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Reply to the letter entitled “Risk Stratification and Timing for Invasive Approach in Patients with non-STEMI”



We appreciate the supportive comments in the letter entitled “Risk stratification and Timing for Invasive Approach in Patients with Non-STEMI” in response to our original article entitled “Gender-Based Outcome Differences for Emergency Department Presentation of Non-STEMI Acute Coronary Syndrome” [1]. Current literature supports the use of coronary angiography and revascularization for the majority of patients with Non-ST-Segment Elevation Myocardial Infarction (NSTEMI). Although the timing of coronary angiography and revascularization remains controversial, we do agree that clinical features and risk stratification play an important role in this decision. Still, we believe shortening treatment delays including time to patient presentation, emergency department length of stay (LOS) as well as important clinical outcomes such as overall hospital LOS and mortality remain important goals.

As we noted in the original article, this was a retrospective observational registry, did not include randomization and no long-term outcomes were available. Nevertheless, the registry is a large contemporary regional MI database with 33 percutaneous coronary intervention centers which provides important insights into contemporary therapy. Our results indicate women present later, have longer emergency department LOS, and are less likely to receive early intervention; all of which may contribute to the higher in-hospital mortality which persisted even after adjustment in age and co-morbidities. These results should encourage not only further investigation, but also the development of NSTEMI protocols that ensure health equity for women.

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Comments on GEDI vs. CVP goal-directed fluid resuscitation for COPD patients with septic shock: A randomized controlled trial



To the Editor,

We have read the paper written by Jiangquan Yu et al. [1] with great interest. A study was conducted to investigate the clinical effects of the global end-diastolic volume index (GEDI)-oriented fluid resuscitation on chronic obstructive pulmonary disease (COPD) patients with septic shock, which resulted that the GEDI goal-directed fluid therapy did improve clinical effects, but it could not reduce the mortality rate. We appreciate the authors for their successful work. However, in order to avoid misinterpretation, some points need be further discussed.

In this article, the authors did not estimate the sample size. The sample size is very important for a clinical research. If it is too small, a false negative result may be obtained even if the most rigorous study is performed. If it is too large, more difficulties and unnecessary expenses will be generated. In this paper, the sample-size calculation should be based on the assumed volume of intravenous fluids administered during the first 6 h in the CVP (central venous pressure)-oriented group of 1713 ml [2]. The software of PASS (power analysis and sample size) is used. Thus, an enrollment of 130 patients would have a power of 80% (at a two-sided alpha level of 0.05) to detect a 30% increase of fluids volume in the GEDI-directed group, with allowance for a 10% loss to follow-up [3,4].

In this clinical study, the authors divided the COPD patients with septic shock into the experimental group and the control group. The experimental group received GEDI goal-directed fluid resuscitation, while the control group was given CVP goal-directed therapy. The value of CVP was assumed to be 12, and the value of GEDI was 800 ml/m². According to Surviving Sepsis Campaign (2012) [5], the target value of CVP should be 12–15 mm Hg for mechanically ventilated patients. And the recognized target value for GEDI is 680–800 m/m². In this clinical study, the authors selected the lowest value for CVP and the highest one for GEDI. It may result in a low fluid capacity for the control group, which is possible to bias experimental data.

According to surviving sepsis campaign: international guidelines for management of sepsis and septic shock: 2016 [6], norepinephrine is recommended for booster drugs. Vasopressin (maximum dose 0.03 U/min) or epinephrine may be added to achieve the target mean arterial pressure. Also, dopamine can be used as a replacement for norepinephrine in specific patient populations (e.g., patients with low-risk risk of tachyarrhythmia/absolute and relative bradycardia). Dobutamine is recommended for patients with continuous low perfusion despite adequate fluid loading and vasoactive drugs are administered. Therefore, the author should list and compare the types and doses of all vasoactive drugs, not just the dose of norepinephrine.

At last, we are sincerely grateful for Jiangquan Yu et al.'s fruitful work. Although there are some minor issues that need to be further discussed and improved, it is definitely still a very meaningful clinical study.

