagnosed shock. Fast bedside echocardiography and LUS FALLS-protocol were applied along with inferior vena cava diameter and collapsibility measurement. **Results:** A total of 19 patients with septic shock on presentation had A profile in all of them and AB profile in three of them, and after resuscitation, they were transformed to B profile with 100% sensitivity, 90.5% specificity, 90.5% positive predictive value (PPV), and 100% negative predictive value (NPV). Overall, 16 patients with hypovolemic shock had A profile in all of them on presentation and after resuscitation, with 100% sensitivity, 94.1% specificity, 88.9% PPV, and 100% NPV. Moreover, eight patients with cardiogenic shock had B profile in all of them on presentation with 100% sensitivity, 95.2% specificity, 80% PPV, and 100% NPV; three patients with obstructive shock had A profile in all of them on presentation, with 100% sensitivity, 25.5% specificity, 7.9% PPV, and 100% NPV; and two patients with anaphylactic shock had A profile in all of them on presentation and transformed to B profile after resuscitation with 100% sensitivity, 50% specificity, 9.5% PPV, and 100% NPV. Our findings showed preference of FALLS-protocol than inferior vena cava diameter and collapsibility in directing fluid therapy. **Conclusion:** Bedside chest ultrasound FALLS-protocol should be considered in the resuscitation pathways with a possible significant effect on patient management.