

### **Small Size, Big Impact**

*Mazor Dray, Efrat; Horowitz, Itai; Gabizon, Isack; Shalev, Aryeh; Bereza, Sergiy; Illia, Ruben; Liel-Cohen, Noha; Kobal, Sergio  
Soroka University Medical Center, Beer Sheva, Israel*

Background: Complementing the physical exam with cardiac imaging using a personal ultrasound device can expedite physicians' accuracy in identifying cardiac diseases at the patient's first encounter. We aim to study the impact of a brief cardiac ultrasound study (CUS) on the triage of patients with a potential acute cardiac event.

Methods: Three cardiac fellows and 3 cardiologists performed a CUS using a pocket cardiac ultrasound system (Vscan from General Electric) on 45 patients with a potential cardiac disease during their acute symptoms as part of the patients' triage. Vscan weighs 300 gr. and can provide 2-dimensional and color Doppler imaging.

Results: Cardiac fellows performed 62% of the 45 patients' triage. The most common reasons for patients' triage were chest pain (56%), dyspnea (20%) and shock/hypotension (10%). The CUS was feasible in 98% of the patients seen. CUS helped physicians to confirm and expedite their diagnosis in 63% of the cases. Based on the CUS results, physicians changed their diagnosis in 22% of the examined patients (most from cardiac to non cardiac). Patient management remained unchanged after the CUS in 26% of the patients. Based on CUS findings, physicians either encouraged or deemed additional procedures in 67% of the patients. The CUS provided information that was corroborative with the clinical findings in 68% of the cases. Unexpected and highly relevant findings were provided by the CUS in 22% of the examined patients. Mean duration of the CUS was  $6.5 \pm 2.5$  minutes.

Conclusions: A brief CUS is highly feasible in the triage of patients with acute symptoms of probable cardiac etiology. Fellows and cardiologists responded to the CUS findings by changing their diagnosis and/or management in a high proportion of the patients evaluated. Unexpected, clinically significant findings are common in this setting. The impact of CUS on patient outcomes when the triage is complemented with a portable cardiac imaging device warrants further study.