



Anaesthetist's adherence to aseptic ultrasound practices when performing Ultrasound Guided Peripheral Intravenous Cannulation (USGPVIC). A quality improvement project.

Dr Jessica T Taylor¹, Dr Emmanuel Dhoss¹, Dr Matthew Black¹, Ms Stacey Llewellyn², Dr Nathan Peters^{1,3}

¹Department of Anaesthesia, Royal Brisbane and Women's Hospital, Herston, QLD, Australia ²Queensland Institute of Medical Research Berghofer Medical Research Institute, Herston, QLD, Australia ³University of Queensland, School of Medicine, Herston, QLD Australia

Introduction

A sterile ultrasound cover and sterile conducting medium are recommended when performing ultrasound guided percutaneous procedures to minimise risk of infection to the patient¹. Purpose manufactured ultrasound transducer cover kits meet these requirements². Transparent dressings meet some of these requirements however, they are not approved for use as transducer covers³. We recognised that our departmental practice may not adhere to these standards.

Methods

A prospective audit of aseptic technique employed for USGPVIC was conducted through the departmental wide distribution of a voluntary survey in March 2019. An educational intervention phase occurred between May 2019 to March 2020. A post-intervention audit using identical methodology was carried out in April 2020

Intervention

The intervention phase consisted of 3 main components:

1/ Development of a departmental policy

Recommended: Cleaning of transducer before and after use and cover with a sterile high-quality single use transducer cover; sterile conducting mediums

Not recommended: adhesive dressings and non-sterile conducting mediums

2/ Improving the availability of stock

3/ Educational activities: Presentations, memos, videos, posters

Results

There were 58 respondents to the pre-intervention and 47 respondents to the post-intervention survey. After the intervention the use of recommended transducer covers and conducting mediums increased from 10.3% to 76.6% and 58.6% to 83.0% respectively.

n (%)	Initial N=58	Follow up N=47	p-value
Sterility of transducer cover and medium			<0.001
Not-recommended cover AND non-sterile conducting medium	24 (41.4%)	5 (10.6%)	
One not-recommended option	28 (48.3%)	9 (19.1%)	
Recommended cover + sterile conducting medium	6 (10.3%)	33 (70.2%)	

Participants were 20.4 times more likely to choose both a recommended transducer cover and conducting medium than at least one not recommended option ([OR] 20.4, 95% CI: 7.1 - 58.4).

Conclusion

Adherence to the recommended aseptic precautions for USGPVIC improved after the implementation of some simple interventions. This has the potential to reduce hospital acquired infections and improve patient outcomes.

Conflict of Interest: Nil

References

1. ANZCA. Guideline on Infection Control in Anaesthesia. PS 28, <https://www.anzca.edu.au/resources/professional-documents/guidelines/ps28-guidelines-on-infection-control-in-anaesthesia> (2015).
2. Civo CIV-Flex™ General Purpose Ultrasound Probe Covers, <https://www.civco.com/catalog/ultrasound-probe-covers/civ-flex-general-purpose-covers/> (2020).
3. Australian Government Department of Health. TGA Public Summary: 3M Tegaderm CHG Chlorhexidine Iguonate IV Securement Dressing - Antimicrobial synthetic polymer semi-permeable film dressing, adhesive, [https://www.ebs.tga.gov.au/servlet/xmlmillr6?dbid=ebs/PublicHTML/pdfStore.nsf&docid=214155&agid=\(PrintDetailsPublic\)&actionid=1](https://www.ebs.tga.gov.au/servlet/xmlmillr6?dbid=ebs/PublicHTML/pdfStore.nsf&docid=214155&agid=(PrintDetailsPublic)&actionid=1) (2013).