

Imaging

SESSION TITLE: Medical Imaging: New Approaches to Old Technologies

SESSION TYPE: Original Investigation Poster

PRESENTED ON: Wednesday, November 1, 2017 at 01:30 PM - 02:30 PM

The Bangladesh Ultrasound Initiative: Creating Impact With Education in a Resource-Limited Setting

Nahreen Ahmed* Vikramjit Mukherjee Ferdous Rahman Tanzib Hossain Abdul Hanif and Anna Nolan NYU Langone Medical Center, New York, NY

PURPOSE: Our overall goal is to create a sustainable ultrasound(US) intervention in resource-limited settings in Dhaka, Bangladesh. Our baseline needs-assessment of the intensive care unit (ICU) of Dhaka Medical College Hospital (DMCH) found that reliable imaging is not available, including ultrasound. The lack of adequate imaging was found to be a deterrent to the proper care of patients. The growing use of point-of-care ultrasound in the ICU as a tool for rapid diagnosis and management led to the creation of the Bangladesh Ultrasound Initiative. This project is designed to bring a successful point-of-care ultrasound training program to physicians in the ICU and emergency room of DMCH.

METHODS: Participants were recruited via posters and emails. Training workshops spanned the course of two days. All sessions included individuals that represented all levels of physician training. The following topics were covered: technical aspects, basic echocardiography, pleural ultrasound, DVT and IVC assessment, US-guided CVL placement, US-guided thoracentesis and FAST exam. Training sessions were divided into three parts: lecture-based learning (2 hours), image interpretation with normal and pathological images shown to participants(1.5 hours), and hands-on practical use with the aid of volunteers(2.5 hours). A pre-test and post-test with the same questions was distributed before and after each workshop respectively. Statistical analysis was completed with the use of a chi-square test and paired t-test.

RESULTS: Fifty individuals were included in the final analysis. The pre-test/post-test had a total of 37 questions, 25 of which were knowledge-based. Knowledge-based questions were grouped into the topics covered as listed in the methods section. There was a statistically significant ($p<0.05$) difference between pre- and post-test scores; the mean pre-test score was 3 (SD=3) and the mean post-test score was 12 (SD=3). A 5-point Likert scale was used to ask questions regarding level of confidence. The mean confidence level on the pre-test was 1 (very unconfident) in every category to 5 (very confident) in the post-test($p<0.05$). A subgroup analysis showed no difference in mean pre-test and post-test scores of participants who had attended an ultrasound course at any point prior to our intervention compared to those who had never attended a previous ultrasound course.

CONCLUSIONS: The results of this study show that a simple workshop in point-of-care ultrasound, using lectures and hands-on practice, can improve knowledge and confidence with statistical significance. This study also shows that the pre- and post-test scores are similar despite some participants having had training in ultrasound prior to the current intervention.

CLINICAL IMPLICATIONS: Despite a significant improvement in test scores after the training workshop, average post-test scores were still only 50% correct. This implies that the workshop may benefit from modifications such as the use of simulation. The lack of difference in pre- and post-test scores despite some participants undergoing training in ultrasound prior to this intervention may imply a need for periodic refresher courses to sustain and improve the level of knowledge and confidence in the use of this imaging modality.

DISCLOSURE: The following authors have nothing to disclose: Nahreen Ahmed, Vikramjit Mukherjee, Ferdous Rahman, Tanzib Hossain, Abdul Hanif, Anna Nolan

No Product/Research Disclosure Information

DOI: <http://dx.doi.org/10.1016/j.chest.2017.08.641>

Copyright © 2017 American College of Chest Physicians. Published by Elsevier Inc. All rights reserved.