Lung Ultrasound Proficiency Study

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Background and Hypothesis: Acute heart failure (AHF) is a major public health burden, and accounts for billions of dollars in healthcare costs annually. Pulmonary congestion is a primary reason patients with AHF seek emergency care. B-lines on lung ultrasound (LUS) is an objective measurement of congestion. It has great implications on diagnosis and prognosis for patients with AHF, but is operator dependent. The goal of this study was to determine if novice sonographers, with limited training, could quantify LUS B-lines with good correlation when compared to experts.

Methods: This was a prospective observational study of novice sonographers from three academic institutions. Sonographers received a structured 2-hour ultrasound training on LUS B-line assessment, which included lecture, B-line video review to practice counting, and hands-on patient scanning. Sonographers quantified B-lines in 4 lung zones in each hemithorax in patients with pulmonary edema. The primary objective was measured by comparing novice sonographer B-line counts to a blinded expert reviewer. We used a cumulative sum method for statistical analysis.

Results: There were xx sonographers, who scanned xx patients with pulmonary edema. We found … (will await Eckert's stats).

Conclusion and Potential Impact: Will await Eckert's stats- **i**f successful, the quantification of B-lines by novice sonographers in patients with AHF may greatly impact diagnosis, prognosis and risk stratification.