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Availability of supporting data

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Conflicts of interest

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Current use and training needs of point-of-care ultrasound in emergency departments: A national survey of VA hospitals



Point-of-care ultrasound (POCUS) is being increasingly used to rapidly diagnose and manage acute illnesses in different healthcare settings [1]. POCUS use has been considered a core emergency medicine (EM) application since 2001 [1,2]. Given the variability of ED staffing and individual provider skills, current POCUS usage and training needs among physicians working in EDs is largely unknown. Though a few studies have reported POCUS usage patterns, [3,4] a national survey of multiple hospital EDs has not been conducted.

Abbreviations: ACEP, American College of Emergency Physicians; COS, Chiefs of Staff; EDs, Emergency Departments; EM, Emergency Medicine; HAIG, Healthcare Analysis and Information Group; POCUS, Point-of-care ultrasound; VA, Veterans Affairs.

We sought to better understand the current usage, barriers to use, and training needs for POCUS in EDs to guide development of a national POCUS training program for the VA healthcare system. We conducted a prospective observational nationwide study of all VA facilities using an electronic survey in collaboration with the VA's Healthcare Analysis and Information Group (HAIG). The study was deemed to be non-research by the Investigational Review Board of the University of Texas Health Science Center (Protocol Number: HSC20160445N). The web-based survey was distributed to the chiefs of staff (COS) at all VA Medical Centers nationwide (n = 144) between April and July 2016.

We classified facilities as “POCUS users” if the ED Service Chief endorsed usage, or “POCUS non-users” as reported by the COS or the ED Service Chief. We compared POCUS users' and non-users' utilization of 20 common EM POCUS applications based on the ACEP Ultrasound Guidelines [4].

We analyzed data from 115 facilities with EDs [5]. The COS response rate was 100% (n = 115) and Service Chief response rate was 81% (67 of 83) among those Service Chiefs that were provided surveys. Sixteen of the 115 ED facilities were excluded because the COS stated that POCUS was not used in the ED, and there was no survey response from the ED Service Chief to confirm or deny usage. Thus, the final data set included 99 EDs for analysis (Fig. 1).

The current use vs. non-use of the 20 common EM POCUS applications in our survey is summarized in Fig. 2. The majority of EDs reported using POCUS for 4 applications: central line placement (84%), pericardial effusions (69%), peritoneal free fluid (57%), and urinary retention (66%). Of the other 16 EM POCUS applications, facilities reported the least usage for assessment of optic nerve sheath (3%), fractures (10%), cellulitis (15%), and pulmonary edema (16%).

Greater POCUS use was seen in EDs affiliated with an EM residency or fellowship and facilities with higher numbers of hospital beds, ED beds, and annual patient ED visits. Across all POCUS users, we found high rates of support (>70%) from ED Service Chiefs to obtain POCUS training for their physicians. For all diagnostic and procedural POCUS applications, the percentage of POCUS users desiring additional training was consistently higher than POCUS non-users (Fig. 3). Among POCUS users, additional training in diagnostic applications was most desired for assessing volume status (92%), deep venous thrombosis (88%), abdominal aortic aneurysm (87%), and gallbladder/bile ducts (85%).

Given our high response rates from COSs and ED Service Chiefs, we believe these data accurately represent the current status of POCUS use within VA EDs nationally and may be representative of non-VA hospital EDs since many physicians work in multiple EDs. Our study demonstrated that most VA EDs (62%) are using some POCUS applications, compared to studies of non-academic EDs that have reported 29–43% of EM physicians using POCUS [6,7]. Our data demonstrated that VA EDs with relatively fewer operational beds and patient visits were less likely to use POCUS which is similar to other studies comparing rural versus urban ED POCUS usage [8,9].

For all EM POCUS applications, we found that current usage was associated with a desire for additional training in that application. It is unclear why EDs that use more POCUS applications desired more training. Perhaps initial exposure to POCUS facilitates a better understanding of its potential benefits, resulting in recognition of the need for additional training. Our study revealed the two most commonly reported barriers to POCUS use were lack of trained physicians and lack of ultrasound equipment, similar to other studies reporting barriers to POCUS usage in non-VA EDs [8,10–12].

In summary, our findings demonstrate that the majority of VA EDs are using POCUS. POCUS use is more prevalent in EDs affiliated with an EM residency or fellowship program and less prevalent in smaller, lower volume hospitals and EDs. Active POCUS use is associated with an increased desire for further training in POCUS for