POINT OF CARE ULTRASOUND IN UROLOGY: BUILDING A FEASIBLE INTRODUCTORY TRAINING PROGRAMS

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INTRODUCTION

• What is POCUS?

DIAGNOSTIC ULTRASOUND

POCUS

HCP orders exam → Ultrasound performed, read, diagnosed → Results given

Ultrasound performed, interpreted, then results given in real time

• POCUS in urology

Testicular Torsion  Hydronephrosis  SP catheter insertion

METHODS

• Guideline based course (Sonography Canada NCP) created by licensed ultrasound sonographers

• Low-cost, hand-made, simulators

A  B  C  D

• Pre- and post course survey & MCQ
RESULTS

• Improved theoretical knowledge

Table 1. Theoretical knowledge

<table>
<thead>
<tr>
<th></th>
<th>Pre-course</th>
<th>Post-course</th>
<th>p-value</th>
<th>d</th>
</tr>
</thead>
<tbody>
<tr>
<td>Multiple choice question assessment (%)</td>
<td>52.4 (10.9)</td>
<td>72.4 (5.5)</td>
<td>&lt;0.001</td>
<td>2.2</td>
</tr>
<tr>
<td>Additional questions (%)</td>
<td></td>
<td>76.6 (8.2)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Standard deviation in brackets

• Improved skill confidence, especially in technical skills

Table 2. Skill confidence scores

<table>
<thead>
<tr>
<th></th>
<th>Pre-course</th>
<th>Post-course</th>
<th>p-value</th>
<th>d</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kidney POCUS</td>
<td>1.7 (0.7)</td>
<td>4.1 (0.7)</td>
<td>0.001</td>
<td>3.4</td>
</tr>
<tr>
<td>Normal appearance</td>
<td>2.2 (1.1)</td>
<td>4.1 (0.5)</td>
<td>0.002</td>
<td>2.2</td>
</tr>
<tr>
<td>Detect hydronephrosis</td>
<td>2.4 (1.2)</td>
<td>4.0 (0.7)</td>
<td>0.002</td>
<td>1.6</td>
</tr>
<tr>
<td>Detect stones</td>
<td>2.1 (1.1)</td>
<td>3.8 (0.8)</td>
<td>0.003</td>
<td>1.8</td>
</tr>
<tr>
<td>Bladder POCUS</td>
<td>2.6 (1.0)</td>
<td>4.2 (0.6)</td>
<td>0.001</td>
<td>1.9</td>
</tr>
<tr>
<td>Normal appearance</td>
<td>2.6 (1.1)</td>
<td>4.1 (0.6)</td>
<td>0.003</td>
<td>1.8</td>
</tr>
<tr>
<td>Suprapubic catheter insertion</td>
<td>2.4 (0.9)</td>
<td>4.1 (0.6)</td>
<td>0.001</td>
<td>2.2</td>
</tr>
<tr>
<td>Testicular POCUS</td>
<td>1.7 (0.9)</td>
<td>4.0 (0.7)</td>
<td>0.001</td>
<td>2.9</td>
</tr>
<tr>
<td>Normal appearance</td>
<td>1.7 (1.1)</td>
<td>3.7 (0.7)</td>
<td>0.002</td>
<td>2.2</td>
</tr>
<tr>
<td>Detect torsion</td>
<td>1.9 (1.2)</td>
<td>3.6 (0.6)</td>
<td>0.002</td>
<td>1.8</td>
</tr>
<tr>
<td>Doppler imaging</td>
<td>1.6 (0.8)</td>
<td>3.7 (0.7)</td>
<td>0.001</td>
<td>2.8</td>
</tr>
</tbody>
</table>

Standard deviation in brackets; Confidance assessed via 5-point Likert scale: 1 = very unfamiliar (little to no experience); 2 = unfamiliar (beginner proficiency); 3 = intermediate (comfortable with use); 4 = skilled user (comfortable with use); 5 = very skilled (expert)

CONCLUSIONS

• This novel study developed an inexpensive, feasible, recommendation-based training program for urological POCUS, developed in collaboration with ultrasound educators.

• Participants significantly improved in theoretical knowledge and skill confidence.

• The basis of this course may serve as a foundation for eventual competency-based training for urological POCUS.