Point of care ultrasound: Are junior physician trainees being left behind?

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Introduction

Point of ultrasound (POCUS) use has increased markedly over recent years with decreased cost and increased portability of machines. Its application is well established in trauma patients, dyspnoeic, hypotensive patients as well as for focussed echocardiography in a range of clinical environments. Its use in invasive procedures is shown to reduce morbidity and mortality, and its use now mentioned in the most recent advanced life support guidelines. Numerous royal colleges have recognised this and its use are incorporated into their curriculum. The use of echocardiography is becoming more commonly used by non-cardiologists; in a study of district general hospital intensive care patients an echocardiogram performed by a consultant intensivist led to the change of management in 51% of patients. There is also data showing that POCUS can be reliably taught to acquire images and interpret them; studies including consultant emergency physicians, medical trainees and students have supported this. A study of UK medical students performing Focussed Assessment with Sonography in Trauma scans (FAST) 86% of students were able to perform an adequate FAST scan after a 5 hour teaching session, with 92% of these students feeling POCUS should be a part of the undergraduate curriculum. A study of American Emergency Physicians tested on interpreting echocardiograms before and after a 30 minute module showed that their median scores improved from 61% to 87% on recognising normal versus echocardiograms with regional wall motion abnormalities. The aim of this survey was to assess if core medical trainees are in fact interested in POCUS, to assess their level of training and exposure.

Methods

Severn deanery core medical trainees were asked 7 questions via web based survey tool “survey monkey”. This link was sent to the core medical trainee programme director and distributed to Severn deanery trainees via email. Information on year of training, whether they had attended an accredited ultrasound course, amount of current weekly exposure using POCUS, the indication for performing the scan(s), the course they had attended and what speciality they are intending on applying to for ST3. See full set of questions below:

Results

42 responded to the survey over a 4 week period in Autumn 2016, all of which were core medical trainees, 57% were CT1, 43% CT2. No respondents were officially accredited in an ultrasound discipline, 7% had attended a course but were not accredited, 33% had used ultrasound but had not attended a course, 50% had not used ultrasound and had not attended a course and 10% of respondents were not interested in POCUS. 87% of respondents had used ultrasound less than monthly or never, with only 5% of trainees using POCUS 1-3 times monthly or weekly respectively. The most common indication for performing POCUS was peripheral venous cannulation (71%), followed by thoracic ultrasound (67%), central venous cannulation (45%) and echocardiography (26%). Only 19% of trainees who responded were intending on applying for a speciality with POCUS as part of the curriculum. 90% of trainees had not attended a course, and 5% had attended level 1 thoracic ultrasound course.

Discussion

A surprisingly low amount of trainees had received formal training in ultrasound, 53% had never used ultrasound despite only 10% not having any interest in the area. This could be explained by the overwhelming majority of respondents not intending on applying for specialities which have ultrasound use as part of their curriculum with only a fifth of respondents intending applying for respiratory or cardiology. The data is also consistent with previous surveys of both respiratory and cardiology trainees who found difficulties in achieving adequate experience and accreditation in their respective ultrasound disciplines, with only 44% ST6 respiratory trainees being Level 1 thoracic ultrasound competent and half of cardiology trainees feeling that the time scale to achieve British society of echocardiography accreditation to be unrealistic. This raises the questions; are junior medical trainees being left behind with the lack of exposure and adoption of POCUS into the curriculum? Could it be introduced earlier for trainees interested in acute and procedural specialities to facilitate a smooth transition to higher training? Should peripheral venous cannulation be included in an up to date curriculum? There are however a number of caveats; POCUS is operator dependent, and should be used by appropriately trained and supervised individuals subject to the same rigorous standards set by the Royal College of Radiologists. Not all departments have access to portable ultrasound machines that also have to appropriate expertise on hand to teach.

Full list of questions in Survey	
What training programme currently in?	Core Medical Training ACCS-AM
Year of training currently in	CT1 CT2 Other
What best describes level of US training?	Attended course, accredited Attended course not accredited Used US, not attended course Used US, want to attend course No interest in using US
What best describes exposure to POCUS?	> once per week Weekly 1-3 times per week Less than monthly Never
Indication for using POCUS?	Echocardiography Thoracic US Central venous access Peripheral access Other
Which US course have you attended?	
Which speciality are you applying for St3?

References

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